

ELECTRONIC INDUSTRIES

CALDWELL-CLEMENTS, INC.

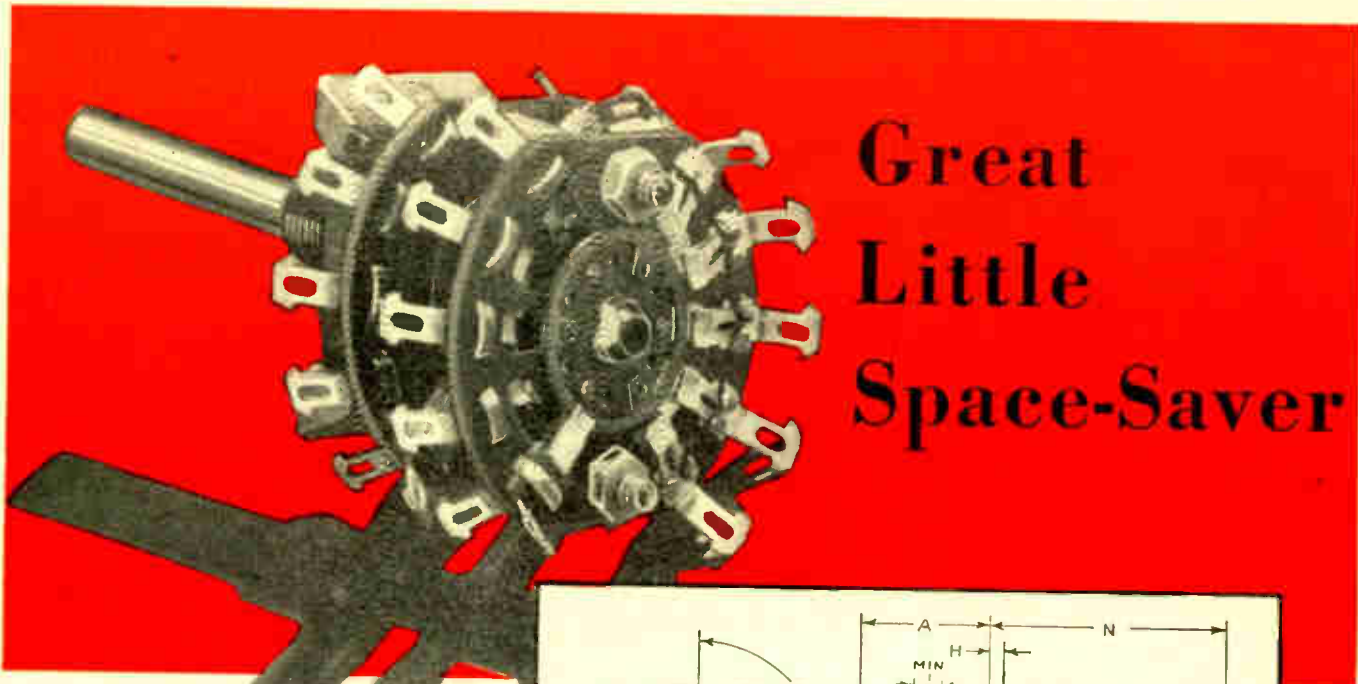
★

MAY 1946



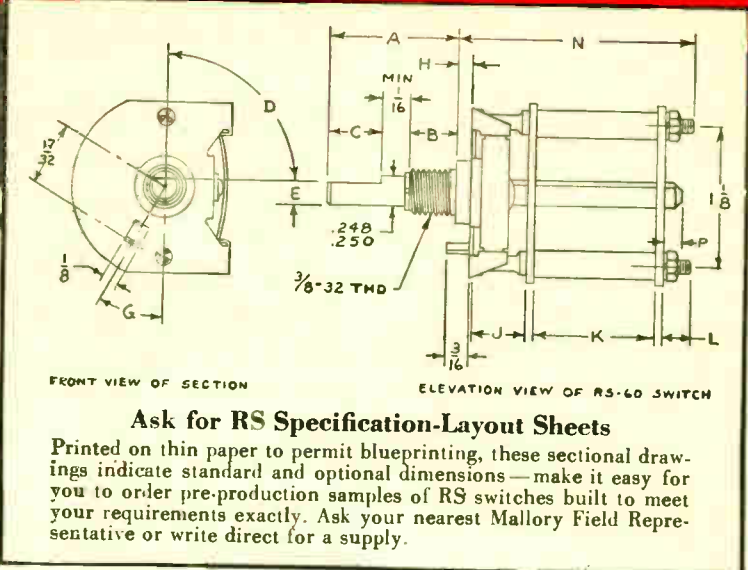
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Issue

**ELECTRONIC MARKETING
ENGINEERING DIRECTORY**



Great Little Space-Saver

MULTIPLE SECTION SWITCH RS-60



Ask for RS Specification-Layout Sheets
 Printed on thin paper to permit blueprinting, these sectional drawings indicate standard and optional dimensions — make it easy for you to order pre-production samples of RS switches built to meet your requirements exactly. Ask your nearest Mallory Field Representative or write direct for a supply.

Cut-Off Sections

Allow It To Fit Crowded Assemblies

WHEN your assembly is already overcrowded and every fraction of an inch counts, the RS-60 is a wonderful life-saver!

In spite of its diminutive size, this multiple-section switch can be made with as many as five positions or ten terminals. It incorporates, too, all these outstanding features:

New, heavier staples and stapling technique, insuring tight terminals . . . Improved low-loss phenolic in both

stator and rotor . . . Unlimited circuit possibilities . . . Six stator rotor supports to improve rotor and contact alignment . . . Star-wheel type index for low torque . . . Double wiping contacts . . . Silver-to-silver contacts . . . Indium-treated, silver plated rotor segments.

For complete information, write for Mallory RS Switch Data Folders and for Specification Layout Sheets. Our engineers will be glad to help with your switch problems. Standard Mallory switches may be readily obtained from your Mallory Distributor.

P. R. MALLORY & CO. Inc.
MALLORY SWITCHES
 (INDUSTRIAL AND ELECTRONIC)

P. R. MALLORY & CO., Inc., INDIANAPOLIS 6, INDIANA

SEE "MALLORY ON PARADE" BOOTH 36. CHICAGO RADIO PARTS SHOW

ELECTRONIC INDUSTRIES

Including INDUSTRIAL ELECTRONICS

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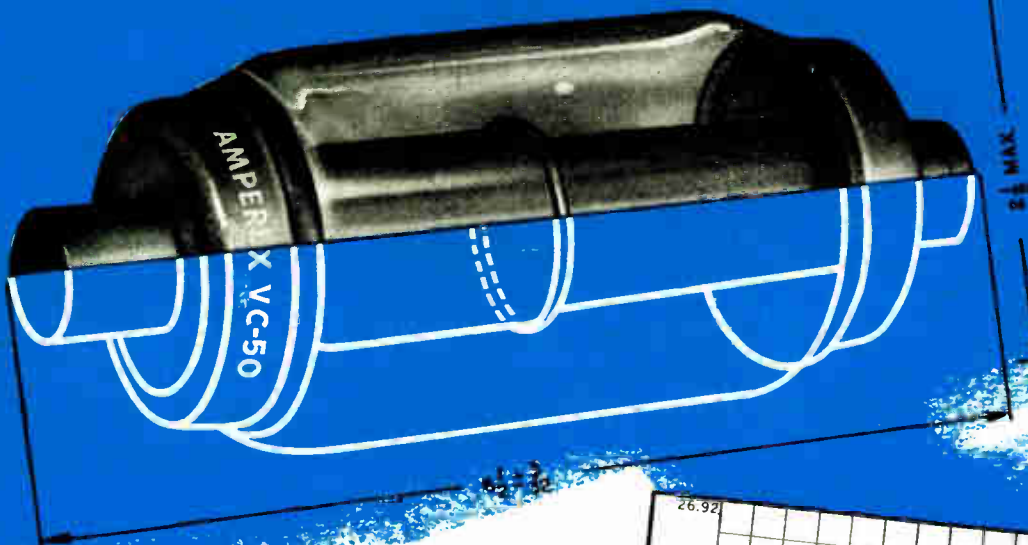
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New Vacuum Condenser Cuts Frequency Drift



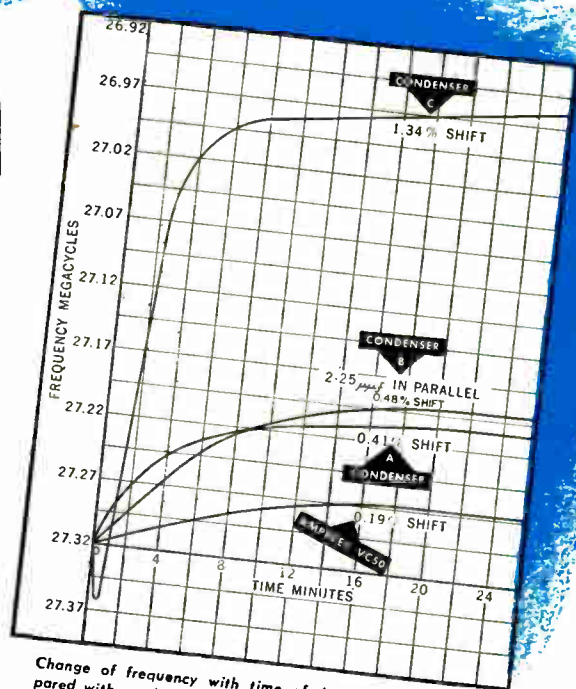
GENERAL CHARACTERISTICS —

Capacitance...50 uuf $\pm 2\%$ • Maximum Peak Voltage...30,000
Maximum RMS Current...65 Amps at 10 Mc. • 40 Amps at 60 Mc.

Higher current handling ability and lower I^2R losses in reduced space simplify equipment design — meets new FCC frequency stability regulations for industrial and electro-medical oscillators using Amperex-developed circuits

Design and manufacturing techniques evolved for high power copper anode tubes were successfully brought to bear in developing the unusual qualities of the Amperex VC50 Vacuum Condenser. This unique all-copper construction with large area seals, no welds and increased mechanical ruggedness insures efficient and economical operation.

READY FOR YOU: Detailed technical rating and data sheets.



Change of frequency with time of Amperex VC50 compared with condensers of three other leading manufacturers in a typical piece of industrial equipment operating at 27.32 MC with a 50 uuf vacuum tank condenser and 2000 V.D.C. plate supply under no-load conditions.

POWER

TUBE SPECIALISTS SINCE 1925

COMMUNICATION
RECTIFICATION
INDUSTRIAL
ELECTRO-MEDICAL
SPECIAL PURPOSE

AMPEREX
ELECTRONIC CORPORATION



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OFFERS THE WIDEST, MOST COMPLETE
RANGE OF TYPES AND SIZES IN

CLOSE CONTROL Rheostats

10 Wattage Sizes from 25 to 1000 watts,
from 1-9/16" to 12" Diameter, with Standard or
Special Features, with Uniform or Tapered
Windings, in Stock or Special Resistances,
in Single, Tandem or Concentric Units.

Only Ohmite provides such a wide range of types
and sizes . . . to give you a quick and correct answer
to your Rheostat needs. Stock models in 25, 50,
100, 150, 300, and 500 watt sizes in a wide range
of resistance values.

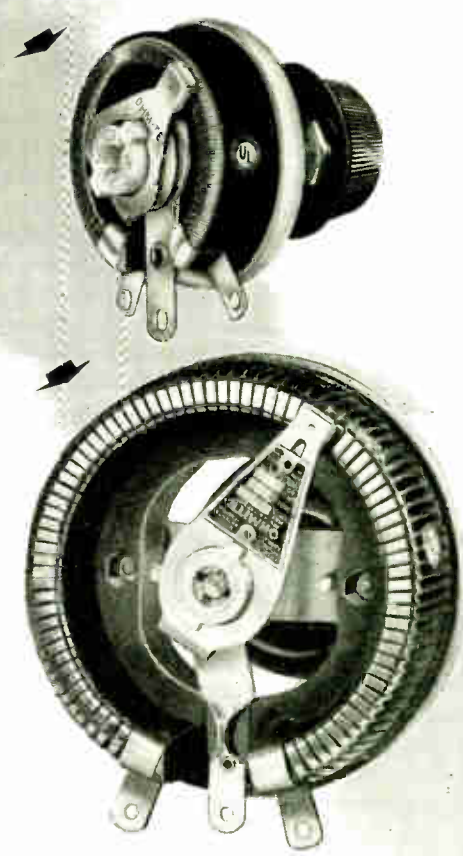
All models have the time-proved features of Ohmite
design—the pioneer design that revolutionized
rheostat construction. Every Ohmite unit assures
permanently smooth close control . . . under every
operating condition.

Get the benefit of Ohmite experience in countless
applications. Let Ohmite engineers cooperate in
solving your rheostat control problems.

OHMITE MANUFACTURING COMPANY
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★ ★ ★

VISIT BOOTH NO. 72 AT THE RADIO PARTS AND
ELECTRONIC EQUIPMENT CONFERENCE AND SHOW
HOTEL STEVENS, CHICAGO, MAY 13-16



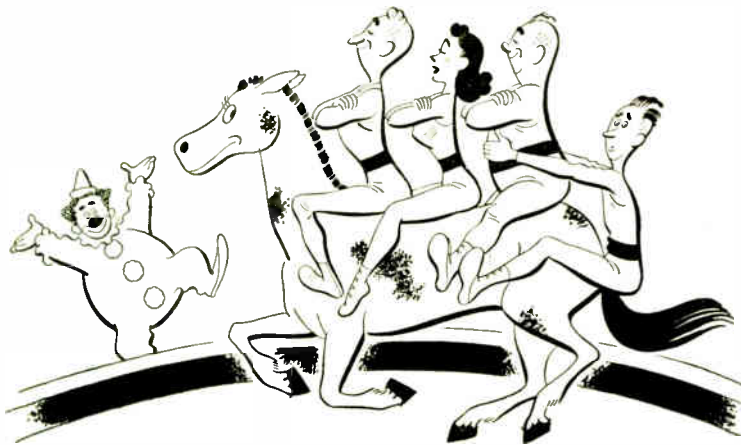
Send for Catalog and
Engineering Manual No. 40

Write an company letter-
head for this valuable
helpful guide in the selec-
tion and application of
rheostats, resistors, tap
switches, chokes and
attenuators.



Be Right with **OHMITE**
RHEOSTATS • RESISTORS • TAP SWITCHES

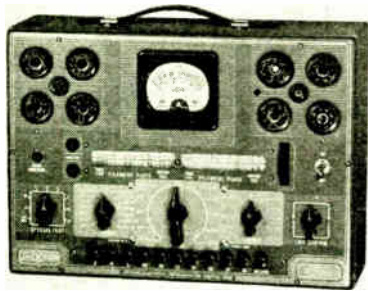
ALWAYS ROOM FOR ONE MORE



The unusually flexible switching system in your Jackson Dynamic Tube Tester is designed to check new tubes for receivers as they come out. New roll charts supplied when necessary. Spare socket positions are also provided.

MODEL 636 DYNAMIC TUBE TESTER

with built-in rotary tube chart



"Dynamic" Method of Test—Makes a better test on every tube. The "Dynamic" method is more accurate, frequently finding poor tubes which might pass for good in ordinary testers.

New High-Voltage Power Supply is a feature of this tester. By testing tubes

at higher plate voltages (over 200 V. for some types), more accurate results are obtained.

Tests All Tubes—ALL of the popular receiving types and television amplifiers, including BANTAMS—LOCTALS—SINGLE ENDED—HIGH VOLTAGE FILAMENT TYPES AND MINIATURES. Provision for many more. The tester is protected against obsolescence in every possible feature.

Roll Chart tube index—simplifies correct settings.

Full Range Filament Selections—From $\frac{3}{4}$ V. to 115 V. Selector marked directly in volts. This feature eliminates guess work and helps operator to avoid mistakes.

Most Improved Type of Switching System—Spare circuits and switch positions provided for future use. Two "spare" socket positions.

Noise Test jacks are provided for audible test of possible tube noise.

Portable Model: Grey leatherette case, 14" long x 12" x 5 $\frac{1}{2}$ ". Weight: 11 lbs. Hinged lid removable.

Bench Model: Welded steel cabinet, 13" long x 9 $\frac{1}{2}$ " x 5 $\frac{1}{2}$ ". Weight: 10 lbs. Rubber bumpers on base and back.

JACKSON

Fine Electrical Testing Instruments

JACKSON ELECTRICAL INSTRUMENT COMPANY, DAYTON, OHIO

THE COVER

A plating process for quartz crystals, developed by Bell Telephone Laboratories and used by the Western Electric Co. in the manufacture of millions of crystal units for the Armed Forces, was probably one of the most outstanding contributions towards mass producing delicate crystal plates during war years.

Prior to the introduction of the plating process, the crystal wafers were hand lapped to exact frequency after the machining operation in order to meet extreme tolerances. By the application of the new process, hand lapping was eliminated. In the process devised, a gold solution was applied and fired, resulting in a base deposit of pure gold on the faces of the crystal wafer to provide a conducting surface. The frequency of this gold plated crystal was measured and the difference from the desired frequency determined. The crystal was then placed in an electroplating bath for a period of time long enough to deposit sufficient nickel on the gold to obtain the desired frequency.

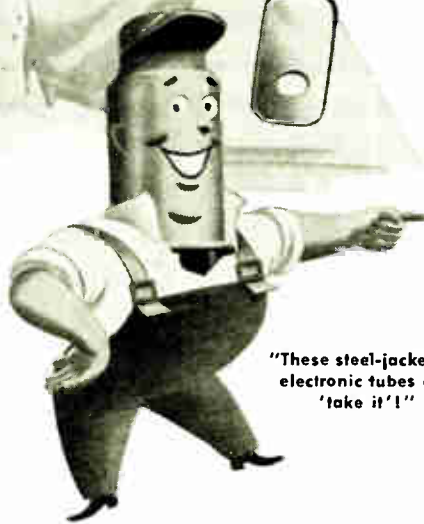
GE College Issues Sheepskins

General Electric Co., which for a period of twelve weeks last fall operated a "college of Industrial Electronics", has issued sheepskins to those who completed the course. Certificates attest that the student "having diligently attended General Electric's special Industrial Electronics Training Course for editors and other vendors of the printed word is presumed to have gained sufficient knowledge of Industrial Electronics to be equipped to lecture on electronic subjects to all Thursday noon luncheon clubs, syndicate a column in all newspapers with circulations greater than 8,000,000 blue pencil recklessly all copy on the subject or otherwise question the authenticity of all statements on matters electronic made by other than classmates or members of the faculty. Moreover the recipient is henceforth to be recognized as a possessor of the degree hereby conferred, Profound Harbinger of an Electronic World, and is entitled to affix to all future bylines the letters PHEW. In witness, thereof, we have this day set our hand and seal—L. A. Umansky (Dean), J. L. Diefenderfer (Co-Chairman), A. H. Moore (Co-Chairman), C. P. Fisher, Jr. (Secretary of Admissions)".

U. S. Navy Official Photo



Battleship-built for tough service... G-E IGNITRONS



"These steel-jacketed
electronic tubes can
'take it'!"



RUGGED for use where heavy-unit manufacture creates shocks and vibration—**BIG** in current capacity, **LONG-LIVED** through days, weeks, and months of continuous service—G-E steel ignitrons march side-by-side with your sturdiest, most dependable plant equipment.

They come to you pre-tested—for ability to do their job and stand up under that job! G-E ignitrons, before reaching your factory, have proved themselves under test conditions which duplicate the most severe to be met in actual use.

Basic design of G-E ignitrons accents details that make for strength. Typical is the fernico metal-to-glass seal which both solidly bonds and insulates the ignitor and the steel envelope. . . . Before manufacture, G.E. exhaustively tests all materials

for quality and stamina. During manufacture, there is complete, step-by-step assembly inspection.

Better built—rigidly tested—fully covered by ironclad warranty—G-E ignitrons also are delivered to you faster! The FG-235-A and other types are stocked *right in your area*, by your G-E tube distributor or dealer who can give immediate service. Telephone this convenient local source today! *Electronics Department, General Electric Company, Schenectady 5, N. Y.*

Type FG-235-A

For welder control, a frequent application, ratings are: max kva demand 1,200, with avg anode current 75.6 amp—max avg anode current 140 amp, with kva demand 400.

Distributors and dealers everywhere, backed up by additional G-E tube stocks in centrally located cities from coast to coast.

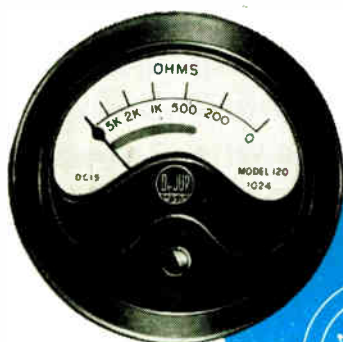
GENERAL ELECTRIC

162-E9-8850

FIRST AND GREATEST NAME IN ELECTRONICS

DeJUR

BUILDS GREAT LITTLE METERS



The DeJur Model 120
Miniature (1 1/2") Meter

The precision-built DeJur 1 1/2" Meters are doing a man-sized job on many applications where space must be conserved.

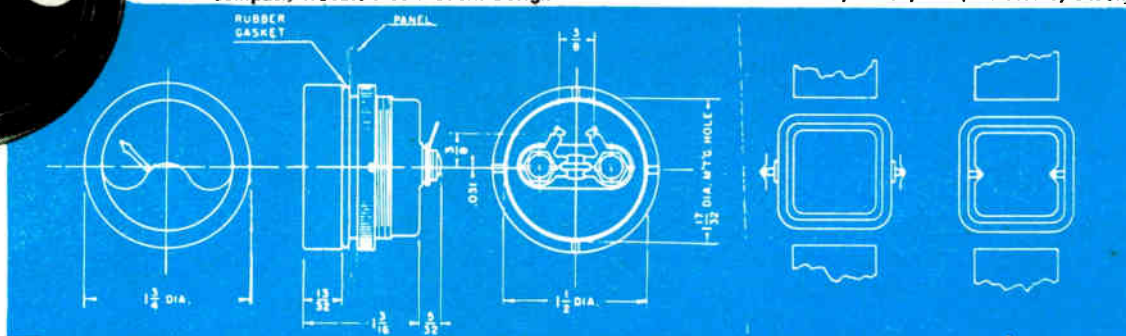
DeJur EXTERNAL

PIVOT construction gives maximum accuracy — reduces pointer-rocking, and wear on bearing surfaces — greatly lengthening the life of the instrument.

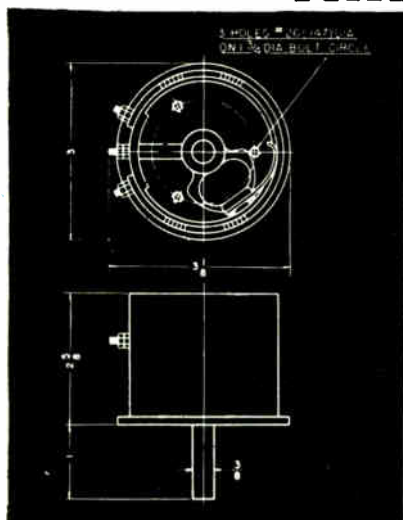
Compact, Trouble-Free Modern Design

External Pivot
(As Used by DeJUR)

Internal Pivot
(Not Used by DeJUR)



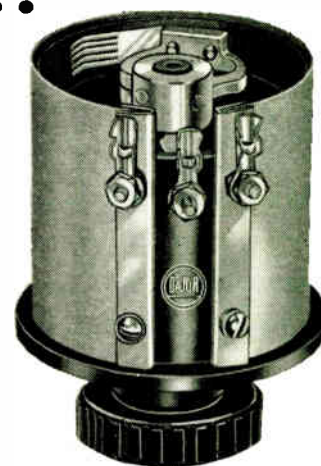
DeJUR RHEOSTAT - POTENTIOMETERS ARE PRECISION BUILT...



Send details of your requirements to DeJur. Our engineers will gladly advise the correct instrument to meet your needs.

in a wide line of models for many electronic and general electrical applications. They are electrically and mechanically engineered to meet the precise requirements of electrical manufacturers.

The 11 Watt Model 275 (illustrated) is typical of DeJur Potentiometers. Rugged yet light in weight, it is built to give outstanding service under the most severe operating conditions.

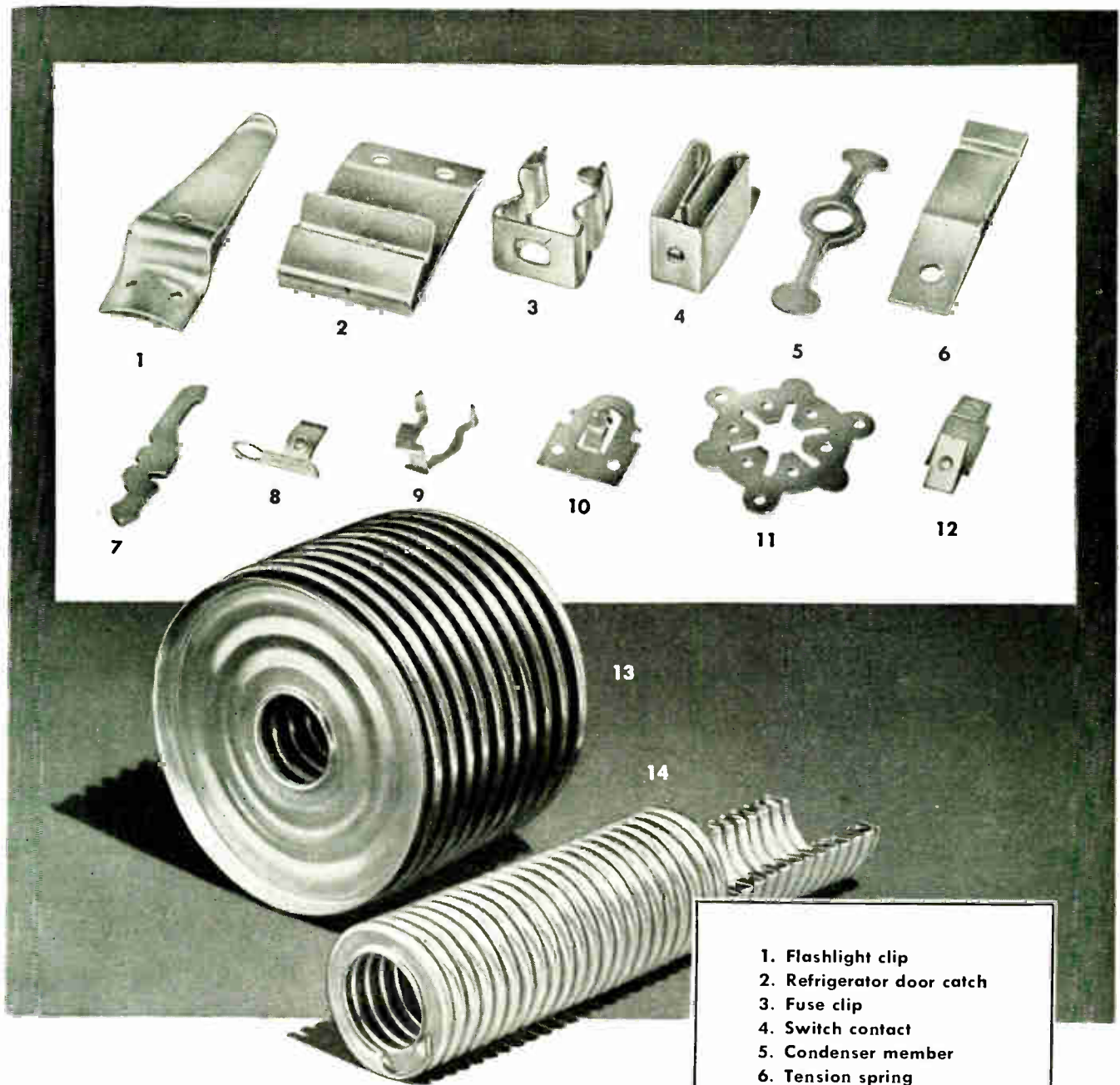


WRITE FOR THE LATEST DeJUR CATALOG



DeJUR-AMSCO CORPORATION
LONG ISLAND CITY 1, N. Y.

AMMETERS...VOLTMETERS...POTENTIOMETERS



1. Flashlight clip
2. Refrigerator door catch
3. Fuse clip
4. Switch contact
5. Condenser member
6. Tension spring
7. Contact blade
8. Sliding contact
9. Guide fork spring
10. Switch tension spring
11. Spring pressure plate
12. 3-way plug contact
13. Tin-coated bellows
14. Flexible hose

REVERE PHOSPHOR BRONZES OFFER MANY ADVANTAGES

Strength — Resilience — Fatigue Resistance — Corrosion Resistance — Low Coefficient of Friction — Easy Workability — are outstanding advantages of Revere Phosphor Bronzes, now available in several different alloys.

In many cases it is the ability of Phosphor Bronze to resist repeated reversal of stress that is its most valuable property. Hence its wide employment for springs, diaphragms, bellows and similar parts. In addition its corrosion resistance in combination with high tensile properties render it invaluable in chemical, sewage disposal, refrigeration, mining and similar applications. In the form of welding rod, Phosphor Bronze has many advantages in the welding of copper, brass, steel, iron and the repair of worn or broken machine parts. Revere suggests you investigate the advantages of Revere Phosphor Bronzes in your plant or product.

REVERE

COPPER AND BRASS INCORPORATED

Founded by Paul Revere in 1801

230 Park Avenue, New York 17, N. Y.
Mills: Baltimore, Md.; Chicago, Ill.; Detroit, Mich.; New Bedford, Mass.; Rome, N. Y. —
Sales Offices in principal cities, distributors everywhere.

Listen to *Exploring the Unknown* on the Mutual Network every Sunday evening, 9 to 9:30 p.m., EDST.

SYLVANIA NEWS

CIRCUIT ENGINEERING EDITION

MAY

Prepared by SYLVANIA ELECTRIC PRODUCTS INC., Emporium, Pa.

1946

ANNOUNCING!

EFFICIENT, NEW SYLVANIA R.F. AMPLIFIER TUBE



TYPE 7AG7

Here's a new sharp cut-off r-f pentode amplifier designed especially for 6.3 volt and a-c/d-c series service in Television and Frequency Modulation receivers.

The tube may be operated with full plate voltage on the screen grid to produce high input resistance as a result of reduced electron transit

TYPICAL OPERATING CHARACTERISTICS OF TYPE 7AG7 AS A CLASS A1 AMPLIFIER

Plate current	6.0 Ma.
Plate resistance	0.75 megohm
Screen grid current	2.0 Ma.
Mutual conductance	4200 micromhos

Direct Interelectrode Capacitances

Grid to plate	.005 micromicrofarad Max.
Input	7.0 micromicrofarads
Output	6.0 micromicrofarads

TYPICAL OPERATING CONDITIONS

Heater voltage	6.3 volts
Heater current	0.150 ampere
Maximum plate voltage	250.0 volts
Maximum plate dissipation	2.0 watts
Maximum screen grid voltage	250.0 volts
Minimum external negative grid voltage	1.0 volt
Maximum screen grid dissipation	0.75 watts
Maximum heater-cathode voltage	90.0 volts

time. Identical voltage requirements for plate and screen grid also eliminate the need of screen grid filter resistors and by-pass capacitors in some circuit applications.

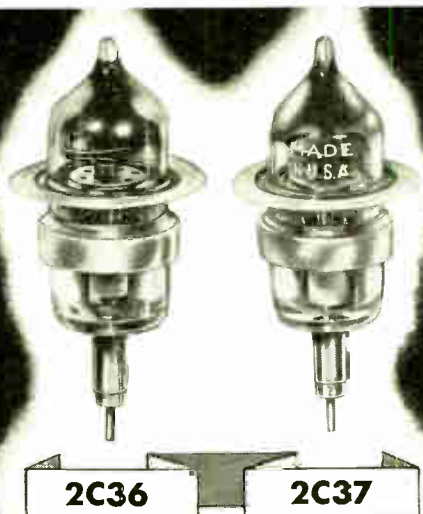
Inquiries concerning the new Sylvania Type 7AG7 r-f pentode amplifier tube are invited. Write Sylvania Electric Products Inc., Emporium, Pa.

SYLVANIA ELECTRIC

Emporium, Pa.

MAKERS OF RADIO TUBES; CATHODE RAY TUBES; ELECTRONIC DEVICES; FLUORESCENT LAMPS, FIXTURES, WIRING DEVICES; ELECTRIC LIGHT BULBS

Announcing TWO TUBES IN A New FAMILY OF VHF TRIODES



2C36 2C37
PHOTOGRAPHS ACTUAL SIZE

- ## FEATURES
1. Streamlined cathode assembly—higher efficiency.
 2. Planar grid.
 3. Minimum interelectrode capacitances.
 4. Minimum transit time effect.
 5. Efficient operation up to 3000 mc.
 6. Maximum power output with minimum input power.
 7. Low heater drain.

An entirely new type of construction characterizes a family of tubes developed by Sylvania research. First of the family to become available are the 2C36 VHF triode oscillator (utilizing internal feedback) and the 2C37 VHF triode general purpose tubes.

PHYSICAL SPECIFICATIONS

Max. length	2.338"
Max. diameter	1.0" ± .005"
Cathode	Coated Unipotential
Base	None required
Mounting Position	Any

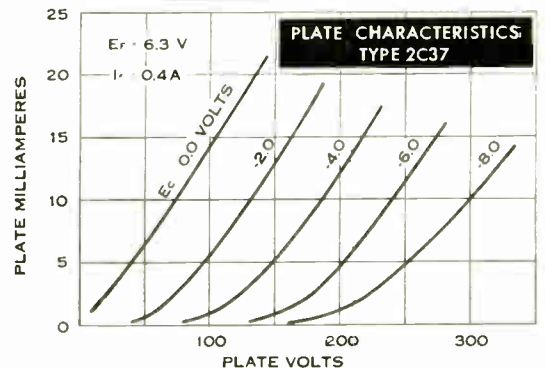
ELECTRICAL CONNECTIONS

Inner Conductor	Heater
Outer Conductor	Heater and Cathode
Straight Disc	Plate
Cupped Disc	Grid

RATINGS and CHARACTERISTICS		
	2C36	2C37
Heater Voltage ± 10% (a-c or d-c)	6.3 v	6.3 v
Heater Current	0.4 amp	0.4 amp
Maximum Plate Voltage	350 v d-c	350 v d-c
Maximum Plate Dissipation	5.0 w	5.0 w
Maximum Efficient Operating Frequency	1200 mc	3000 mc
Maximum Plate Voltage (pulsed)	1500 v	—
DIRECT INTERELECTRODE CAPACITANCES*		
Grid-Plate	2.4 μmf	1.85 μmf
Input	1.4 μmf	1.40 μmf
Output	0.36 μmf	0.020 μmf

* Measured in shielded adapter of approximately 1.5" inside diameter with polystyrene insulation.

TYPICAL OPERATING CONDITIONS and CHARACTERISTICS		
2C36 and 2C37 as Class A ₁ Amplifiers		
	2C36	2C37
Heater Voltage (a-c or d-c)	6.3 v	6.3 v
Heater Current	0.4 amp	0.4 amp
Plate Voltage	180 v d-c	180 v d-c
Cathode Bias Resistor	400 ohms	400 ohms
Plate Current	11.5 ma d-c	11.5 ma d-c
Transconductance	4500 μmhos	4500 μmhos
Amplification Factor	25	25
Grid Voltage for I _b = 10 μa d-c	- 13.0 v d-c	- 13.5 v d-c



2C36 as VHF Oscillator—Plate Modulated	
Peak Plate Voltage	1000 v
Peak Plate Current	0.9 amp
Grid Voltage	0 v d-c
Pulse Repetition Rate	1300 pps
Pulse Width	2 μsec
Frequency of Operation	1000 mc
Peak Power Output	200 w

2C37 as VHF Oscillator—Continuous Wave**	
Plate Voltage	150 v d-c
Plate Current	15 ma d-c
Grid Resistor	3000 ohms
Grid Bias Developed (approx.)	- 11.5 v d-c
Frequency of Operation	1000 mc
Power Oscillation	0.5 w

** Measured in tunable concentric line circuit with external feedback.

Inquiries are invited
Visit us at the Chicago Radio Show — Booth 86

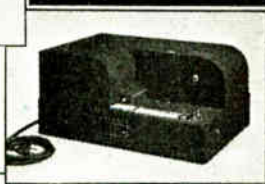
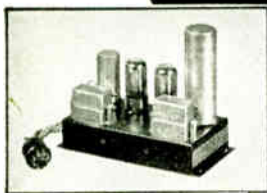
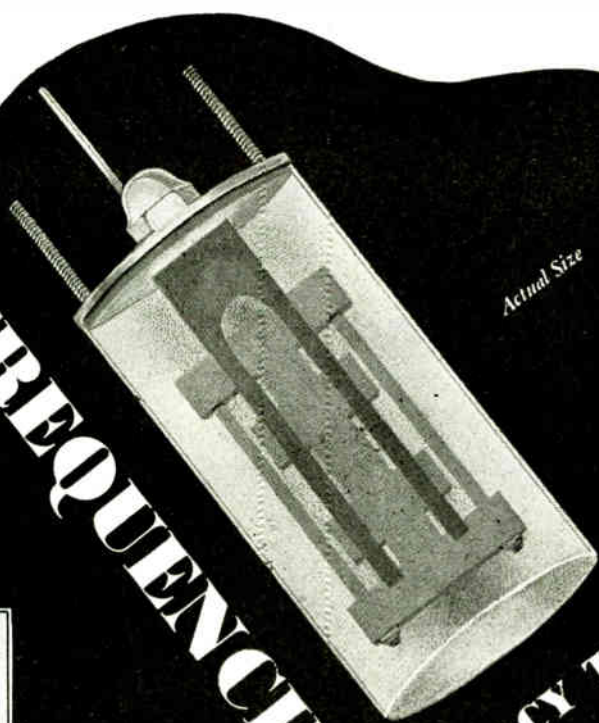
SYLVANIA ELECTRIC

Electronics Division . . . 500 Fifth Avenue, New York 18, N. Y.

MAKERS OF ELECTRONIC DEVICES; RADIO TUBES; CATHODE RAY TUBES; FLUORESCENT LAMPS, FIXTURES, WIRING DEVICES; ELECTRIC LIGHT BULBS

ELECTRONIC INDUSTRIES • May, 1946

LOW FREQUENCIES ACCURACY TO 1/1,000th of 1%



TOP
FREQUENCY STANDARD
(60 cycle) for use with external power supply

CENTER
CHRONOGRAPH
Records time intervals with resolution to .001 second

BOTTOM
FREQUENCY STANDARD
(120 cycles) with self-contained power supply

These tuning forks which include new engineering principles, provide frequencies from 120 to 1,000 cycles directly with an unqualified guarantee of accuracy to 1 part in 100,000 over a wide temperature range. (Better than 1 second in 24 hours). Closer tolerances are obtainable on special order.

These tuning fork assemblies are available only in single or multi-frequency instruments of our own manufacture which are de-

signed to test, measure or control other precision equipment by mechanical, electrical, acoustical or optical means.

The dependability of these frequency standards is being demonstrated for myriad purposes in all climates and under all working conditions.

If you have need for low frequency standards of exceptional accuracy, your inquiries are invited.

American Time Products, Inc.

580 Fifth Ave.

New York, N. Y.

Dist. of Western Electric & **Watch Master** Watch-rate Recorders

Only **FEDERAL** gives you
2 plus values in . . .

FM and TELEVISION LEAD-IN WIRE!

1. *Produced by world's largest manufacturer of high frequency cable!*
2. *Engineered in the same laboratories that have put Federal in the forefront in FM and Television research!*



FEDERAL's high frequency cable is *really engineered* for low-loss signal transmission from antenna to receiver . . . the product of years of experience in FM and Television. -

It's a solid, polyethelene insulated type . . . resisting water, acids, alkalis, oils . . . won't embrittle or age in sunlight. It retains flexibility in sub-zero temperatures; and dimensional precision even in hot weather. Elliptical cross section enables it to withstand twisting and abrasion—eliminates any moisture conduction path.

Federal's lead-in cable is available to you now, in various sizes. Write for complete details.

Federal lead-ins have dual, stranded conductors. Characteristic impedance for commercial telecasts is 300 ohms—capacity per foot is 5 mmf.

Other types produced for special applications and experimental work have characteristic impedances of 200 and 100 ohms.



Federal Telephone and Radio Corporation

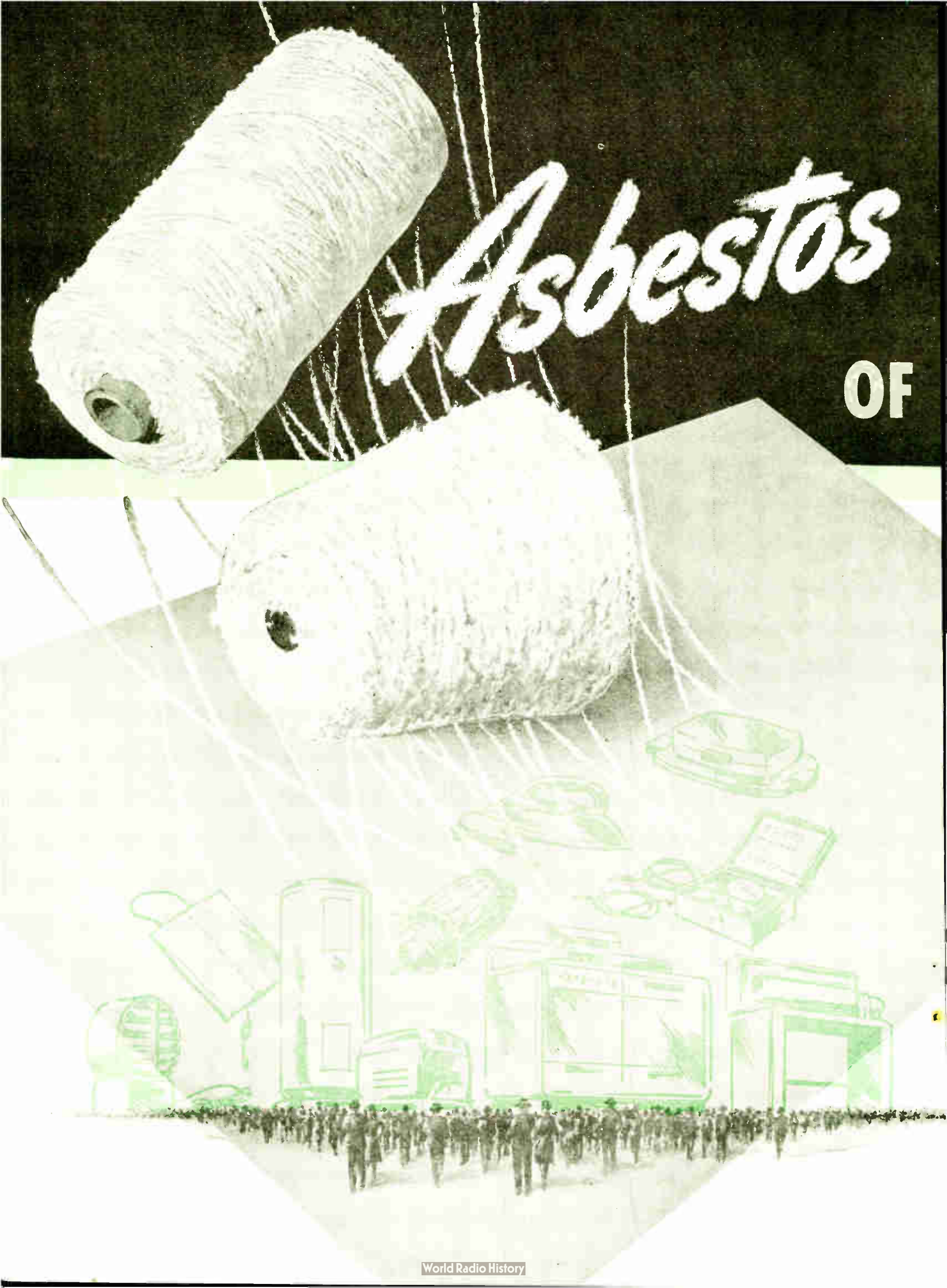
Export Distributor:
International Standard Electric Corporation

Newark 1, New Jersey



Asbestos

OF



Insulated WIRES AND CABLES

GENERAL CABLE QUALITY

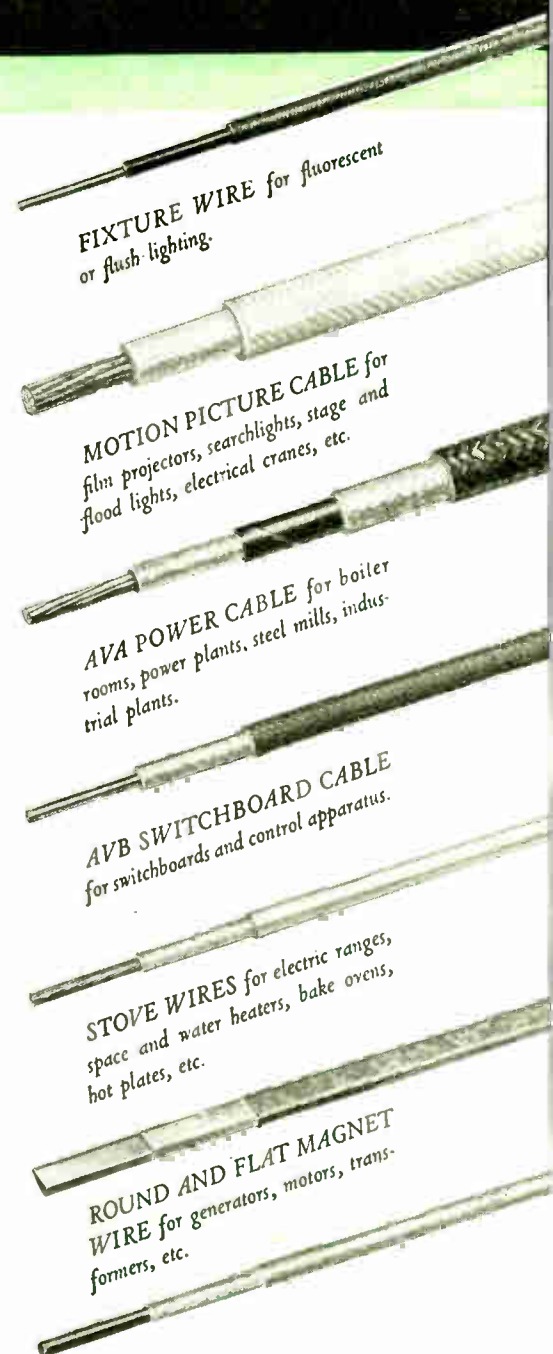
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WILL the possession of physical facilities and desire create a better product? No, because for all of their importance, these possessions are certainly not unique. All institutions have them to some degree. Is it fanciful claims and fluent use of superlatives in product description that make a product better? Obviously not. Is it the achievement of theoretically perfect performance in the laboratory? No, not that either, for perfection in such respects does not necessarily create the *practical ideal*.

The simple truth is that no product can be better than *know how* and the honest application of that *know how* as the product is created and its virtues described.

What is the yardstick of these ingredients in a product? The record of achievements and the list of contributions to the advancement of science and art is one good measurement. The First PM Speaker, the Bass Reflex Principle, the Hypex Formula are just a few of the advancements contributed to the industry by JENSEN. There is also the endorsement by those users and connoisseurs of Loud Speaker performance whose first and last emphasis is always on superiority. JENSEN Loud Speakers and Reproducers are the overwhelming choice of such people. Finally, and perhaps most important of all, there is the established custom of the manufacturer to make honest statements as to the *real ability* as well as *limitations* of the product. Here at JENSEN this has always been a fixed policy, an absolutely essential ingredient in *honesty of purpose*, even though by some standards it is called "selling down."

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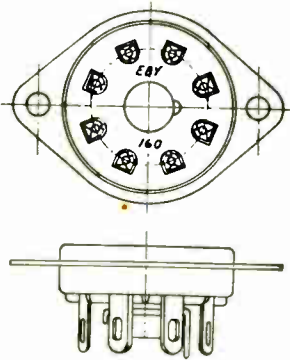
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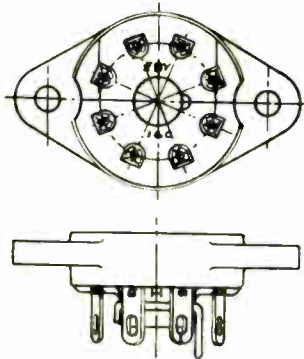
Lock-In, Octal, and Non-Microphonic

LOCK-IN (Low Loss Ceramic)



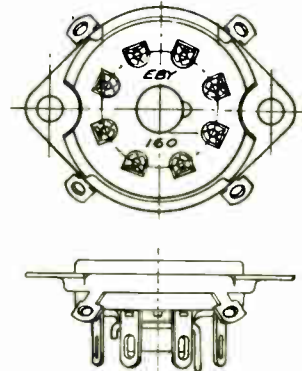
Chassis Hole— $1\frac{1}{16}$ " dia.
Mounting Centers— $1\frac{3}{16}$ "
Mounting—Top or Bottom

LOCK-IN



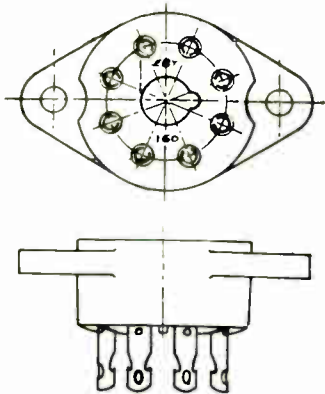
Chassis Hole— $1\frac{1}{16}$ " dia.
Mounting Centers— $1\frac{3}{16}$ "
Mounting—Top or Bottom

LOCK-IN



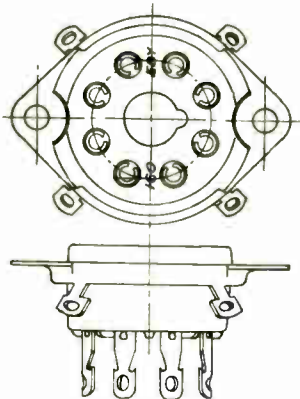
Chassis Hole— $1\frac{1}{16}$ " dia.
Mounting Centers— $1\frac{3}{16}$ "
Mounting—Top or Bottom
With or without Grounding Lugs

OCTAL



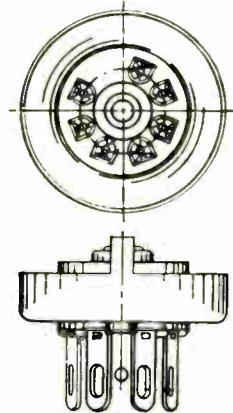
Chassis Hole— $1\frac{1}{16}$ " dia.
Mounting Centers— $1\frac{3}{16}$ "
Mounting—Top or Bottom

OCTAL



Chassis Hole—1" dia.
Mounting Centers— $1\frac{3}{16}$ "
Mounting—Top or Bottom
With or without Grounding Lugs

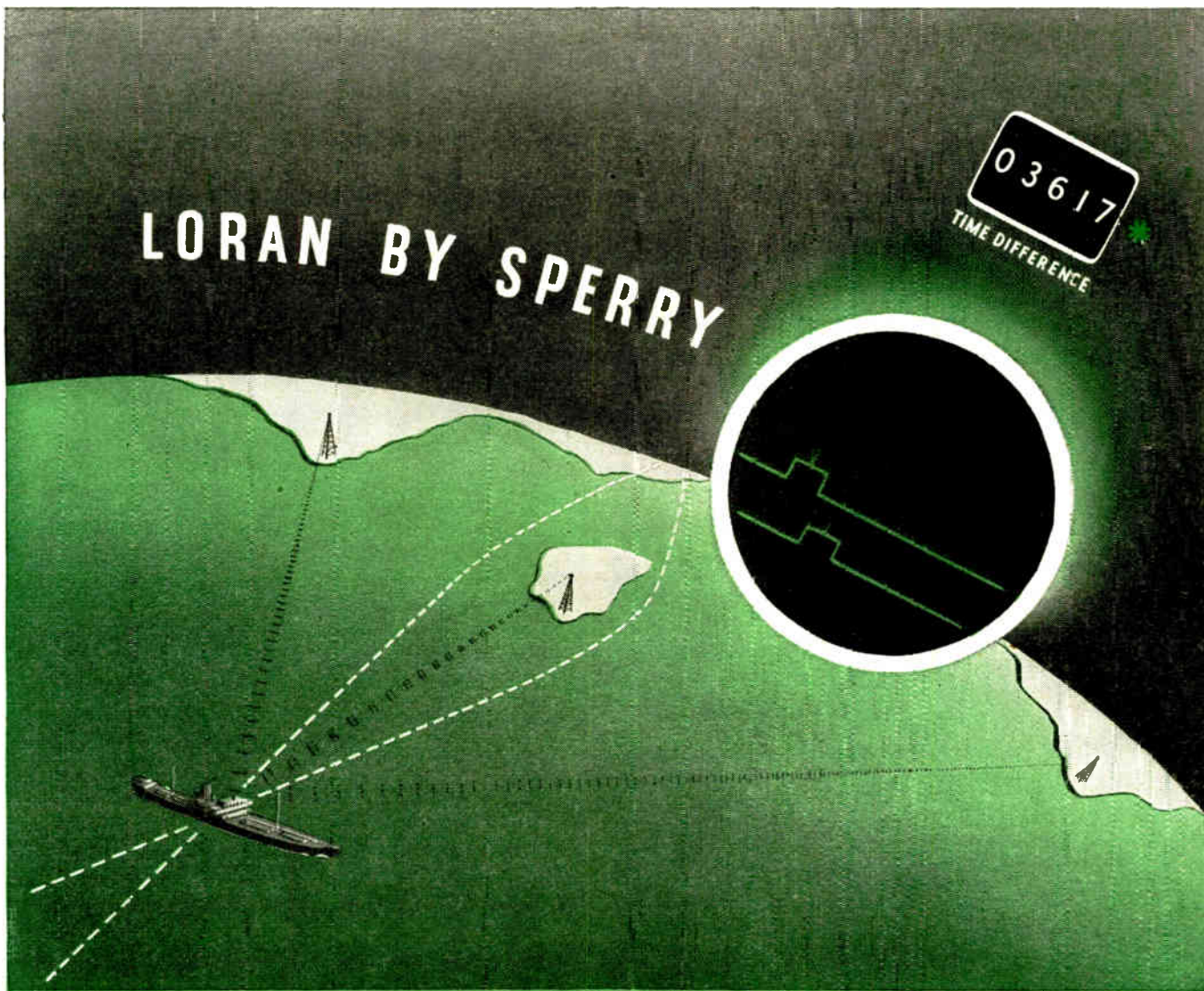
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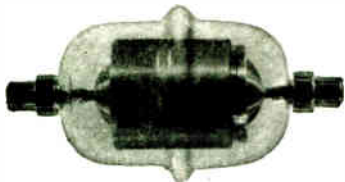
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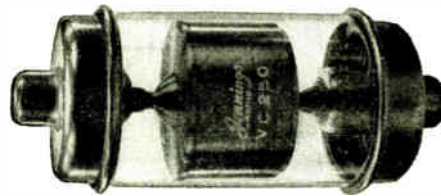
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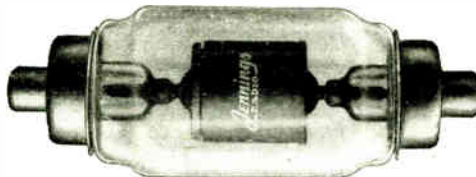
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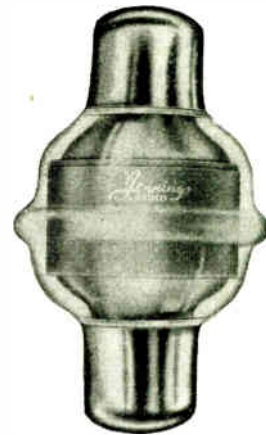
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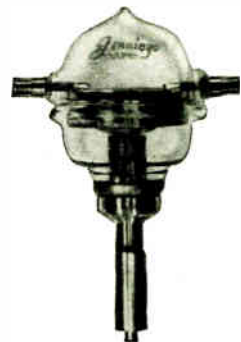
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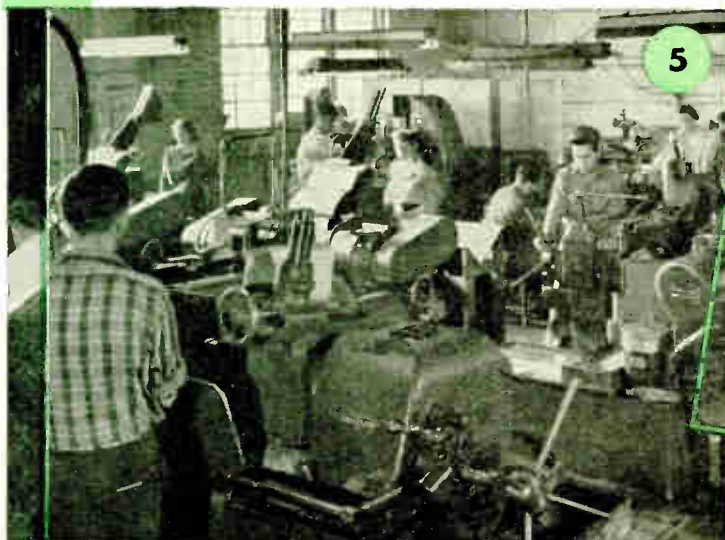
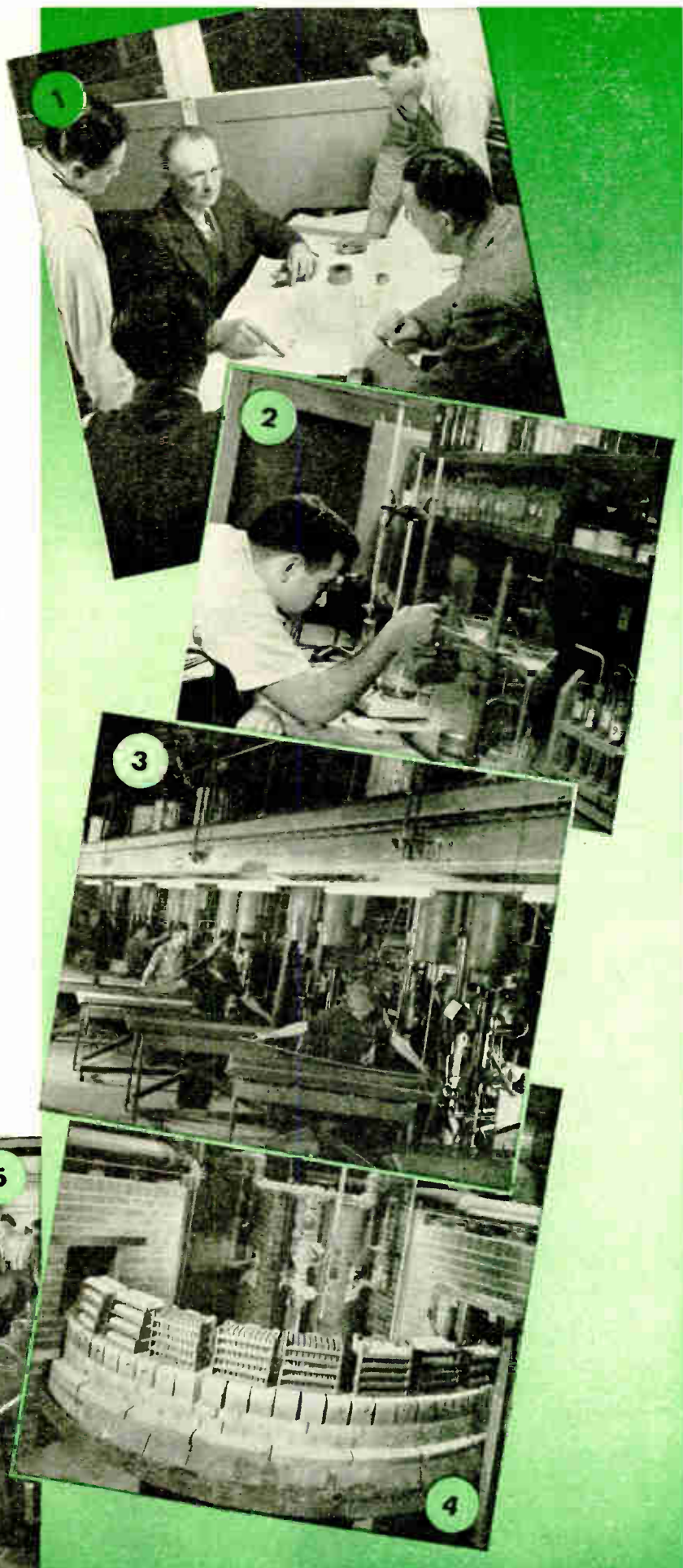
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HERE'S a war development that was in standard use on high-frequency equipment built for the U. S. Army Signal Corps.

It is shielding of knit Monel mesh to "frustrate straying h-f currents by making them run around in circles until they crawl back into the box."

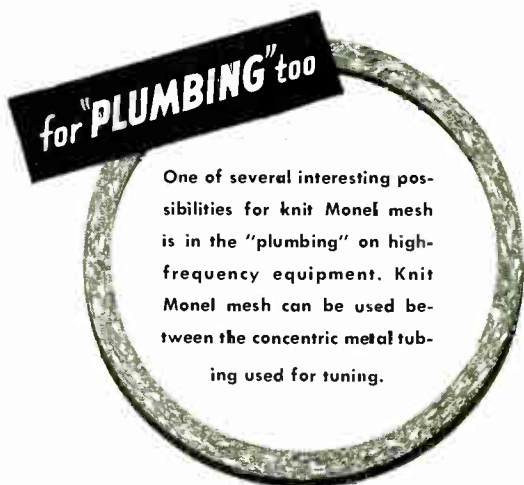
When used in place of fabricated sheet metal shields, these rings can speed production and assembly . . . reduce space requirements . . . simplify disassembly.

Continuous contact is assured by the resiliency of the Monel mesh. Any loss of over-all conductivity due to atmospheric or marine corrosion is minimized by the excellent corrosion resistance of Monel.

And, where fluid seal attachments are needed, designers find that Monel can be satisfactorily bonded to rubber-like materials.

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One of several interesting possibilities for knit Monel mesh is in the "plumbing" on high-frequency equipment. Knit Monel mesh can be used between the concentric metal tubing used for tuning.

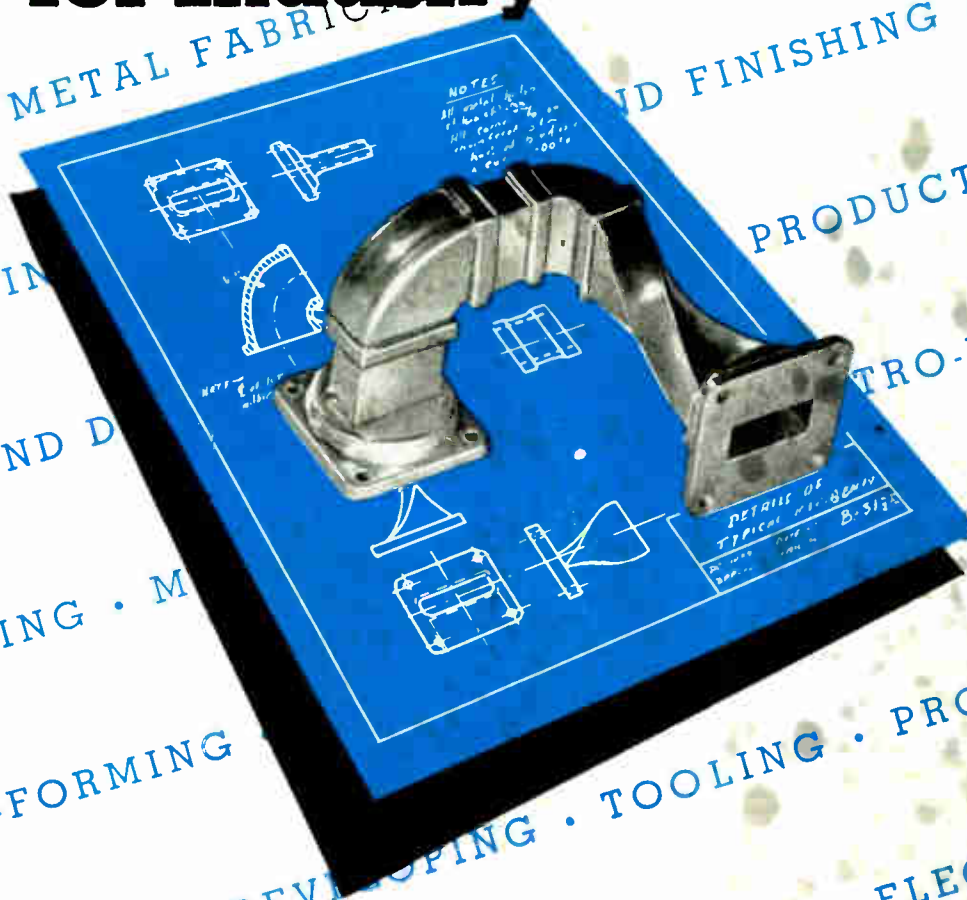
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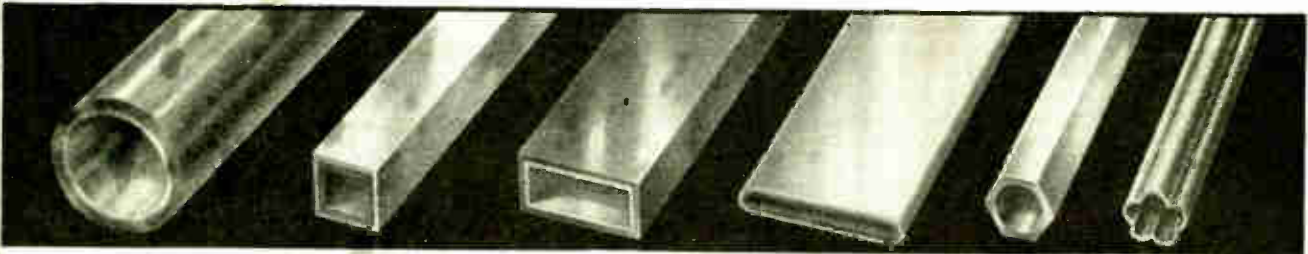
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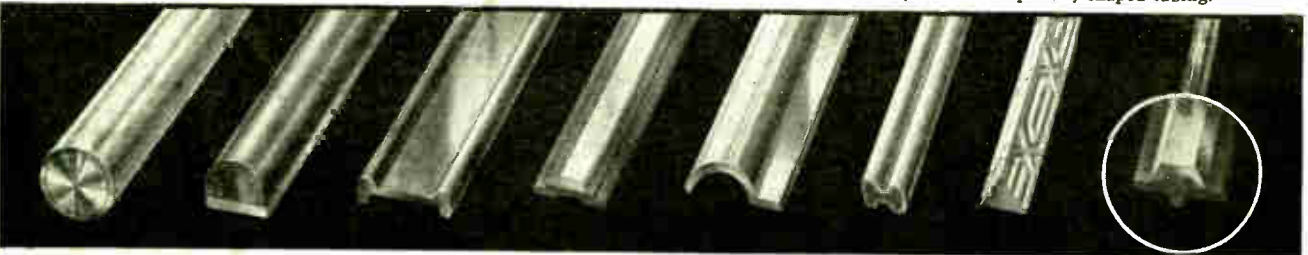
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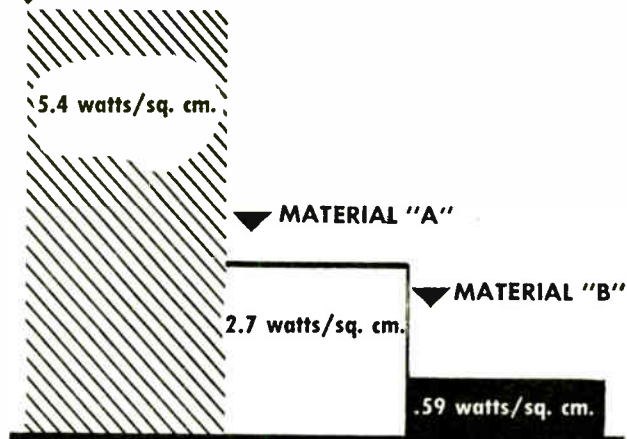
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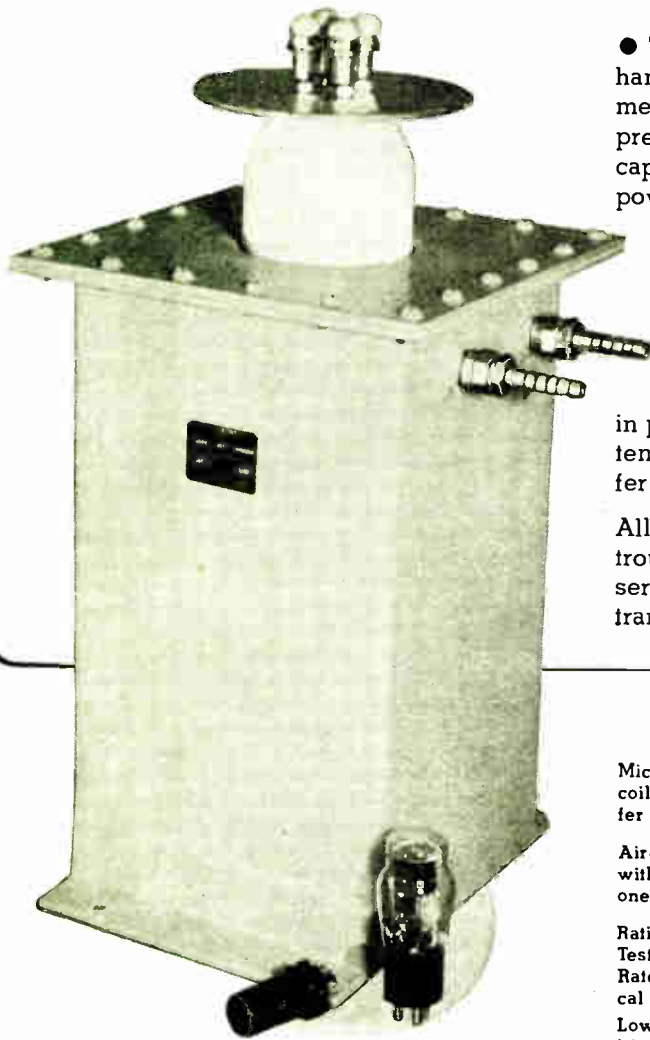


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Mica stacks in oil bath. Cooling coils in oil bath for efficient transfer of heat.

Air-cooled operation, 200 KVA; with water-cooling, 1000 KVA—a one-to-five ratio.

Ratings up to 25,000 volts A.C. Test. Capacitances up to .01 mfd. Rated loads up to 1000 KVA. Typical unit: 20,000 V. at .01 mfd.

Lower power factor (.01%). Long life and large factor of safety.

Provisions for making connections with high-current-capacity conduc-

tors. Four-stud terminal. Grounded case.

Heavy welded metal case, hermetically sealed. Exceptionally sturdy construction.

Series-parallel mica stack designed for uniform current distribution throughout.

Silver-plated hardware for minimum skin resistance. To minimize or eliminate corona, terminals are finished with large radii of curvature. Steatite insulator shaped to hold gradients below corona limits.

TECHNICAL DATA ON REQUEST



FOR RADIO-ELECTRONIC AND INDUSTRIAL APPLICATIONS

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Resilient Lightweight

NATIONAL VULCANIZED FIBRE

takes the "kinks" out of tough production problems

If you need a strong, yet more flexible material to improve performance and efficiency of products or plant equipment—you're likely to get just the flexibility you want in National Vulcanized Fibre. All grades of National Vulcanized Fibre are not flexible—many are very hard, bone-like—but other grades are flexible and varying *degrees* of flexibility are available through a special treatment.

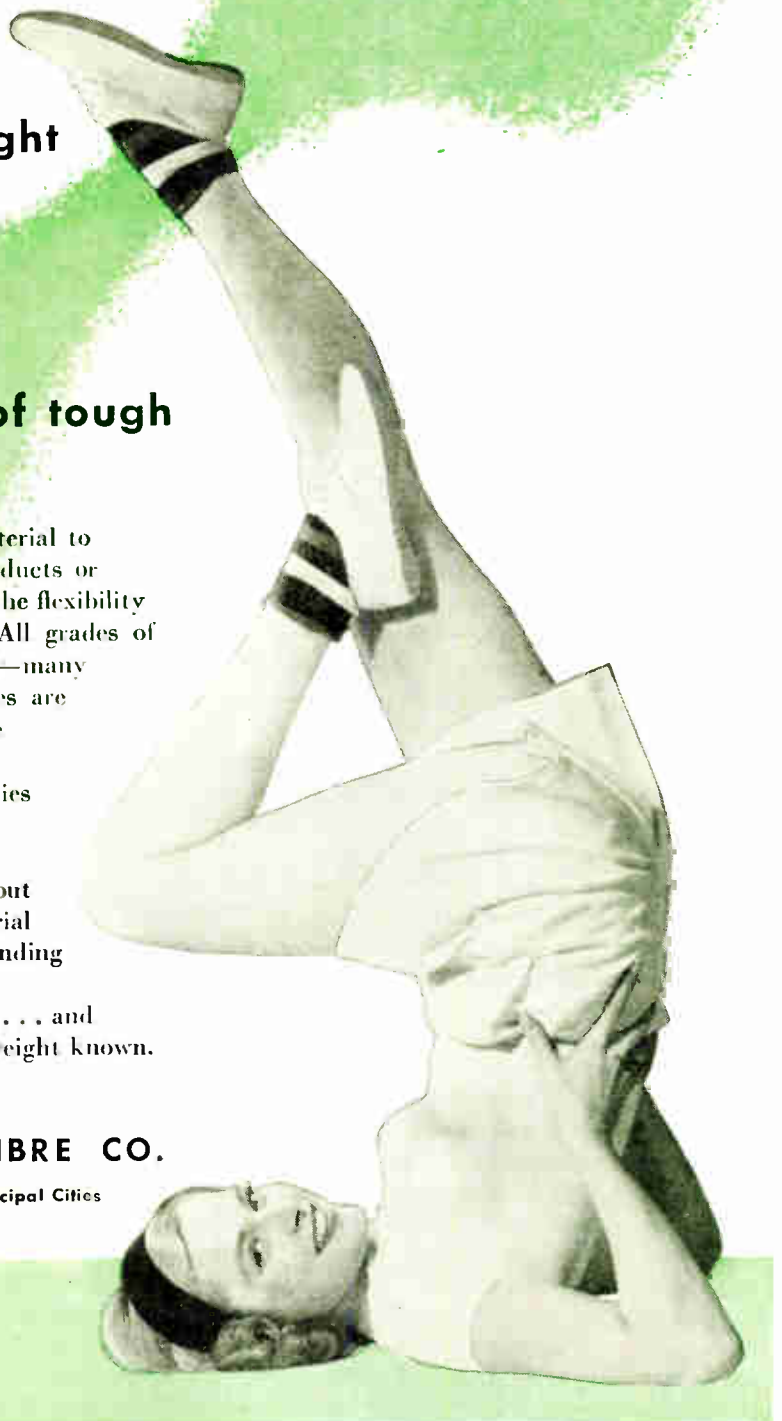
But it's the *unusual combination* of properties of National Vulcanized Fibre which may make it your answer to new, profitable products. Resilient and light in weight (about half that of aluminum), this versatile material is easily machined and formed. It has outstanding impact, tensile and dielectric strength . . . is extremely resistant to wear and abrasion . . . and is one of the strongest materials per unit weight known. Write for complete information.

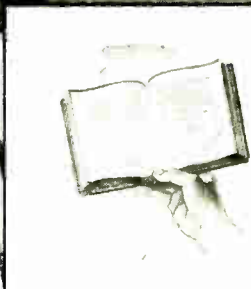
NATIONAL VULCANIZED FIBRE CO.

Wilmington, Delaware



Offices in Principal Cities





more efficient
... in miniature

To accommodate the reading matter we find between the covers of a small book would have required several dozen unwieldy, hand inscribed, parchment scrolls in Roman days. This is a striking example of greater efficiency in miniature but no more so than TUNG-SOL Miniature Electronic Tubes.

From everyone's viewpoint Miniatures are superior, especially for high frequency circuits. More compact equipment and less storage space are obvious advantages of Miniatures to both manufacturers and dealers. The engineer, however, sees their greater resistance to the effects of vibration

and shock, lower lead inductance, lower inter-element capacities and higher mutual conductance.

Manufacturers of radio sets and other electronic devices are invited to work with TUNG-SOL engineers in the development of more compact and more efficient electronic equipment through the use of Miniature Tubes. Of course, consultation work of this nature is strictly confidential.



ACTUAL SIZE

TUNG-SOL

vibration-tested

ELECTRONIC TUBES

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RADIO PARTS AND ELECTRONIC EQUIPMENT SHOW
STEVENS HOTEL, CHICAGO, MAY 13 to 16

TUNG-SOL LAMP WORKS, INC., NEWARK 4, NEW JERSEY
Sales Offices: Atlanta • Chicago • Dallas • Denver • Detroit • Los Angeles • New York
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COLORTONE *Microphones*

Turner pioneers again! *Colortones* are here to bring distinctive beauty to microphone applications. Especially created for bands, television studios, entertainment spots and home recorders, these rugged plastic microphones come in a range of gem-like colors. Their lustrous, streamlined beauty will blend, harmonize or contrast with any setting. And new inside too! Improved crystal and dynamic circuits result in smoother, more accurate reproduction. Write for complete specifications and information on *Colortone* colors now available.



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ARTHUR HAGGSTROM,
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**TURNER-Pioneers in the
Communications Field**



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Always Reliable - All Ways!



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MINIMUM FRICTION • SILENT • CONSTANT SPEED
LONG LIFE • TROUBLE-FREE OPERATION

RELIABILITY of operation is the prime requisite of a good record changer. New and more efficient features have been added to the complete line of SEEBURG RECORD CHANGERS . . . but only after these features were given exhaustive laboratory and field tests . . . for RELIABILITY is the quality that is built into all SEEBURG RECORD CHANGERS. Years of trouble-free operation in actual use is the best proof that SEEBURG RECORD CHANGERS are Always Reliable—All Ways!

SEEBURG *Wire* RECORDER

An Electronic Engineering Achievement

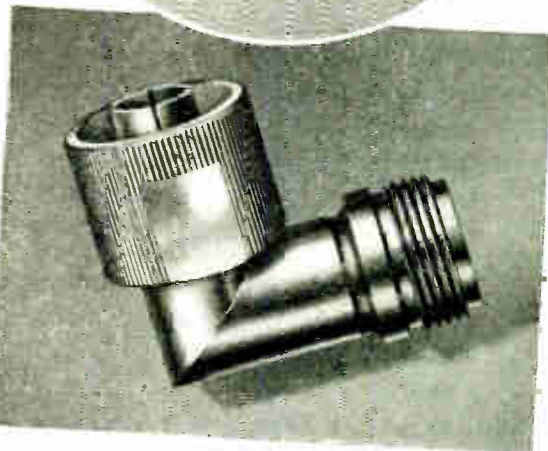
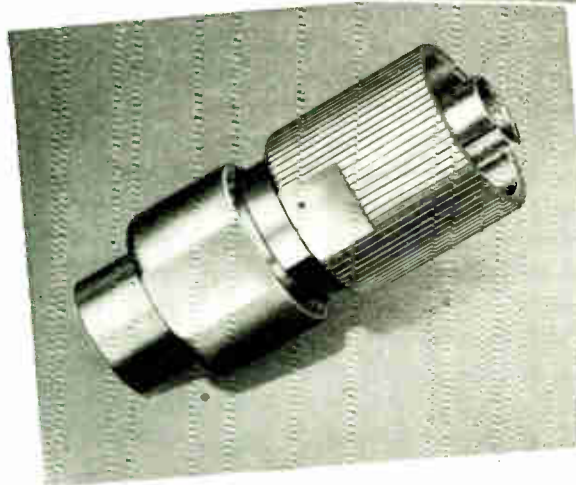
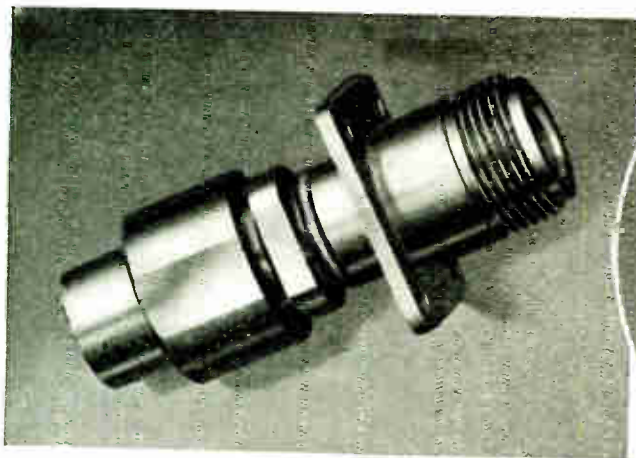


The SEEBURG WIRE RECORDER is a revolutionary new recording and reproducing instrument. The versatility of the SEEBURG WIRE RECORDER readily lends itself to practical uses in the commercial, legal and entertainment fields. One simple control knob operates the SEEBURG WIRE RECORDER to record and reproduce speeches, plays, meetings, music, radio programs, etc. There are no needles or discs used.

IT WILL BE NECESSARY...
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DICO can handle, to your complete satisfaction, the development and production of coaxial transmission lines and fittings, wave guides, dipole antennas, directional antennas, plumbing for VUHF, RF cable assemblies, slotted lines, probes, voltmeters, standing wave indicators, frequency measuring devices, wave meters, and other precision instruments. Unexcelled for its exactness, DICO can also offer the same adaptability and proficiency for any comparable type of development and manufacture, whether in part or whole. Our representative will call for consultation, without placing you under any obligation. Ask now.

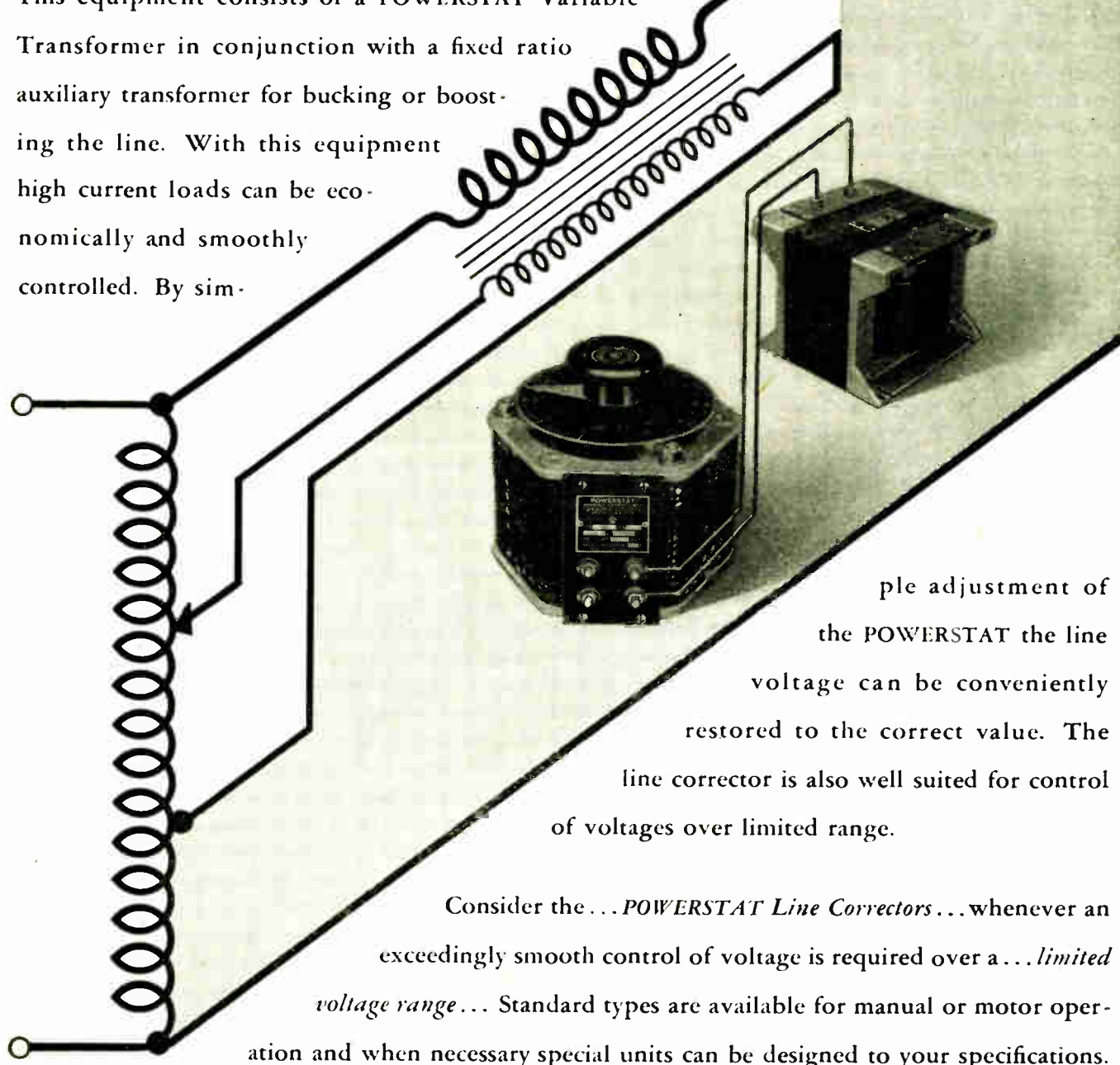
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This equipment consists of a POWERSTAT Variable Transformer in conjunction with a fixed ratio auxiliary transformer for bucking or boosting the line. With this equipment high current loads can be economically and smoothly controlled. By sim-



ple adjustment of the POWERSTAT the line voltage can be conveniently restored to the correct value. The line corrector is also well suited for control of voltages over limited range.

Consider the... *POWERSTAT Line Correctors*... whenever an exceedingly smooth control of voltage is required over a... *limited voltage range*... Standard types are available for manual or motor operation and when necessary special units can be designed to your specifications.

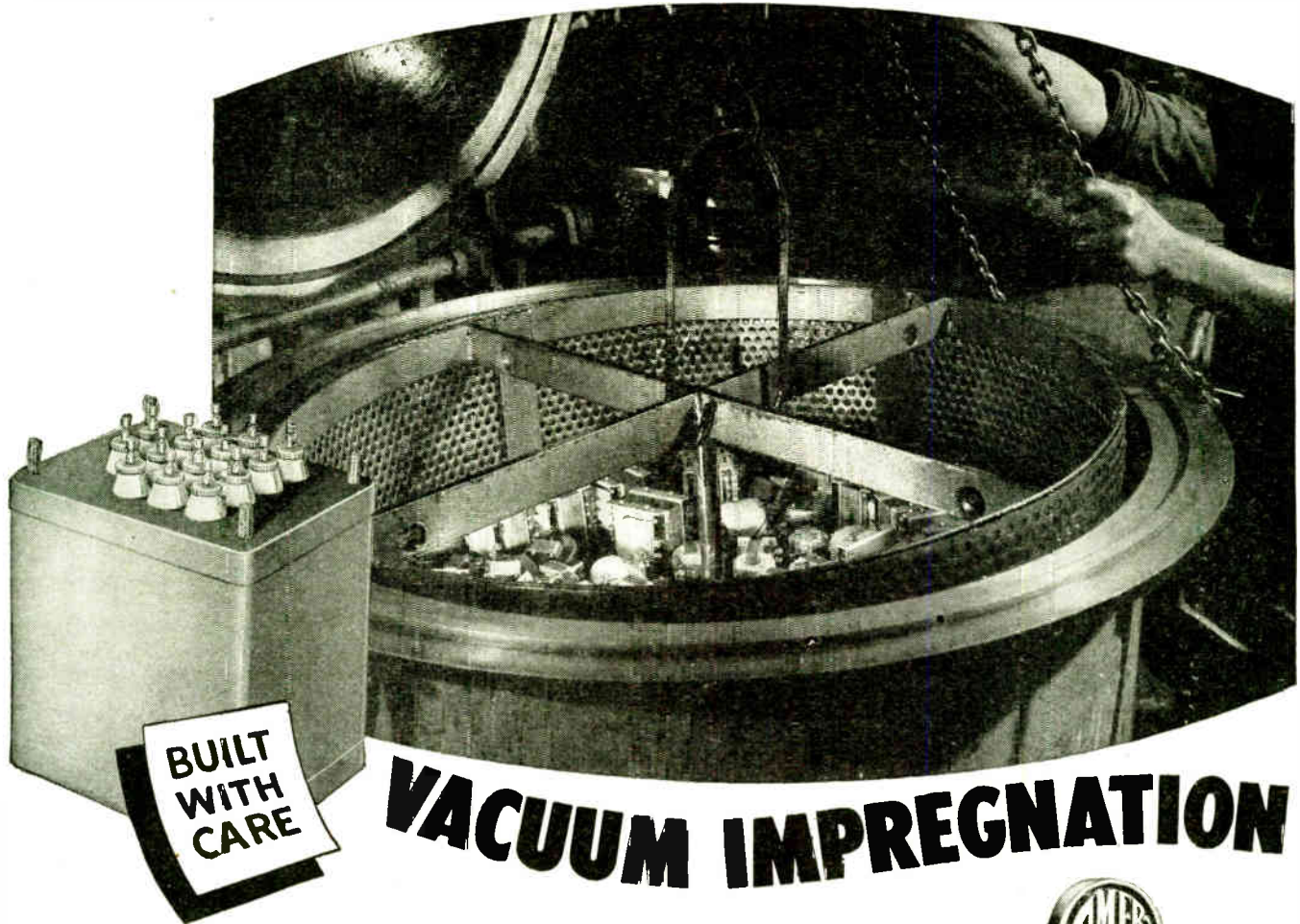
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VACUUM IMPREGNATION

Vacuum impregnation helps to stabilize the performance characteristics of AmerTran-Transformers. Each unit is subjected to both heat and a vacuum process to withdraw all moisture. While still in the vacuum chamber, the compound is introduced and forced into every interstice and around all surfaces of the windings.

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The AmerTran trademark is found on...

Audio Transformers and Reactors
Modulation Transformers (to 500 KVA)
Hermetically Sealed Transformers
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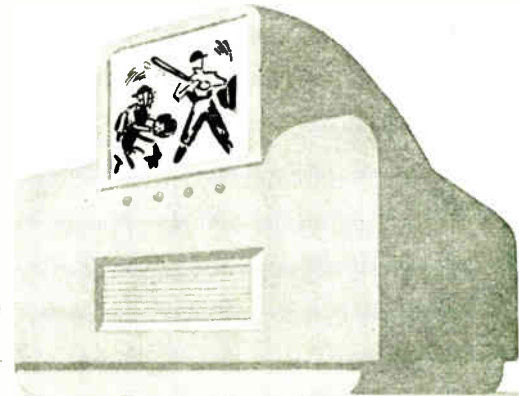
Pioneer Manufacturers of Transformers, Reactors and Rectifiers for Electronics and Power Transmission



AMERICAN TRANSFORMER CO.,
178 Emmet St., Newark 5, N. J.

TELEVISION

Projection...



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Whether your television plans embrace direct-viewing, projection, or both, you'll find RAULAND Cathode Ray Tubes adaptable to your needs. Research, continuing from television's early beginnings to development of theatre-size screen projection, has enabled RAULAND engineers to produce the finest direct-viewing and projection type tubes, using either reflective or refractive optics.

Consult with our engineers about your television problems with respect to Cathode Ray Tubes.

Be sure to visit Rauland Booth No. 83 while at Radio Parts and Electronic Show, Stevens Hotel, Chicago. May 13-16.

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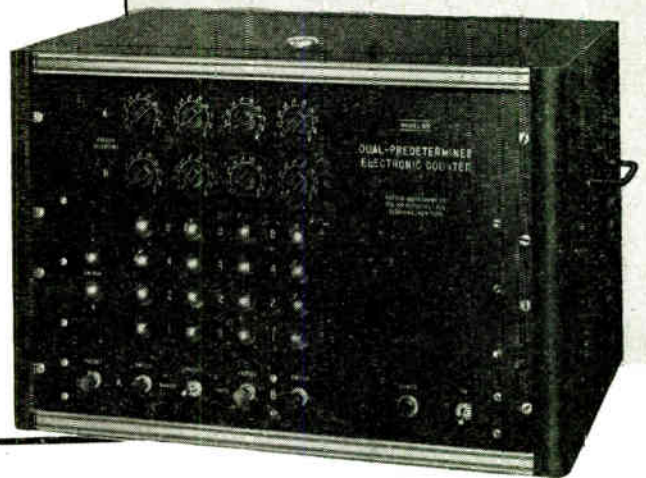
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Announcing a new industrial control device...

Potter

**DUAL-PREDETERMINED
ELECTRONIC COUNTER**



For processes requiring a rapidly repeated operation to occur after a predetermined number of counts!

A time and money-saving instrument . . .

- for counting and stacking sheet metal.
- for rapid and accurate control of length and spacing of slide fasteners.
- for use in automatic packaging of objects such as buttons and pills.
- and for many other operations throughout industry.

The Potter Dual Predetermined Electronic Counter is an innovation in the field of industrial control where the product to be controlled can be set up by discrete predetermined numbers. It employs three or four standard Potter 4-tube counter decade circuits which are arranged to give two independent predetermining channels in which any number, from 0 to 10,000, may be initially set up by simply manipulating the rotary switches that are mounted on the front panel. During the operation, each channel is alternately pre-set to the desired determined number . . . this is accomplished automatically by self-contained circuits and occurs in much less than one millisecond, a speed not obtainable with predetermined mechanical counters

The input is arranged for operation with either make-contacts or sharp negative pulses. Input frequencies may be in excess of 1000 cycles per second. Output includes an ultra-high speed relay with single pole double throw contacts. One circuit is closed during the first predetermined cycle. The other is closed during the second cycle. Power operation is obtained from a 110 volt 60 cycle circuit. The standard unit may be ordered for a total count capacity of 1000 or 10,000 with either the single or dual predetermining channels. Other count capacities on special order.

POTTER TWO-DECADE ELECTRONIC COUNTER . . . a versatile instrument for use as a counter, timer, interval controller, radiation counter, etc. Non predetermined. Counts up to 1000 per second. Output relay for connecting to external electromagnetic counter to extend count.

STANDARD COUNTER CHRONOGRAPH . . . for measuring time intervals such as encountered in projectile velocity measurements to the nearest 10 microseconds with a full scale reading of 0.1 second. Special chronographs counting at rates of 400 K.C. or 1.6 m.c. for high precision measurement

INTERVAL GENERATORS . . . for producing a predetermined time interval in discrete steps of 10 microseconds.

Additional Details on these Potter Instruments Will Be Forwarded Promptly.

ELECTRONIC COUNTER PRODUCTS

136-56 ROOSEVELT AVENUE

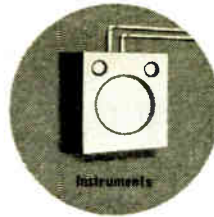
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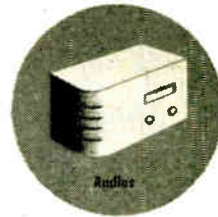
For Economical Precious Metal Performance

Overlay, precious metals,
one side or both sides,
any thickness.

Base metal, steel, copper,
nickel, etc.



Instruments



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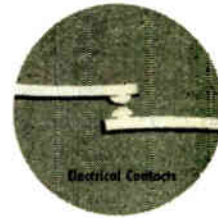
Chemical Apparatus



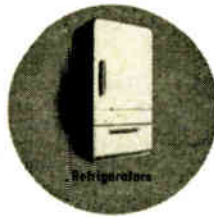
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Mobile Equipment



Electrical Contacts



Refrigerators



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... USE **GENERAL PLATE Laminated Metals**

You simply can't beat General Plate Laminated Metals for solid precious metal performance at low cost.

Combinations of thin layers of precious metal permanently bonded to heavier base metals, they give you all the performance characteristics of solid precious metals yet you only pay for the thin layer of gold, silver, etc., plus the low cost of the base metal backing.

Typical application for General Plate Laminated Metals are electrical equipment, chemical apparatus, instruments, mobile equipment, aircraft, signal apparatus and electronic devices. Their advantages include economy, better electrical performance, high corrosion resistance, ease of

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Base to base metal combinations are also available for those applications where single base metals do not provide structural, mechanical or performance requirements desired.

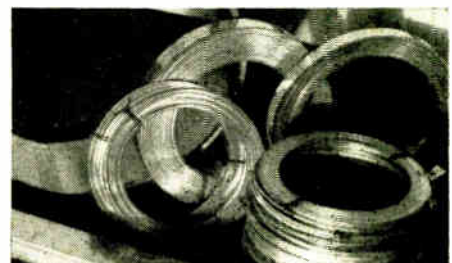
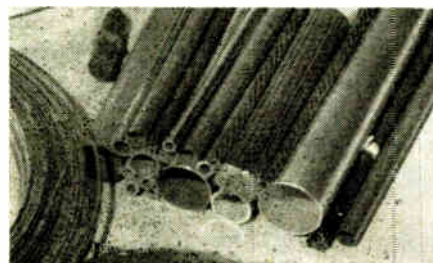
Find out about General Plate Laminated Metals, today. They are available in sheet, wire and tube form or as fabricated assemblies. Write.

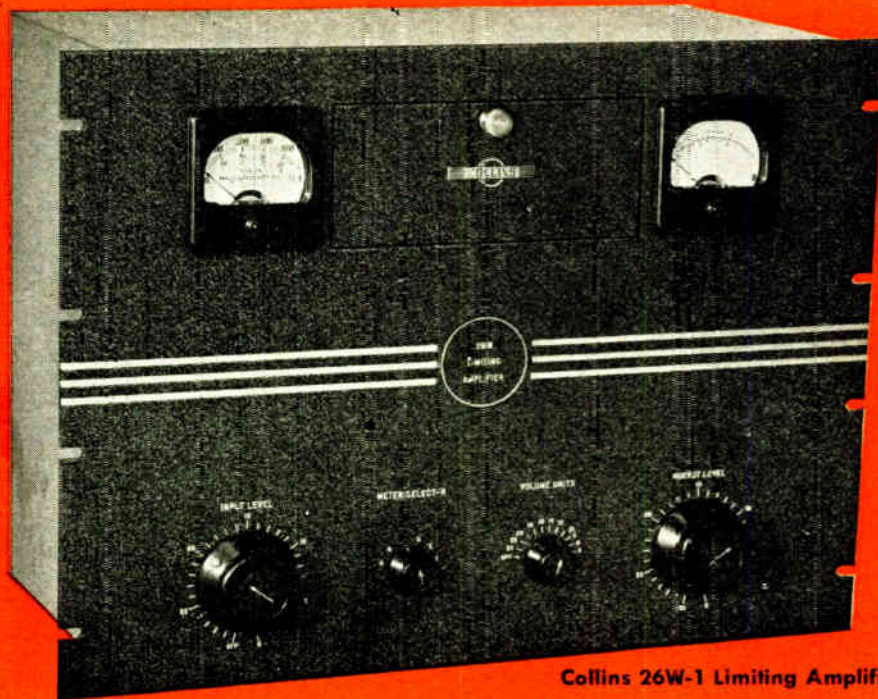
GENERAL PLATE DIVISION

of Metals and Controls Corporation

50 Church St., New York, N. Y.; 205 W. Wacker Drive, Chicago, Ill.; 2635 Page Drive, Altadena, California; Grant Bldg., Pittsburgh, Pa.

ATTLEBORO, MASSACHUSETTS





Collins 26W-1 Limiting Amplifier

Collins Speech Equipment

provides better program transmission and stronger signals

THE COLLINS 26W-1 audio limiting amplifier is a product of the most advanced standards of broadcast engineering. It effectively raises the modulation level, yet prevents overmodulation of the r-f carrier. The resulting stronger signal assists materially in station area coverage.

Developed for high fidelity AM and FM applications, the 26W-1 has a frequency response flat from 30-15,000 cps, with a variation of less than 1.0 db. The compression ratio above the verge of compression is 20/1 in db. Harmonic and tone distortion are not more than 1.5% at any frequency, any setting of the input and output levels, and with any amount of compression up to 15 db. Hum and noise are 70 db below the operating level. Output range is -4 to $+26$ dbm.

Complete metering provides measuring facilities for individual tube currents, plate volt-

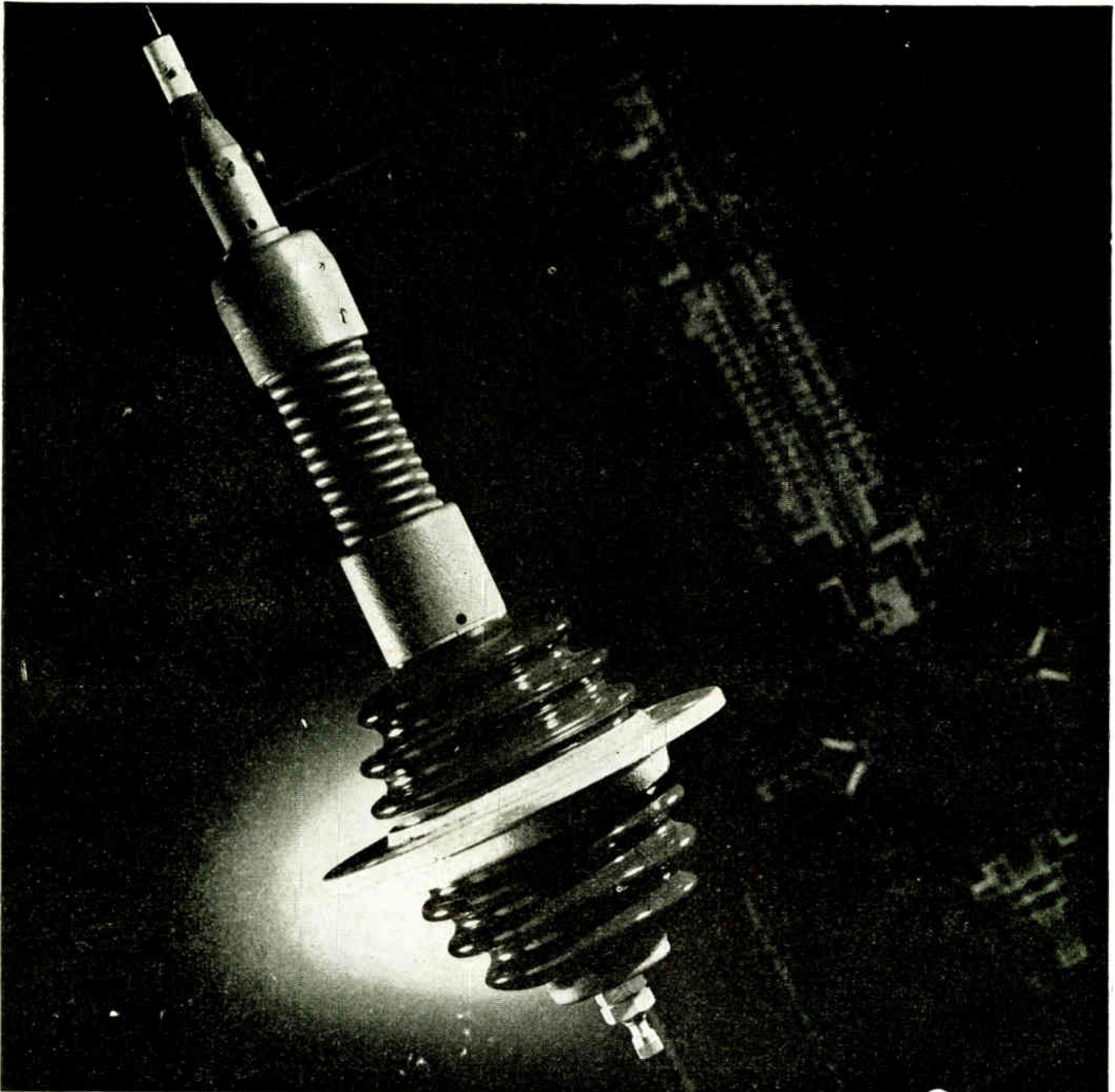
age, compression level, and output level. Inside-out chassis construction gives immediate access to all wiring and circuit components upon removal of the slip-on dust cover. Operate and release times are independently adjustable.

Dimensions, for standard rack mounting, 19" w, 14" h, 9" d. Weight, 45 pounds. Available in metallic gray or black wrinkle.

Collins speech equipment is thoroughly engineered for highest performance. Reliable in operation, accessible in maintenance, each unit meets rigid inspection and tests before it is approved for delivery. For your requirements, write today to the Collins Radio Company, Cedar Rapids, Iowa; 11 West 42nd Street, New York 18, N. Y.

FOR BROADCAST QUALITY, IT'S . . .





LAPP-DESIGNED, LAPP-BUILT—TO DO A SPECIFIC JOB

This is an antenna base insulator for use on a communications center transmitter. It is one of several Lapp designs for transmitter and receiver mast bases for military vehicular radio—on jeeps, halftracks, tanks and other rolling equipment.

Whether or not this special-purpose gadget has application to anything you build or propose to build, there's a moral in it for you. In this case, as in hundreds of others, an original and impractical design was modified by Lapp engineers—to provide a part that meets all electrical and mechanical requirements, and that Lapp can build economically and efficiently.

• Lapp engineering talent and Lapp production methods are such that we can say, "If it's an assembly that can be made of porcelain or steatite and metal parts, tell us what

the requirements are and how you think it might be made; Lapp will tell you how it can best be made—and will make it." Our right to that claim has been proved over and over in military electronic production; it's going to be a competitive advantage to smart post-war electronic producers. *Lapp Insulator Co., Inc., LeRoy, N. Y.*



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A NEW, INEXPENSIVE
Cathode-ray
OSCILLOGRAPH
WITH A 5-inch CATHODE-RAY TUBE

- Ideal for school and college classroom demonstrations!
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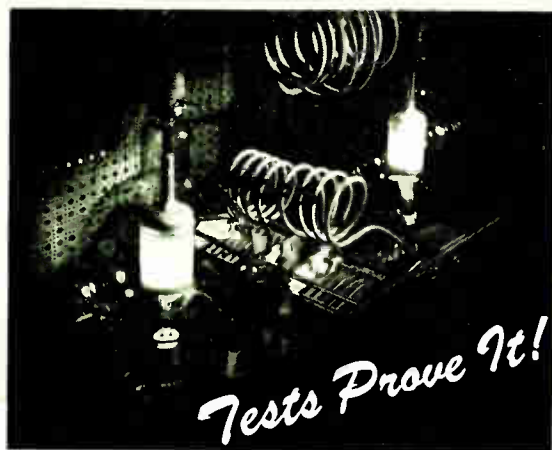


THE COUNTERSIGN OF DEPENDABILITY IN ANY ELECTRONIC EQUIPMENT

Tests Prove 100% Longer Life in this New Eimac 3-750A2

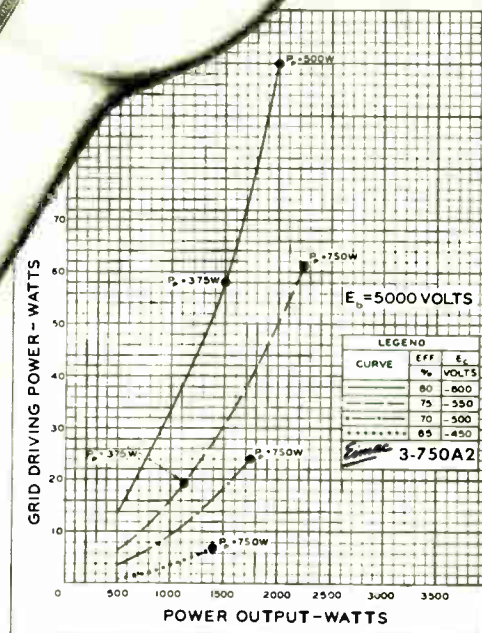
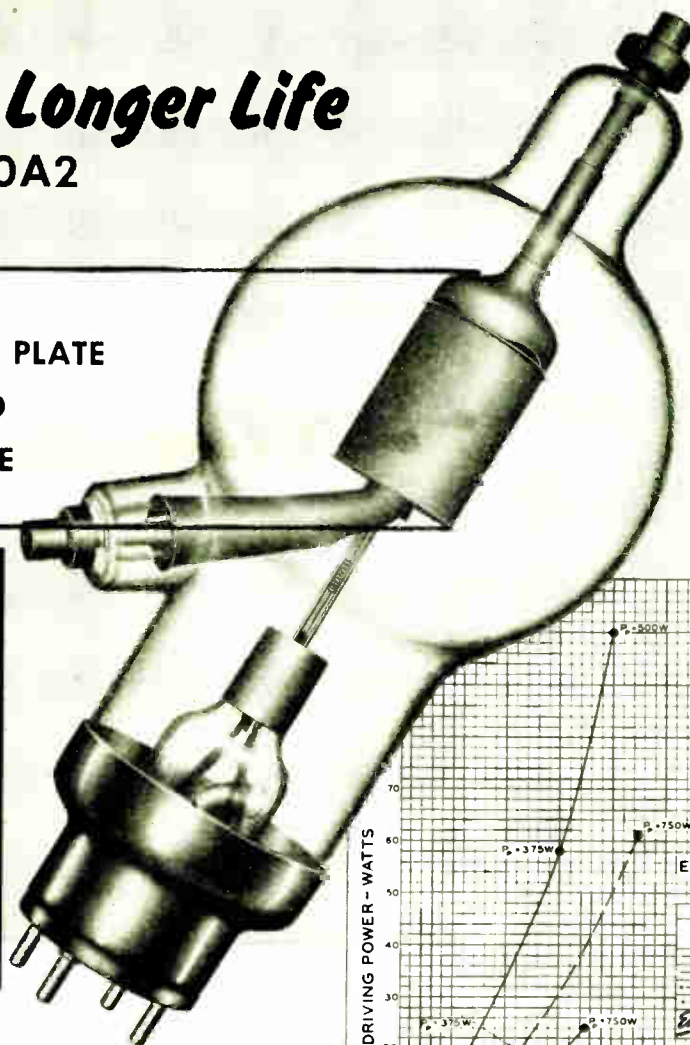
made possible by:

- NEW COOLER OPERATING PLATE
- NEW NON-EMITTING GRID
- NEW FILAMENT STRUCTURE



Tests Prove It!

Two Eimac 3-750A2 Tubes undergoing life tests in the Eimac testing laboratory



Typical of the outstanding performance of this new triode is its high power gain. With 5000 volts on the plate, the new Eimac 3-750A2 will deliver 2000 watts output with only 50 watts driving power, at a plate efficiency of 75%. (See above chart.)

Repeated tests of the new Eimac 3-750A2 in the Eimac testing laboratory show 100% longer life than previous models operated under the same conditions.

This increase in life expectancy is a result of continuing research, culminating in this new version of the 750TL triode. Among its many new features are a new cooler operating plate, new non-emitting grid and a new filament structure.

The new 3-750A2 is a power triode, interchangeable with the previous model 750TL, and is but one example of the constant effort made at Eimac to furnish better tubes at lower cost. For further information and complete engineering data on Eimac tubes, write direct or contact your nearest Eimac representative.

Follow the leaders to



EITEL-McCULLOUGH, INC., 1102 H San Mateo Ave., San Bruno, California

Plant located at: San Bruno, California

Export Agents: Frazer and Hansen, 301 Clay St., San Francisco 11, California, U.S.A.

ELECTRICAL CHARACTERISTICS

Filament: Thoriated tungsten	
Voltage	7.5 volts
Current	21.0 amperes
Amplification Factor (Average)	15
Direct Interelectrode Capacitances (Average)	
Grid-Plate	5.8 uuf
Grid-Filament	8.5 uuf
Plate-Filament	1.2 uuf
Transconductance ($I_b=1.0$ amp., $E_b=5000$, $e_c=-100$)	3500 umhos
Frequency for Maximum Ratings	40 mc

CALL IN AN EIMAC REPRESENTATIVE FOR INFORMATION

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VERNER O. JENSEN CO., 2612 Second Ave., Seattle 1, Washington. Phone: Elliott 6871.

M. B. PATTERSON (W5CI), 1124 Irwin-Keasler Building, Dallas 1, Texas. Phone: Central 5764.

ADOLPH SCHWARTZ (W2CN), 220 Broadway, Room 2210, New York 7, New York. Phone: Courtland 7-0011.

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With the dawn of the new electronic era CENTRALAB again dominates the scene. The "CRL IN THE DIAMOND" identifies a group of QUALITY components engineered to the exacting requirements of the new electronic age . . . always specify CENTRALAB.

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Ceramic Trimmers
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Ceramic High Voltage Capacitors
Bulletin 814



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Capacitors
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Selector Switches
Bulletin 722

INCREMENTAL INDUCTANCE MEASUREMENTS

MODEL 226

1 MILLIHENRY—3000 HENRYS
D.C. SATURATION—0-1000 M.A.
A.C. TEST VOLTAGE .01—
300 VOLT RMS.
 ϕ — .06-200

- MEASURES INCREMENTAL INDUCTANCE
- MEASURES LEAKAGE INDUCTANCE
- DIRECT READING IN HENRYS
- MEASURES ϕ DIRECTLY WITH HAY CIRCUIT
- VISUAL BALANCE

SELF CONTAINED

- D.C. SUPPLY
- A.C. VACUUM TUBE VOLTMETER
- OSCILLOSCOPE

THE MODEL 226 BRIDGE consists of 3 separate units:

1. The D.C. Supply and A.C. Test Voltage Control
2. The Oscilloscope and A.C. Vacuum Tube Voltmeter
3. The Bridge proper—

Any one of these units can be purchased separately.

MODEL 500 INCREMENTAL INDUCTANCE BRIDGE has a

Range—50 MH-1000 H
A.C. Test Voltage 3v-100v
Superimposed D.C. 0-500 MA
 ϕ .—5-200

WRITE FOR BULLETIN "ITC 226"

Detailed information on the above will be sent upon request.
Price and delivery information will be forwarded at the same time.

(Read the Incremental Inductance story appearing in this issue)

INDUSTRIAL TRANSFORMER CORP.

ELECTRONIC DIVISION

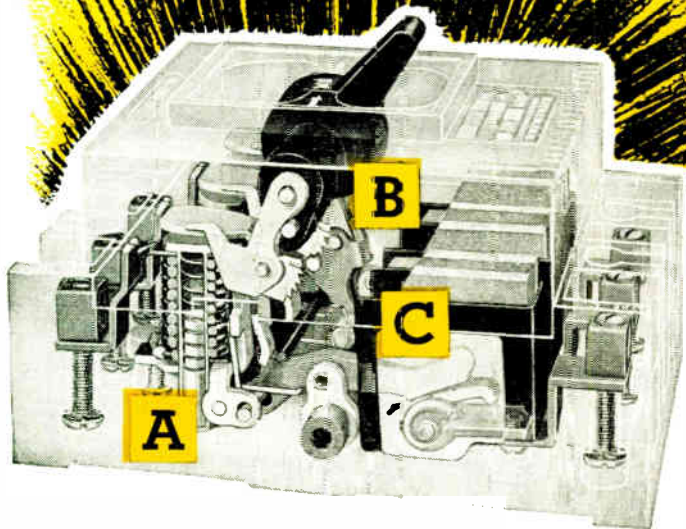
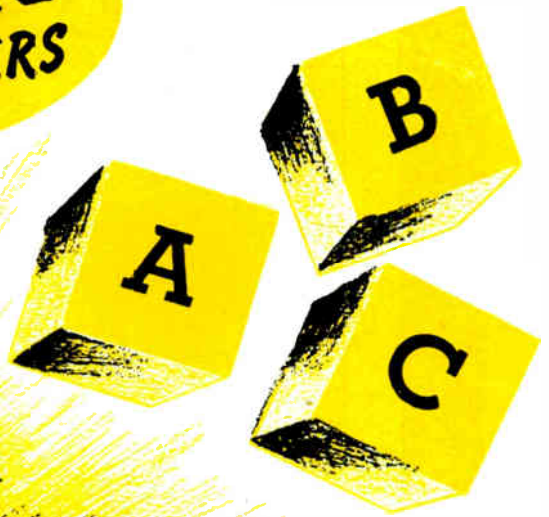
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THREE
BRIDGE CIRCUITS
**HAY-OWEN-
MAXWELL**
ALL IN ONE
INSTRUMENT



HEINEMANN MAGNETIC CIRCUIT BREAKERS

— as simple as —



They are
**ENTIRELY
MAGNETIC**

A MAGNETIC-HYDRAULIC TIME-DELAY

Where specified, HEINEMANN Circuit Breakers have a true inverse time delay in a hermetically sealed unit which allows passage of inrush current. Continued overload, however, opens the breaker in time inverse to the ratio of the current. Breakers are made with time-delays closely matched to customers' specifications.

B HIGH SPEED LATCH

This latch mechanism operates with the least amount of friction and greatest speed of any latch known. It performs two functions, opening the breaker with the least mechanical delay, and opening it independently of handle operation. It functions only under overload or short circuit conditions.

C MAGNETIC HIGH SPEED BLOWOUT

This blowout adds speed to the arc interruption. Individual arcing chambers carefully insulated from each other have magnetic blowout contacts mounted in them. As the value of the current to be interrupted increases, the quenching effect becomes greater, due to the intensified magnetic blowout field.

Send for NEW Catalog Showing Complete Line and Engineering Data . . .

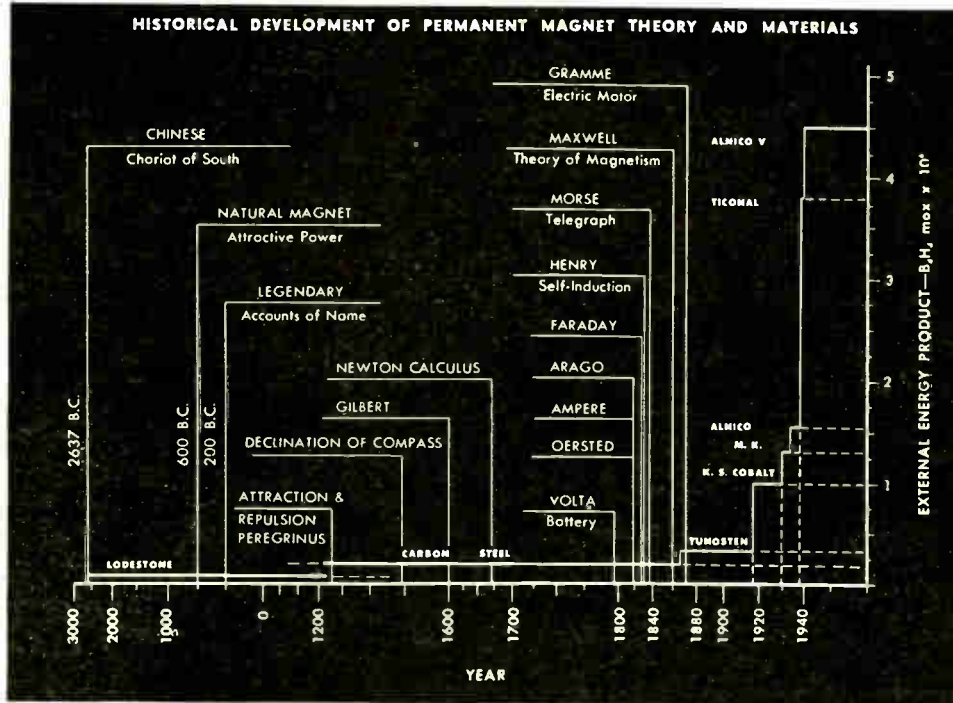
HEINEMANN CIRCUIT BREAKER CO.

Subsidiary of Heineemann Electric Co., Est. 1888

137 PLUM STREET

TRENTON, N. J.

PERMANENT MAGNETS MAY DO IT BETTER.



PERMANENT MAGNETS HAVE SERVED MANKIND SINCE 2700 B. C.

The magnet, one of mankind's oldest servants, has contributed much to the advancement of civilization. Primitive compasses utilizing the lodestone, a crude permanent magnet, were used by the Chinese about 2700 B.C. The term "magnet" is said to have derived from *Magnesia*, a city in Asia Minor where many such lodestones were found.

While the compass using the magnet became a valuable aid to navigation and exploration through the centuries, it was not until the 19th Century that important strides were made in discovering other uses; and only in the last two decades that the powerful alloys were developed from which are made the permanent magnets that serve modern communication, transportation, industry and science in their myriad of diversified uses.

Infinitely more power can now be packaged in smaller, more compact magnet designs with the new high-energy alloy materials—such as Alnico V. More than 24,000 permanent magnet applications have been developed by *The Indiana Steel Products Company*, manufacturers of "Packaged Energy" exclusively for over 35 years. "Packaged Energy" may do some job or process better in your industry. We invite you to consult with our engineers. For data on permanent magnet application, write for "Permanent Magnet Manual," prepared by *The Indiana Steel Products Company*.

Producers of "Packaged Energy"

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★ ★ ★
THE INDIANA STEEL PRODUCTS COMPANY
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6 NORTH MICHIGAN AVENUE, CHICAGO 2, ILLINOIS
 
 SPECIALISTS IN PERMANENT MAGNETS SINCE 1910

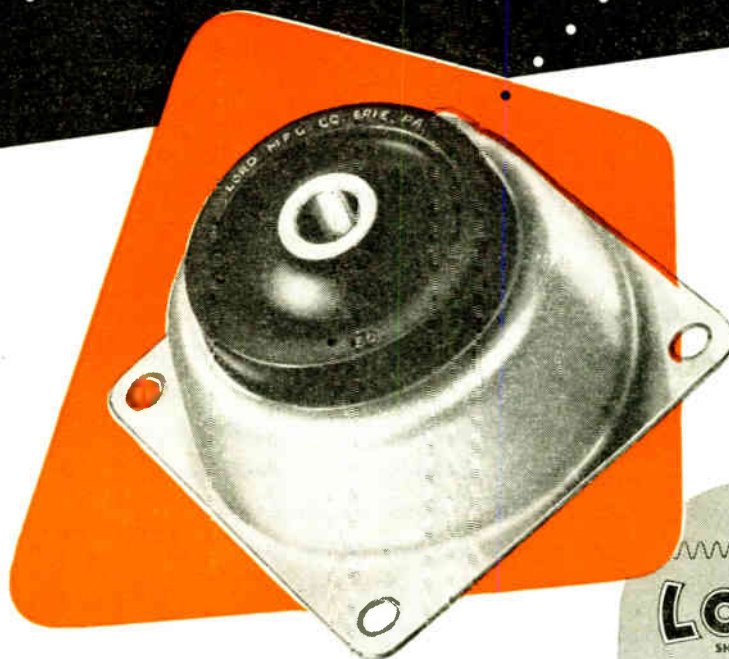
This is what you see



... This is what you get



Every genuine Lord Mounting carries the name "LORD" embossed in the rubber or in raised letters on the forgings.



a flexible mounting which protects your equipment from shock and vibration; increases service life, improves accuracy, permits lighter construction and wider manufacturing tolerances, reduces noise and decreases personnel fatigue. It is compact in design and easy to install.

The picture shows a very simple looking little gadget, made of rubber and metal. It's a typical Lord Bonded Rubber Plate Form Mounting, of which millions are in use. They are produced to accommodate loads ranging from one half to several hundred pounds.

So far as application is concerned, it's just as simple as it looks. But years of study, research and experiment have gone into its construction and design. The development of a rubber to metal bond of great strength, enabled Lord to produce this mounting which utilizes the flexibility of rubber stressed in shear to isolate vibration.

When you come to Lord with your vibration problems, you are getting an answer that represents the last word to date in scientific research and development. Send for Bulletin 104.

★ BUY VICTORY BONDS ★

IT TAKES BONDED RUBBER *In Shear* TO ABSORB VIBRATION

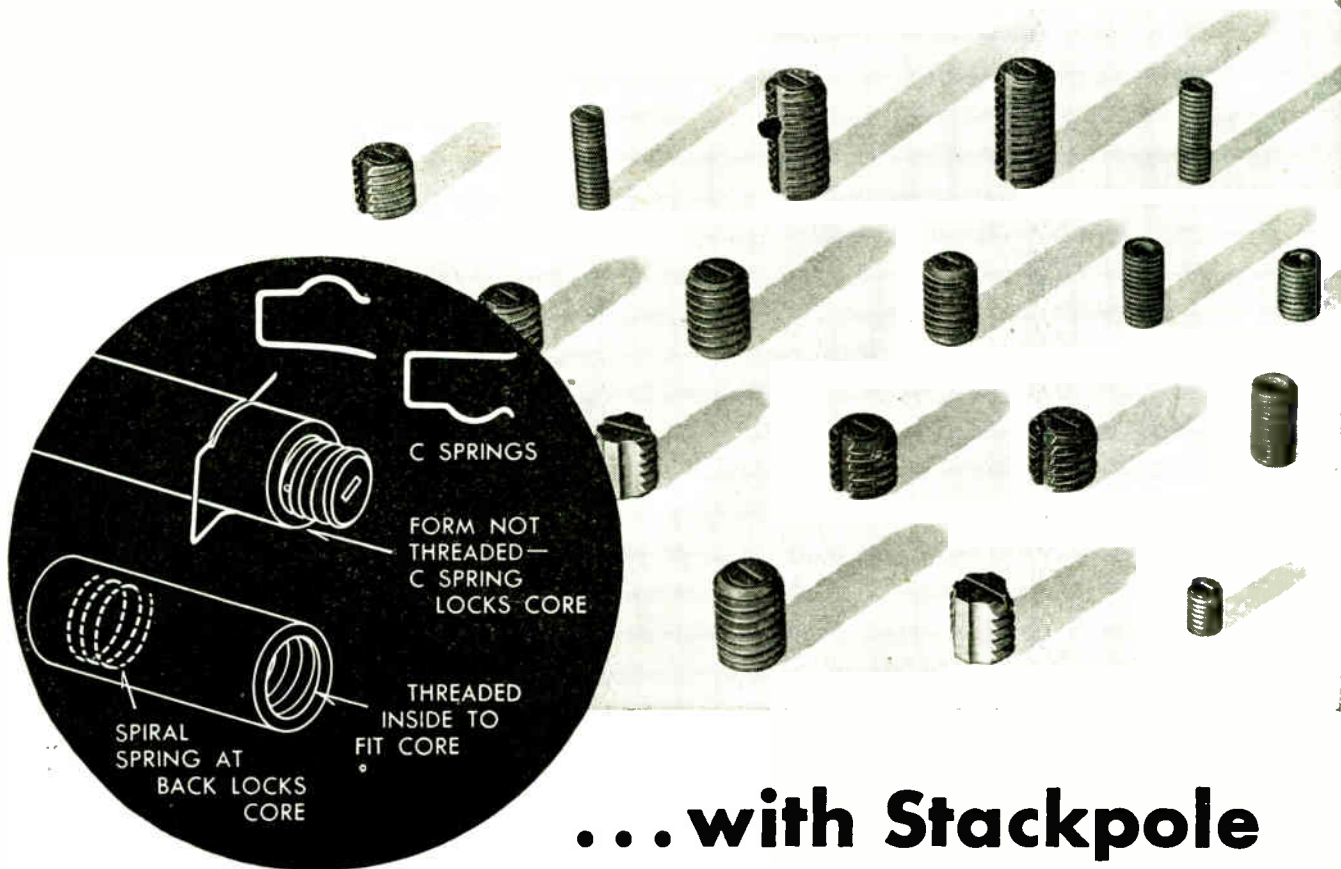
LORD MANUFACTURING COMPANY

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Originators of Shear Type Bonded Rubber Mountings

BETTER "Q"

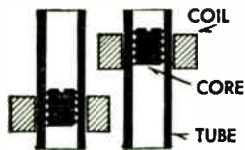


... with Stackpole Screw-type Molded Iron Cores

HIGHER "Q"—Since there is no brass core screw in field of coil and the core is not grounded.

SMALLER ASSEMBLIES—Overall length of coil and screw type core is less than that of conventional core, machine screw and bushing, thus permitting smaller coil assemblies and smaller cans.

FACILITATE DESIGN OF I-F TRANSFORMERS AND DUAL I-F transformers for AM and FM since all cores may be tuned from one end of the I-F transformer can by placing coils side by side.

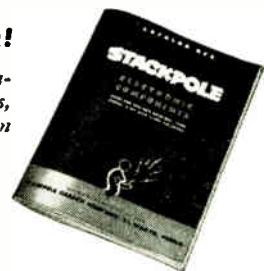


Antenna, R-F and Oscillator coils for each band of a multi-band set become small and compact and may be mounted in groups for each band.

HIGHLY ECONOMICAL—Threaded coil forms unnecessary. See accompanying sketch for suggested use of wire clip in form slot. If desired, the tube can be threaded to fit core as illustrated.

Electronic Components Catalog!

Write for Stackpole Electronic Components Catalog RC6 covering switches, fixed and variable resistors and iron cores.



Samples and Engineering Data gladly sent on request

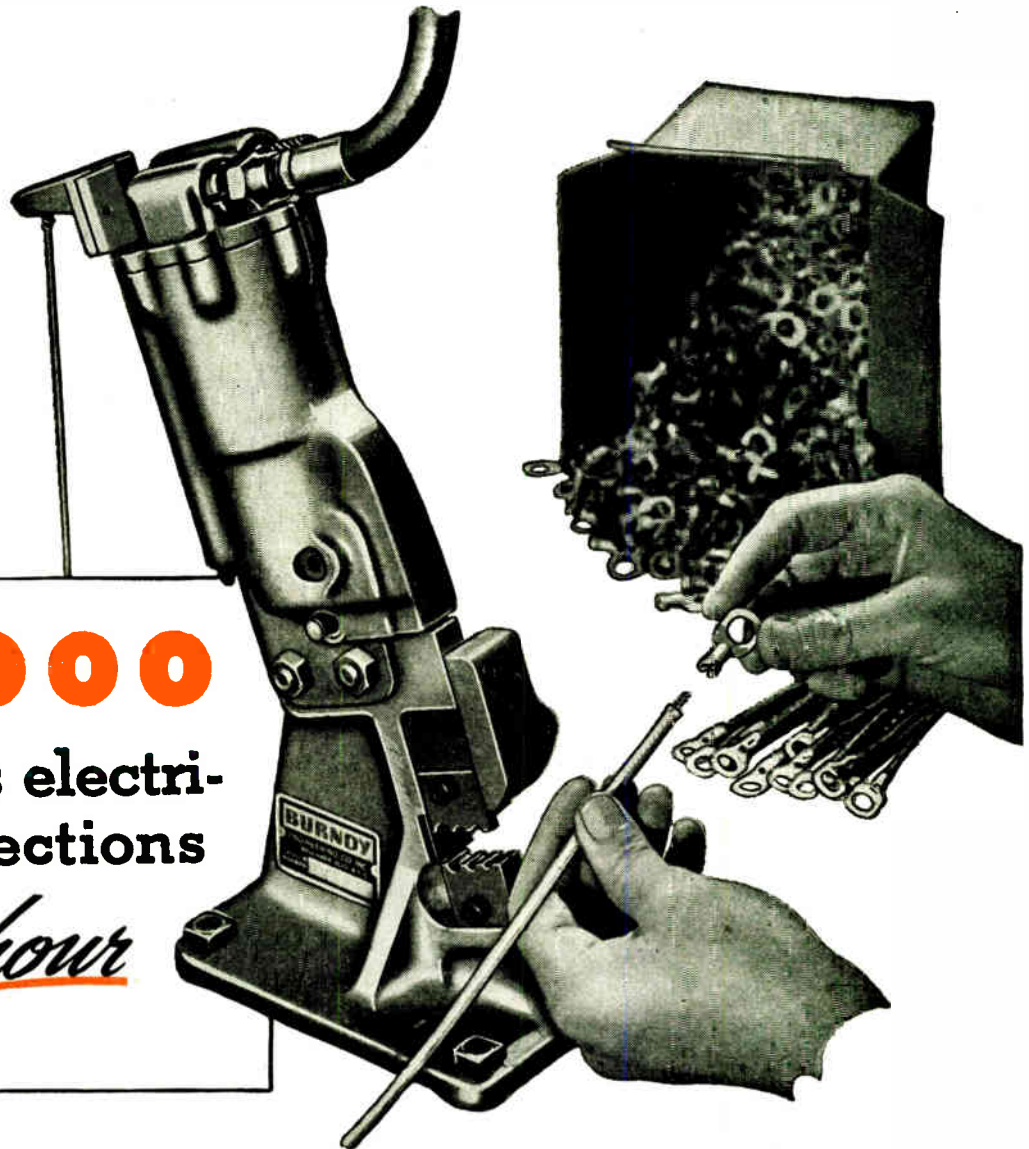
STACKPOLE CARBON COMPANY, St. Marys, Pa.

STACKPOLE

"EVERYTHING IN CARBON BUT DIAMONDS"

up to **1000**
solderless electrical connections

per hour



Burndy **HYPRESS**

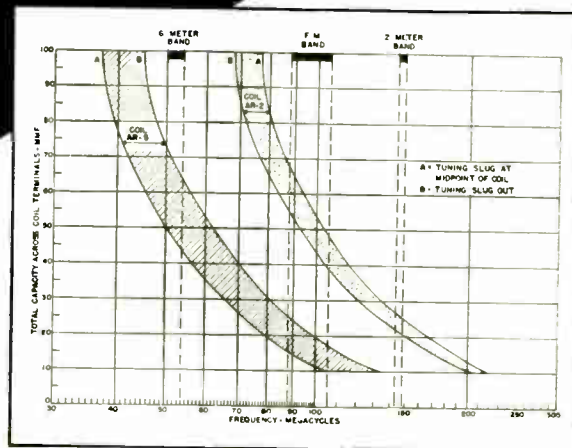
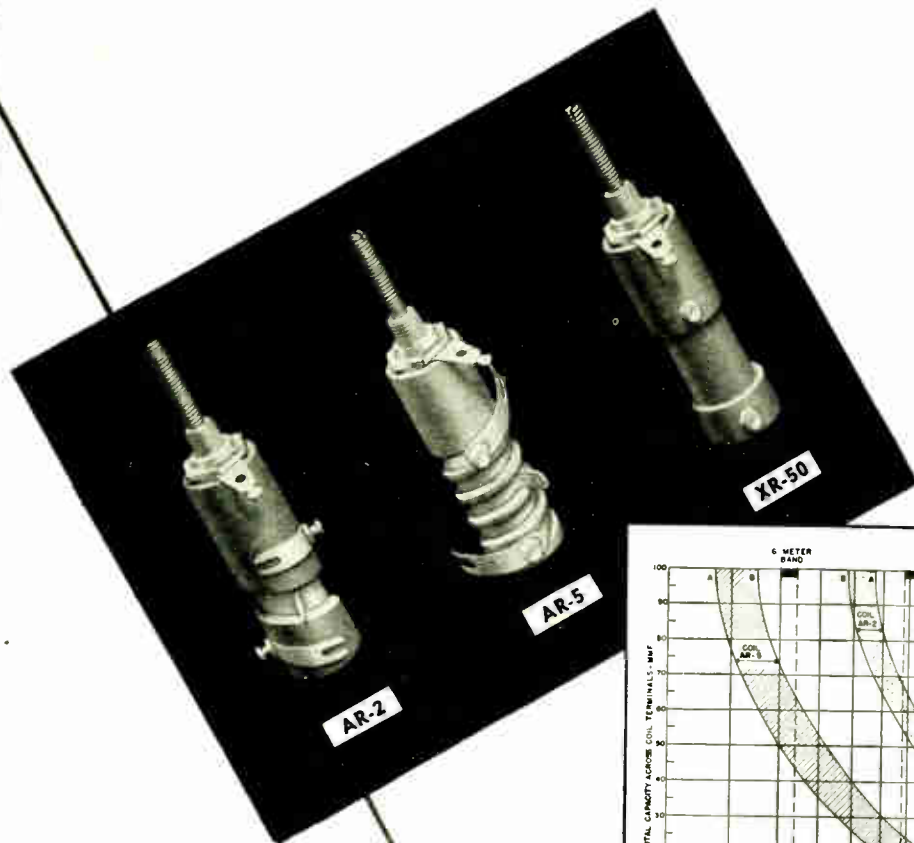
(Pneumatic Foot Operation)



Make your own cost comparison. With this new Burndy No. Y10NCP HYPRESS one operator can attach up to 1000 Burndy HYDENT connectors per hour! *Compare for efficiency too,* remembering that the HYDENT connector is of one-piece pure copper construction, and that each connection is uniform in mechanical strength and electrical efficiency. For complete information write for the HYDENT catalog. Burndy Engineering Co., Inc., 107-K Bruckner Blvd., New York 54, N. Y.

BURNDY ENGINEERING COMPANY, INC.

In Canada: Canadian Line Materials, Ltd., Toronto 13



Here are the postwar high frequency coils amateurs will need for work with the micro-waves. Originally designed to meet Navy requirements, these new high-Q units have adjustable inductance and give fine performance as high frequency oscillators, RF stages or frequency multipliers. Two coils are available covering the range from 37 to 220 Mc. A blank form, Type XR-50, may be wound as desired. All three are small and compact, and all are designed for convenient single-hole mounting.



NATIONAL COMPANY, INC., MALDEN, MASS. U.S.A.



*She may
take a derby,
some day...*

TAKE THIS FILLY. She's a blueprint of a winner. But it's where she pastures . . . who trains her . . . and a hundred incidents that happen before she ever tickles track dirt that decide if she's headed for the 'big money'.

Whether you've a mind for horses, or not, you know it works the same way with your own blueprints. They can be pretty perfect. But the twenty-one or a hundred-and-one components that make up the final product really tell the story.

Here at Cornell-Dubilier we build capacitors. We have devoted much time and money to make our-

selves proficient at the job. If we can't build them better than anyone else, we'd rather not build them for you.

That's the kind of thinking we do at C-D. And today, C-D capacitors are widely imitated, but seldom equaled in quality. For no one else can build into capacitors the years of study, the extensive engineering and design experience that are exclusively C-D's.

Keep that in mind when your plans call for the "unheard of" in capacitor design.

Perhaps our engineers can help you with some special capacitor problem. Cornell-Dubilier Electric Corporation, South Plainfield, New Jersey. Other plants in New Bedford, Providence, Worcester, Brookline.



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CAPACITORS

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*A value range equal to
its frequency range . . .*

. . . A LABORATORY-TYPE SIGNAL GENERATOR FOR SERVICEMEN

We've been designing and producing signal generators for a good many years—each one the best we were able to produce in that year. They have always been pace-setters. Over the years they have become the standard of utility in such instruments for servicemen—distinguished always by that inbuilt Simpson accuracy that stays accurate. Every new model has stepped up the value, dollar for dollar, of the serviceman's investment.

Now this Model 415, with the widest frequency range of them all, tremendously widens the value range as well. Every dollar of its price buys more than a dollar ever bought before, even in a Simpson instrument. We know, for instance, of several

signal generators built for laboratories only, selling at *twice and three times the price* of the Model 415, that will do very little more than this new Simpson Wide Range Signal Generator for AM and FM. And no serviceman's instrument we know of even approaches Model 415 in range, constancy of output, completeness of attenuation and degree of utility. Here is another of Simpson's 1946 developments in instruments for radio and television servicemen, the product of long and rewarding research.

We offer Model 415 in the proud knowledge that it is not likely to see its peer for a long time to come.

1. Direct reading dial with continuous coverage from 70 Kilocycles to 130 Megacycles in the following ranges: 75-200; 200-600; 600-1750 Kilocycles and 1.5-4.5; 4-15; 14-30; 29-65; 58-130 Megacycles.
2. Model 415 is practically independent of line voltage fluctuation. Calibration is stable regardless of wide variations in line voltage.
3. RF output is controlled through its entire range, eliminating the necessity of a separate connection for high uncontrolled output as found in other signal generators.
4. RF output voltage is practically constant throughout the entire frequency range.
5. Modulation from 0 to 100% using either the 400 cycle internal sine wave or an external source. A range from 0 to over 20 volts of 400 cycle sine wave is available for external use.
6. High fidelity modulation up to 100% from below 60 cycles per second to over 10 Kilocycles per second.
7. No unwanted frequency modulation present.
8. Each Signal Generator is individually calibrated against a crystal controlled frequency standard.
9. Substantial construction assures maintenance of calibration accuracy indefinitely.

PANEL—Lustrous black anodized aluminum. Dial is encased in a molded bakelite escutcheon with glass covering for protection against damage and dirt. Functional switches and controls are mounted on engraved molded bakelite panels.

CASE—Steel, copper plated for shielding effect and finished in black durable wrinkled enamel. Leather carrying handle.

SHIELDING—In addition to the overall shielding offered by the case and panel, the coils and tuning condenser are individually shielded, then an additional shield is placed over these two assemblies. This series of shields together with other factors reduce leakage to an absolute minimum.

COILS—Low loss RF coils are individually calibrated by means of variable inductance and variable minimum capacitance. These adjustments provide the means for greatest possible accuracy in calibration.

BAND SELECTOR—The rotating turret coil assembly permits the use of shortest possible wiring, resulting in minimum circuit capacitance and permits quick selection of any frequency range.

CONDENSER—A two section tuning condenser using either one section or the other provides for ideal inductance to capacity ratio on all bands. Smooth vernier tuning permits accurate adjustment of the selected frequency.

Price\$115.00

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SIMPSON ELECTRIC COMPANY
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Simpson
INSTRUMENTS THAT STAY ACCURATE

**NEW SIMPSON
WIDE RANGE
SIGNAL GENERATOR
FOR AM AND FM**



WATCH FOR NEW SIMPSON DEVELOPMENTS... THEY ARE WORTH WAITING FOR

There's a Trip

in this broader ___ brand-new line!

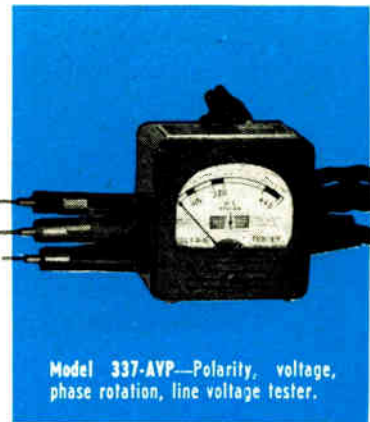
No matter what your requirements, there's a Triplett for you! Every model of this brand-new, broader line features improvements to help you save time and render more accurate service. Included are *all* those elements required for modern servicing—*greater* readability . . . *longer* scale length . . . *larger* instruments . . . *wider* ranges . . . compact cases styled in keeping with modern merchandising, an important quality of each model. *Every* provision has been incorporated to make the new Triplett line the best—*mechanically* and *electrically*—geared to your specific needs. So plan your tests with Triplett in '46!



Model 3212—Counter-type, short-open element, standardized value, tube tester with roll chart.



Model 666H—Pocket size volt-ohm-milliammeter.

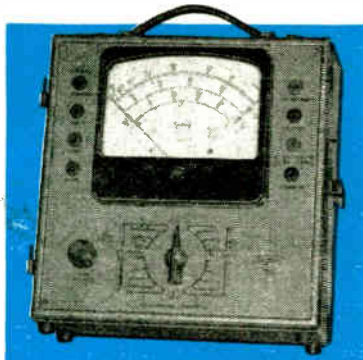


Model 337-AVP—Polarity, voltage, phase rotation, line voltage tester.



Precision first -----

Let's for You.



Model 2405—Ultra-sensitive AC-DC volt-ohm-milliammeter-ammeter.



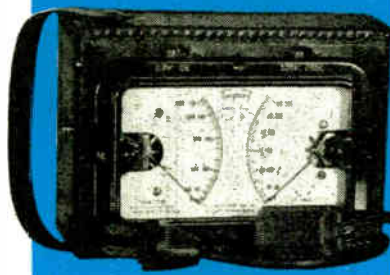
Model 1422—Ten-range, AC, 100 KC-120 MC, signal generator with internal modulation.



Model 2413—Compact, flexible, standardized value, short-open element transconductance comparison tube-tester.



Model 2432—Six-range, AC, 75 KC 50 MC (turret coils) signal generator with internal modulation.



Model 2030—Compact volt-wattmeter appliance-tester, AC.



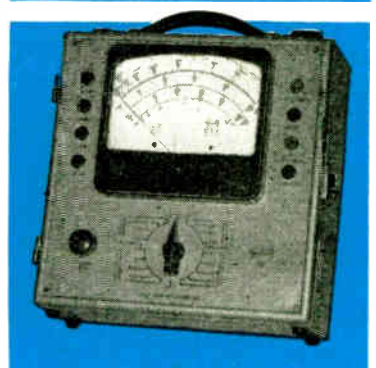
Model 2450—AC-DC electronic volt-ohm-milliamper-microfarad meter.



Model 2425—Transconductance micro-ohm scale tube-tester with gas check.



Model 625N—Portable, ultra-sensitive, multi range volt-ohm-milliammeter.



Model 2400—AC DC volt-ohm-milliamper-ammeter.

...to last...

Triplet

The Triplet Electrical

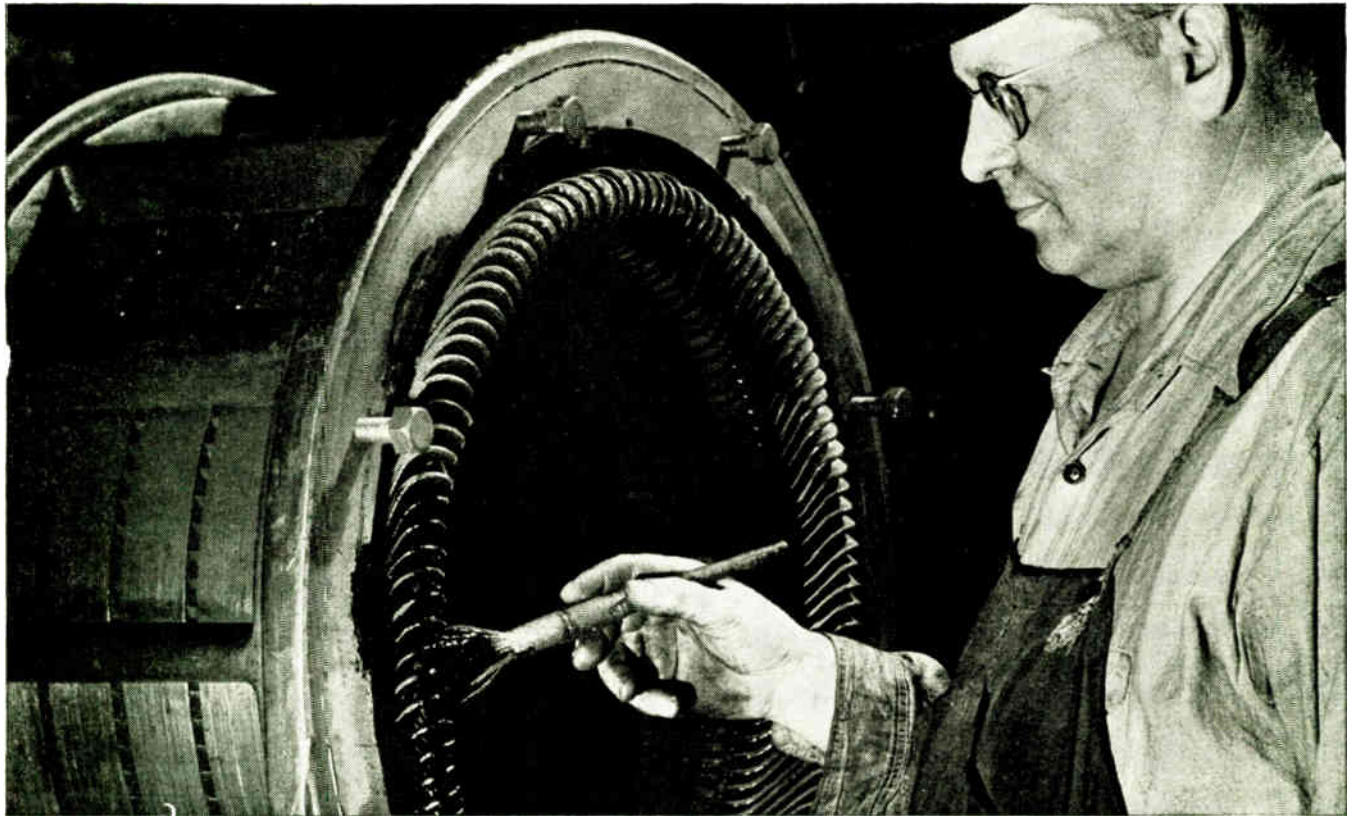
Bluffton



Instrument Company

Ohio

DOLPH'S #27 BLACK INSULATOR



By filling a definite need for a quick-drying finishing varnish, #27 Black Insulator, although comparatively new, has already proven itself in many organizations throughout the electrical industry. The excellent results obtained in its use, plus the many diversified and extraordinary applications on which this material has been utilized, all conclusively prove its merit. The following features are but a few of the reasons why #27 Black Insulator has met with wide-spread approval.

DRYING TIME: Air dries in amazingly short time of 5 to 10 minutes.

ADHESION: Excellent on metal, cambric, glass, asbestos, fibre board, sleeving and pre-varnished surfaces.

TOUGHNESS: Affords a tough, glossy film, which unlike most spirit varnish will not chip nor flake off. This finish provides great resistance to the abrasive action of dust particles.

RESISTANCE: Extremely oil and water resistant, withstanding the corrosive action of salt spray. Provides a high degree of heat resistance.

APPLICATIONS FOR DOLPH'S #27 BLACK INSULATOR

Field Coils	Switch Bases	Controller Shafts
Motor Frames	Solenoid Coils	Finger Blocks
Commutator Ends	Bus Bars	Fuse Tubes
Oil Reservoir Interiors	Collector Rings	Soldered Joints

Insulating **Dolph's** *Varnish Specialists*
JOHN C. DOLPH COMPANY

168 EMMETT STREET • NEWARK 5, N. J.



We're coming in...

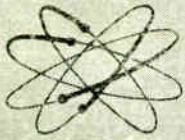
A static has made a lot of "pick-ups" along the line and here we are ... breezing through the azure blue ... headed for the Show ... and you. It's going to be fun ... shaking hands with the old gang again ... and the new-comers, too. We'll be holding forth at the Stevens, where you'll find Astatic Microphones, Phonograph Pickups and Cartridges ... including many new and improved models ... on display. We'll be seein' you!

Hotel Stevens

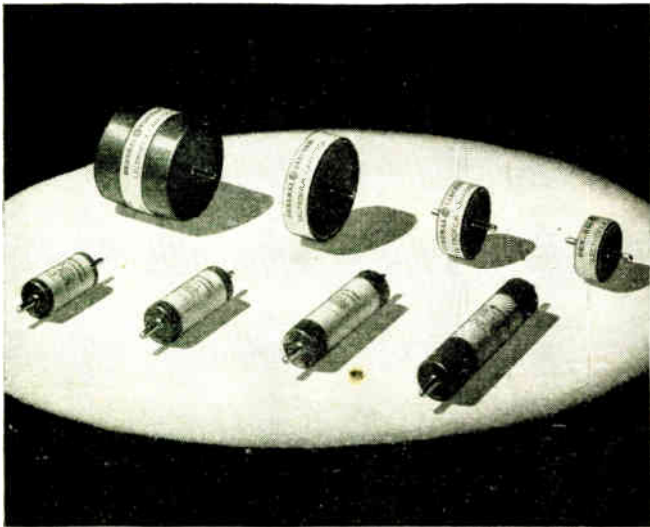
CHICAGO, ILL.
 Headquarters for
 Radio Parts National Trade Show
 May 13, 14, 15 and 16

THE **ASTATIC**
Astatic
CORPORATION
 CONNEAUT, OHIO

In Canada: Canadian Astatic, Ltd. . Toronto, Ont.



Designer's



LECTROFILM *at a glance*

Lectrofilm is the name of a new synthetic-resin dielectric developed by General Electric Laboratories which combines a greater number of desirable mechanical and electrical properties than any other single capacitor dielectric material. It is admirably suited for use in dry-type, high-voltage capacitors because it—

- 1. Withstands high and low ambient temperatures**
- 2. Has low power factor and its power factor decreases as temperature rises**
- 3. Has high dielectric strength and constant**
- 4. Is chemically stable**
- 5. Is strong and flexible**
- 6. Has uniform characteristics**
- 7. Is moisture resistant**

New High-Voltage CAPACITORS for TELEVISION Pulse Rectifiers

To smooth out the rectified high-voltage power supply in television and similar electronic applications, G.E. has developed a new line of small, light-weight, high-voltage capacitors. These new components are specially designed to meet the exacting restrictions in size and weight made necessary by the compact design of modern television receivers.

Currently available in two widely usable designs—flat cylindrical and long cylindrical—these Lectrofilm* units are equipped with prong-type terminals, designed to meet the special mounting requirements of modern television receivers.

Constructed of thoroughly tested and proved materials, these new Lectrofilm capacitors make available to the television engineer the high quality and reliability demanded by today's television applications. Write for Bulletin GEA-4558.

G-E Lectrofilm capacitors, for use in television pulse rectifiers, are now available in the ratings given in the following table. (Other ratings and designs will be available on request.)

RATINGS AND DATA

Capacitance ratings: all sizes .0005 Mu-f. Capacitance tolerance; plus 35 per cent, minus 0 per cent.

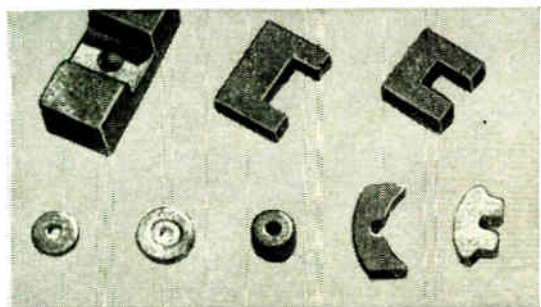
Peak Working Voltage	Cat. No.	Maximum R-F Current (Milliamperes)			Net Wt. in Oz.	Approx. Dimensions in Inches	
		at frequencies of				Diameter	Length (inc. terminals)
		20 Kc.	100 Kc.	300 Kc.			
FLAT CYLINDRICAL UNITS, with Terminals on Axis							
5000	29F201	15	50	150	1/2	1 1/2	1 1/8
7500	29F200	20	75	200	3/4	1 1/2	1 1/8
10,000	29F196	25	100	300	1 1/2	2 1/2	1 1/2
16,000	29F206	30	120	350	4 1/2	2 1/2	3 1/2
LONG CYLINDRICAL UNITS, with Terminals on Axis							
5000	29F203	10	40	100	3/4	1 1/2	2 1/2
7500	29F204	10	40	100	1	1 1/2	3
10,000	29F202	10	40	100	1 1/2	1 1/2	4
16,000	29F205	15	50	125	3	1 1/2	5

* General Electric's new synthetic-resin dielectric

GENERAL ELECTRIC

Digest

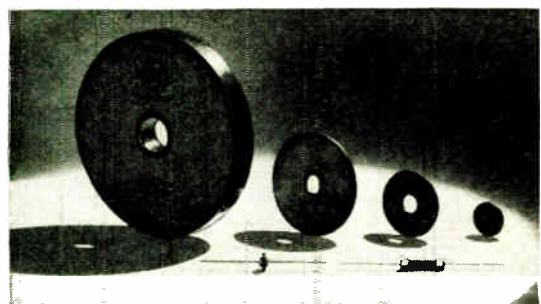
TIMELY HIGHLIGHTS ON G-E COMPONENTS



MORE MAGNET *in less space*

G-E alnico magnets are the answer to many a tough problem in design, where coercive force must be large, and the magnet small.

They are formed by the cast as well as the sintered process which makes possible rapid, large-scale, close-tolerance manufacture of both complex and simple shapes. Compact, with uniform flux distribution and great stability, these mighty midgets facilitate the design of small devices of high precision. Write for Bulletin GEA-3682A.



EVER NEED *a non-linear resistance?*

Frequently, electronic designers need a non-linear resistance to protect against voltage surges, to stabilize power voltages or to control voltage-selective circuits. In Thyrite*, General Electric's silicon-carbide resistance material, current varies as a power of the applied voltage. That is, I varies as E^n .

For example, with a Thyrite resistor whose exponent is 4, doubling the voltage multiplies the current by 2^4 or 16, whereas doubling the voltage applied to a wire-wound resistor merely doubles the current.

Thyrite resistors are supplied in discs or rods, in diameters from 0.25 in. to 6.0 in. Write for Bulletin GEA-4138A.

* Trade-mark Reg. U. S. Pat. Off.

TIGHT, FAST JOINTS

begin with the soldering iron

With the new line of G-E soldering irons, operators can solder just as fast as the nature of the job permits. Tips stay hot during constant use. The Carrod heating element close to the tip gives a short, low-loss heat path to the work.

Sturdy construction prevents work interruptions due to iron failure. Repairs are infrequent, even under severe conditions. Available in five sizes and types, from 75 to 300 watts, 115 volt or 230 volt. Write for Bulletin GEA-4519.



A LOT OF INSTRUMENT

in a little space

These thin, internal-pivot panel instruments have high torque, good damping, and a lightweight moving element that withstands vibration. They respond rapidly and accurately. They give you more instrument in less space, because the internal-pivot construction makes the entire element assembly 20 per cent thinner than most outside-pivoted types. Ask for details of the Type DW voltmeter or ammeter—milli, micro, or radio frequency. Bulletin GEA-4064.



REMOTE CONTROLS *that stay in step*

G-E selsyns *stay* synchronized; that is why they are so widely used for remote control and indication applications with single and multiple receivers.

Three sizes of high-accuracy selsyns give operation to within plus or minus 1 degree. Where plus or minus 5 degrees is close enough, use lower cost general-purpose selsyns.

Accuracy values are for 60 cycle, 110 volt operation. Write for Bulletin GEA-2176A.



General Electric Company, Sec. 642-11
Apparatus Dept., Schenectady 5, N. Y.

Please send me

- GEA-4558 (Lectrofilm capacitors)
- GEA-3682A (Sintered alnico magnets)
- GEA-4064 (Panel Instruments)
- GEA-4138A (Thyrite)
- GEA-4519 (Soldering irons)
- GEA-2176A (Selsyns)

NOTE: more data available in Sweets' File for Product Designers

Name

Company

Address

City State



Capacitor

Quality...

To Solar, "CQ" means *Capacitor Quality* because Solar lives up to its by-word, "Quality Above All."

That's the whole Solar story in one sentence.

We could show pictures of departments in our up-to-the-minute plants, depicting the modern machines and skilled workers who build outstanding quality into each Solar capacitor that comes off the lines. Or photos of our laboratories where tests insure that every Solar capacitor will live up to Solar's "Quality Above All" standards.

We could quote unsolicited letters of praise from hundreds of manufacturers who've used Solar "Quality Above All" capacitors . . . letters which verify Solar's claim to the most dependable line of capacitors on the market!

We could say all this, but Solar capacitor performance speaks for itself—proves "Quality Above All" is more than just a phrase.

SOLAR MANUFACTURING CORPORATION
285 Madison Avenue • New York 17, New York



ELECTROLYTIC, PAPER AND MICA CAPACITORS FOR THE ELECTRONIC INDUSTRY

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Including INDUSTRIAL ELECTRONICS

O. H. CALDWELL, EDITOR ★ M. CLEMENTS, PUBLISHER ★ 480 LEXINGTON AVE., NEW YORK (17), N. Y.

Electronic Markets

Thorough-going engineers do not always take kindly to the commercial aspects of their profession. Preferring to steep themselves in purely technical matters, the younger men, particularly decry business inroads on their attention and thinking. Marketing, they complain, is bothersome business, of no concern to specialists in engineering techniques and theory.

More mature engineers, however, recognize that commercial subjects eventually parallel technical matters in the development of any personal career.

Markets Underlie All

For no engineer's job or paycheck is secure unless there is a market for his services and for the output of his firm. Markets and sales form the foundation for practically all engineering activities.

That is why this Electronic Marketing issue of Electronic Industries can be of prime usefulness to every reader, however erudite. New markets point the way to new engineering opportunities. Expanding markets are necessary to stabilize existing engineering operations.

The Pioneer Spirit

Radio men from the beginning have been pioneers. Always the spirit of radio has been to replace existing methods with something better. In this adventuring mood the radio industry has continuously produced new ideas—and a wake of obsolescence.

But now that radio has gotten rich in dollars, care must be taken lest we become conservative and fearful of new exploits. The youths who pioneered so much for radio in the 1920's are now passing middle age, prosperous beyond their early dreams. With bulging midriffs (both abdominal and mental) they now too often think of conserving and holding—rather than hazarding and exploring further into radio's vast new possibilities.

Radio's boundaries are still endless. Some of the old

pioneers are still leading in the new adventuring of '46 and '47. But the whole industry needs to keep on pioneering. Radio and the world will lose much if the pioneer spirit is ever abandoned by those once-adventurers who can now afford the ease of prosperity!

Local Co-operation Between Engineers

More U. S. cities are now laying plans for close co-operation between local sections of the principal national engineering societies. Advantages of the plan are joint meeting notices, an established central office and meeting place, and better understanding by each group of engineers of the other groups. The mechanics of such hometown co-operation can be handled without sacrificing the independence of the individual sections.

Electronic engineers have most to gain from such local co-operation. For electronic applications now permeate all engineering. And the electronic men in any community should be well acquainted with all their fellow-citizens who are solving problems of any kind on the broad front of engineering.

Radio on the Highways

One of the companies which is very active in the point-to-point communication field tells us that automobile fleets of all kinds are enthusiastic about radio control routing. This is being adapted not only to taxicabs but also to public utility fleets and others who find constant communication an extraordinary advantage. Costs are about \$1,000 for a sending station and a few hundred dollars for equipping individual cars. This looks like the beginning of a big new industry.

In this connection a number of leading engineers have been down in Washington helping the Federal Communications Commission get a workable allocation scheme for the 160 mc point-to-point communication band. The 40-kc cleared channels originally provided for in this band are not sufficiently wide and it is found that only alternate channels can be used.

Electronic Marketing Features in this Issue—

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Broadcast Stations, AM, FM and TV, with Chief Engineers	39		

TELE-GUIDED MISSILES

Remote control of bombs made possible by development of midget television transmitter carried by the bomb itself

• For the accurate control of missiles in flight, successful guidance to the most effective location long has been obtained only by the control of elevation, direction and speed, as based on information available at the time the missile was launched. The more accurate this information is, the more effective is destruction by the missiles. All guiding information must be collected, considered and utilized before the projectile leaves the control of the operator, and no correction because of circumstances encountered during flight can be made after it is launched. Subsequent action of the target can be anticipated (if it is visible or if it is within the operating range of Radar) and utilized only if radio controlled guidance is available.

It has long been the dream of members of the ordnance department to provide some sort of gadget that would transmit back to the operator information encountered by the missile during flight, so that he could make efficient use of the methods of radio control which have long been known. In order to utilize the advantages of radio control, it is necessary that the operator keep informed both as to the conditions at the target and those at the missile itself.

Inasmuch as the life of a human operator was never considered expendable here as it was, for example, in the case of the one-man operated torpedoes of the Japanese, much thought has been given to the possibility of having the missile send back useful information to the control operator. As a result, many successful remote controlled bombs incorporating complete television camera equipment of a "midget" type have been developed, tested and found of value.

Many types of missiles were considered in this remote-control project and before the recent end of fighting, a great deal of practical experience was gained in television-equipped units ranging from glider bombs (bombs equipped with small lifting wings) to complete television-equipped unmanned planes. These units contain all the neces-

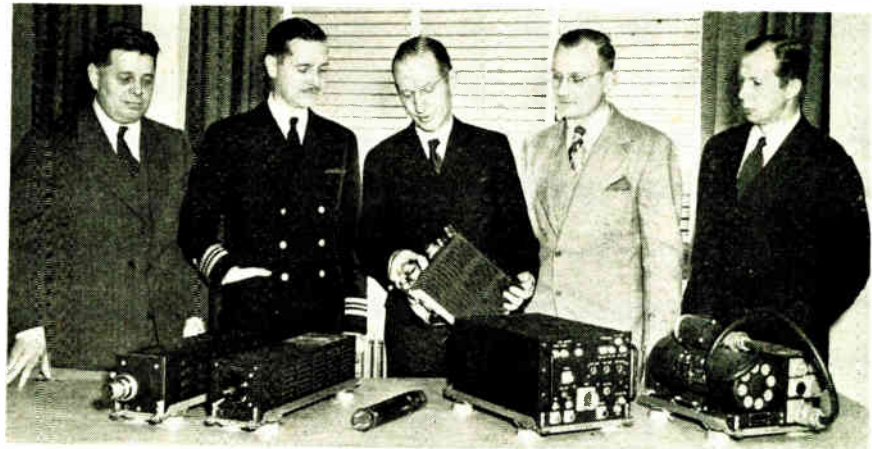


Fig. 1—Left to right, these Remington-Rand ordnance television experts are: Vacuum tube section chief engineer M. P. Wilder; Electronics division chief engineer James J. Lamb; Equipment section chief engineer J. A. Brustman; special projects engineer P. S. Rand. USNR officer is Com. T. W. Chew. Lamb holds "small package" camera auxiliary unit, other equipment being interchangeable image Vericon and standard Vericon cameras, the 780-900 mc transmitter and regulated supply

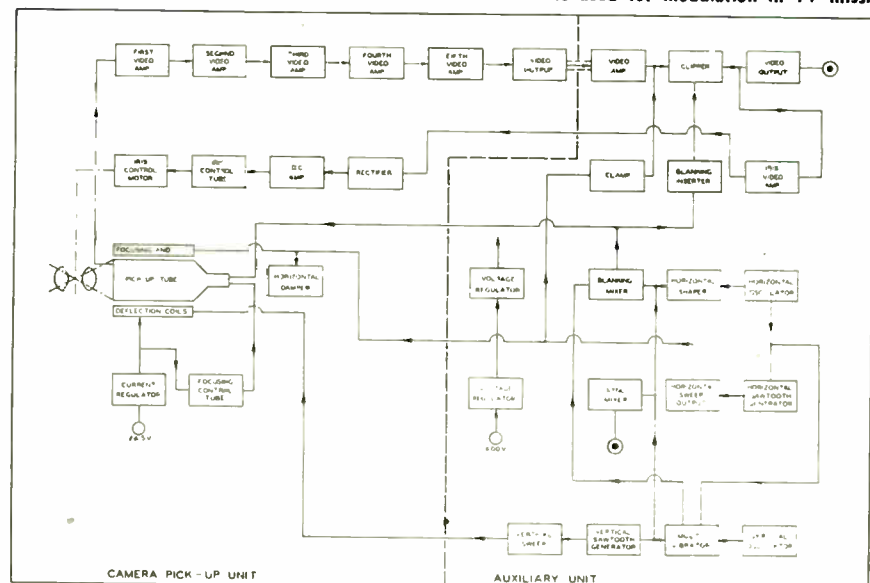
sary equipment for looking ahead along the line of travel, picking up the scene with a special camera pick-up tube and transmitting the picture back in ordinary television style to the control operator at a land base or on a plane.

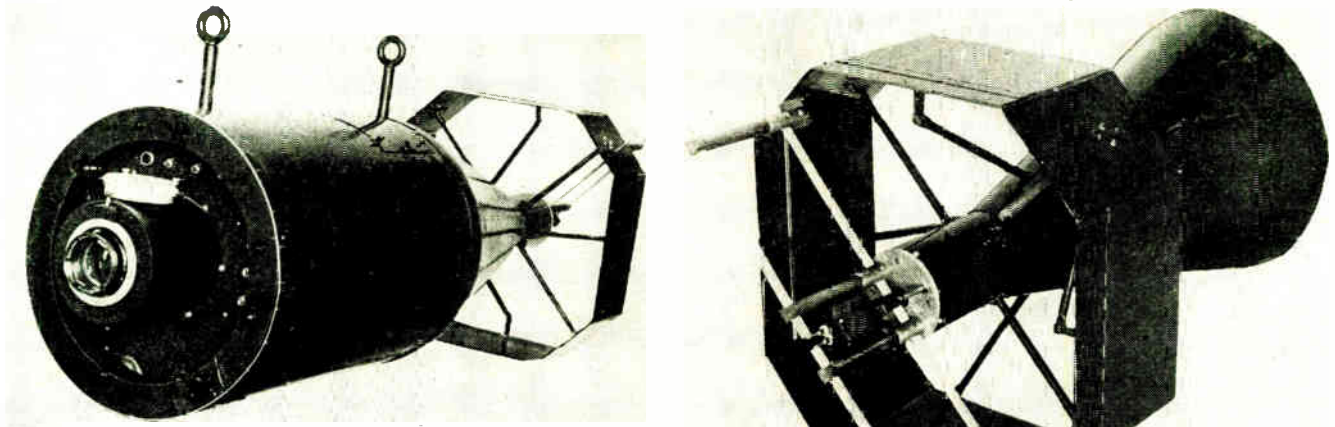
A description of the lightweight "eye" that was developed from this intensive research by the Electronic Division of Remington-Rand (Middletown, Conn.) will show the progress made on the problem which will have a bearing on not only

commercial uses of television, but on industrial uses as well. Here the camera head and its associated control unit form a complete television picture pick-up system designed to deliver video, blanking, and synchronizing signals of the proper amplitudes and characteristics to modulate a radio-frequency transmitter. The units associated with these small "package" television systems are shown in Fig. 1.

A block diagram of the two units, showing the various circuit func-

Fig. 2—Basic arrangement of camera unit and control circuits used for modulation in TV missiles





Above, 1000-lb. high angle television bomb using camera-transmitter unit developed by Farnsworth, plastic nose removed to show camera eye. Right, tail assembly showing deflecting ailerons, remote controlled through pulses received from plane in which operator observes picture transmitter from bomb and governs its course

tions, is given in Fig. 2. In general, each block shown here involves the use of one set of vacuum-tube elements, although double-triode tubes are used wherever possible.

Vertical scanning of the pick-up tube mosaic is at the rate of 40 per second and horizontal scanning at the rate of 14,000 per second, giving a 40-frame, nominal 350-line picture. The actual number of lines in the picture is between 325 and 330, the remaining lines being cut off during the vertical blanking period. Resolution in the horizontal direction is at least 300 lines in the center area of the picture, and at least 250 lines in the corners. A system of this type must operate

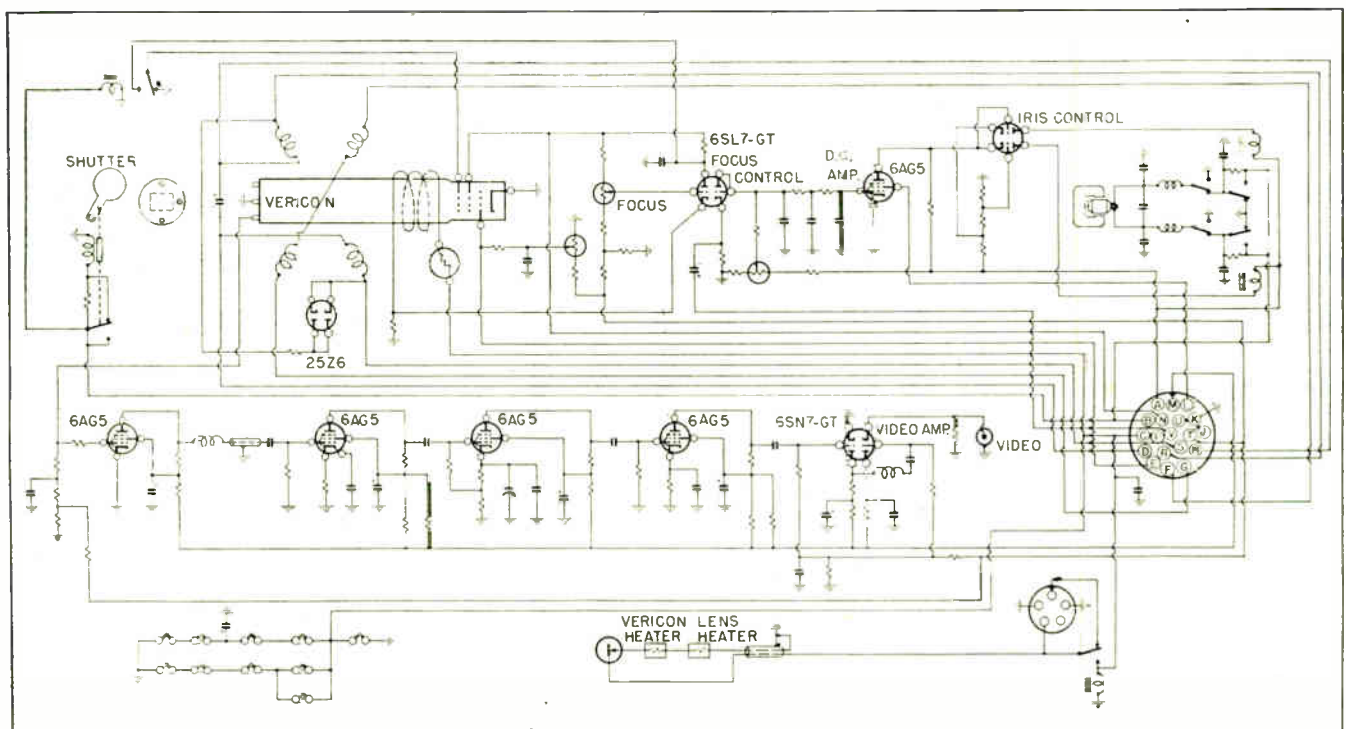
unattended. Therefore, many unusual and automatic circuits had to be developed to make this possible.

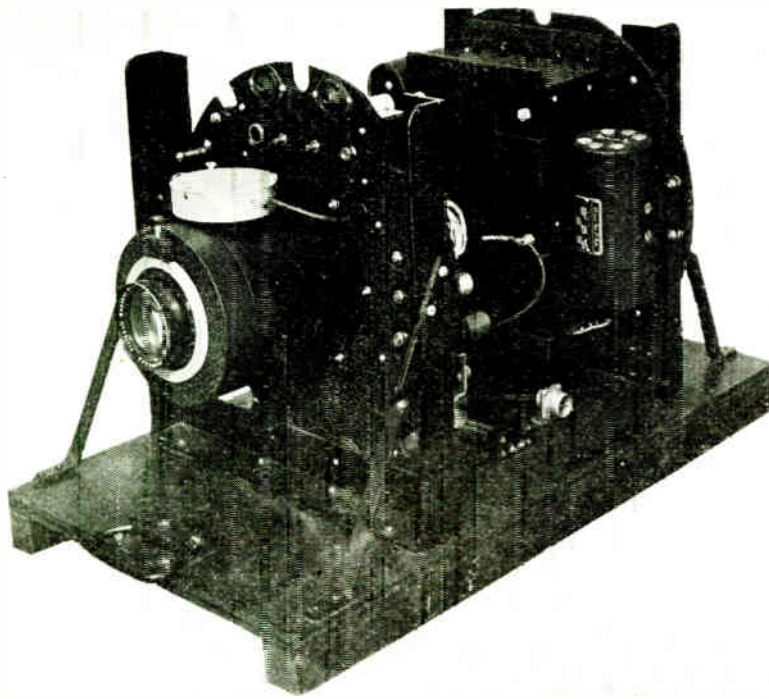
A functional drawing of the pick-up tube, a "Vericon" and its associated focusing and deflecting equipment is given in Fig. 3A. The tube is of the low-velocity scanning beam type, consisting essentially of a cylindrical glass envelope with an electron gun at one end and a photo-sensitive signal plate assembly at the other as in Fig. 4. The signal-plate assembly consists of a thin sheet of clear mica coated on one side with a transparent but continuous film of metal (the signal plate) and on the other side by

the photo-sensitive mosaic. The mosaic is 0.825 by 1.1 in., the entire area being occupied by microscopic photo-emissive dots or "islands," each insulated from the others by the mica support. Each small area is a conductive surface and together with the metallic coating on the opposite side of the mica sheet forms a tiny capacitor.

Each of these capacitors, of which there are millions, becomes electrically charged by the action of light, by reason of the emission of photo-electrons when light strikes the islands. The signal-plate assembly is mounted with the continuous metal film facing the end of the tube. This film is thin

Fig. 3—Schematic of Vericon pickup tube and associated circuits. In another type of pickup camera the more sensitive Image Vericon tube is used





Complete assembly of the Farnsworth camera-transmitter unit for tests of 1000-lb. high angle television controlled bomb

enough so that it is essentially transparent. The image of the scene to be televised is focused on the mosaic by the optical lens system through the end of the tube,

the metal film, and the mica sheet. The electron gun is essentially the same as in any cathode ray tube. The control grid G_1 , a metal disc with a small hole at its cen-

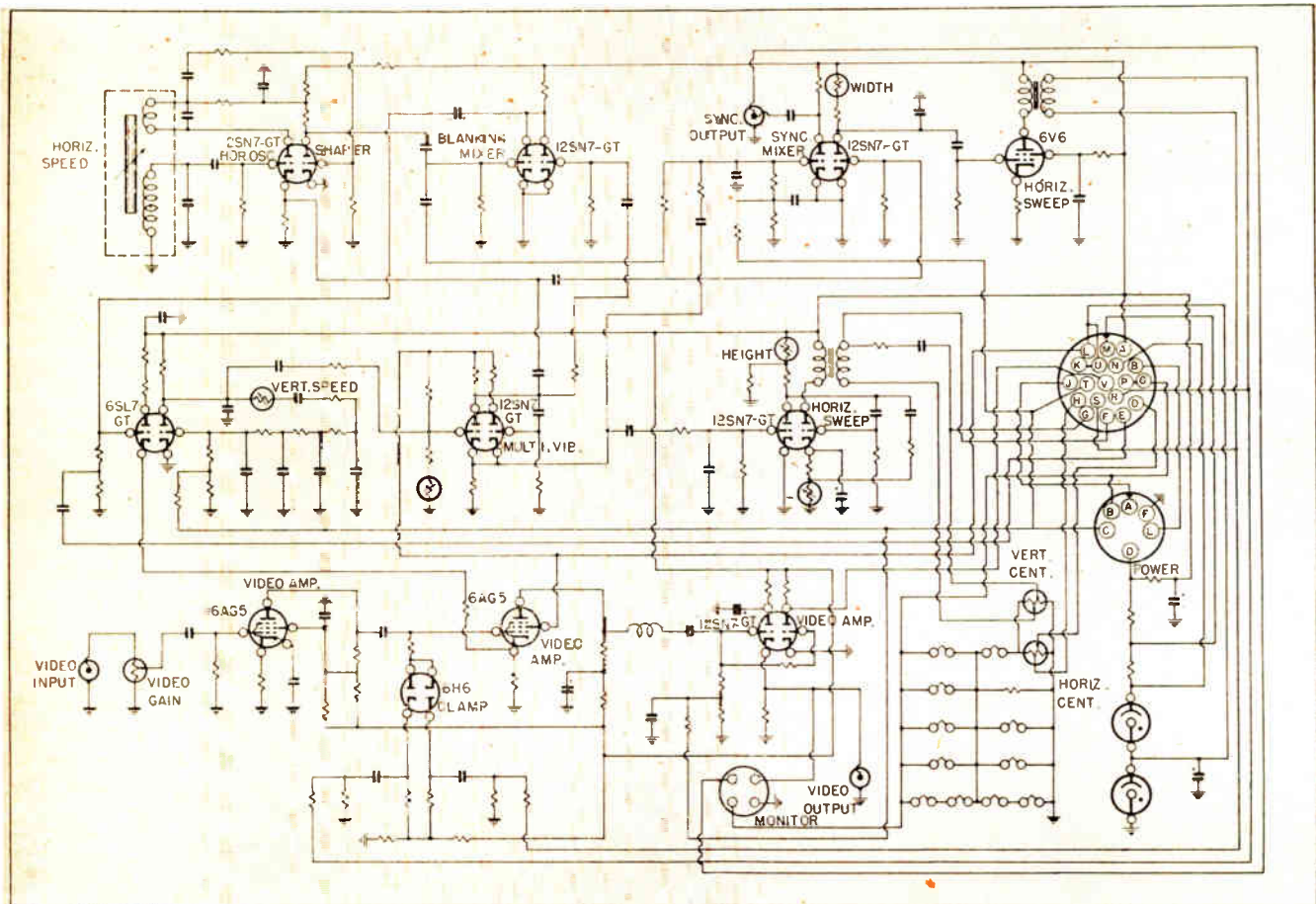
ter, is operated with a negative bias. The scanning beam is formed from electrons emitted by the cathode that pass through the hole in the grid.

The electron beam is accelerated by the second grid (G_2), which is operated at approximately 250 volts positive with respect to the cathode. The G_2 electrode resembles G_1 in that it is a metal disc having a center hole, but the hole in the G_2 electrode is made much smaller—approximately 0.002 in. square—in order to confine the beam diameter.

The pick-up tube is mounted concentrically in a multi-turn coil which, when supplied with direct current from the primary power source, sets up a uniform magnetic field directed along the axis of the tube. By proper adjustment of the current in the coil and the voltage on the anode the beam can be brought to focus at the surface of the mosaic.

It is the function of the electron beam to discharge the small charges appearing on the elements on the mosaic that result from light falling on them. If the beam were allowed to travel to the mosaic at the velocity given it by the electron gun, the impact of the elec-

Fig. 6—Scanning circuits and video control circuits of Remington-Rand equipment. Separate synchronizing and video modulation signals feed to the transmitter, the former plate-modulating the transmitter and the video signal modulating the grid



trons on the mosaic would, however, knock out secondary electrons in the ratio of several secondaries for each impinging primary electron. These secondary electrons in the region of the mosaic would cause a space charge distribution which would result in spurious signals, giving rise to "shading" difficulties.

To prevent this, a ring-shaped metallic electrode is plated on the inner wall of the envelope near the mosaic. This electrode is operated at cathode potential and is therefore negative with respect to the anode by the amount of the anode voltage. Thus the beam must pass through a retarding field. The retardation is such that the beam approaches the mosaic at substantially zero velocity, with the result that secondary emission is negligible and the tube is free from spurious signals.

The electron beam is deflected horizontally and vertically by magnetic fields set up by currents flowing in deflection coils mounted between the tube and the focusing coil. The fields of these deflection coils are at right angles to each other and to the focusing field, so that the resultant field, when currents are flowing in all three circuits, directs the beam to a spot on the mosaic determined by the resultant field strength.

As a result of the electron emission, each elementary capacitor of the mosaic acquires a charge, the quantity of which is proportional to the impinging light.

The mosaic elements continue to charge until discharged by the scanning beam (once each 1/40th second). As the scanning beam moves across the mosaic it restores the missing electrons to each charged element, the positive charge on the mosaic element being sufficient to attract the necessary number of electrons from the beam. However, since the beam velocity at the mosaic is zero, without such attraction more than the proper number of electrons cannot be deposited on the island. The movement of the excess electrons in the beam reverses and they go back down the tube, where they are collected.

The video output is pulsating current as the elemental mosaic islands are discharged in turn. Flowing through the load resistor, it develops a signal voltage. The subsequent handling of this signal is shown in the circuit diagrams Figs. 3 and 6.

In view of the small area of the

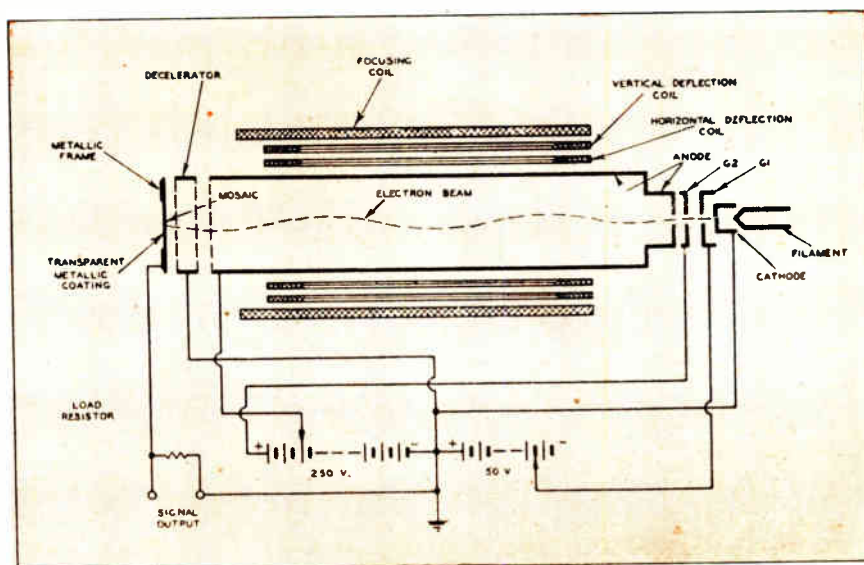


Fig. 3A—Schematic of pickup tube and associated circuits

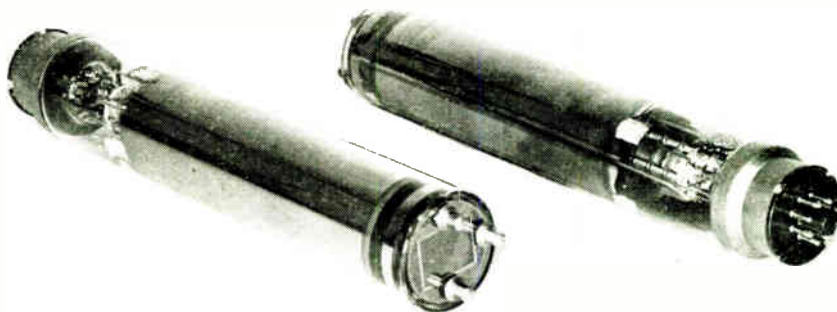


Fig. 4—Two views of the standard Vericon tube used in guided missile cameras

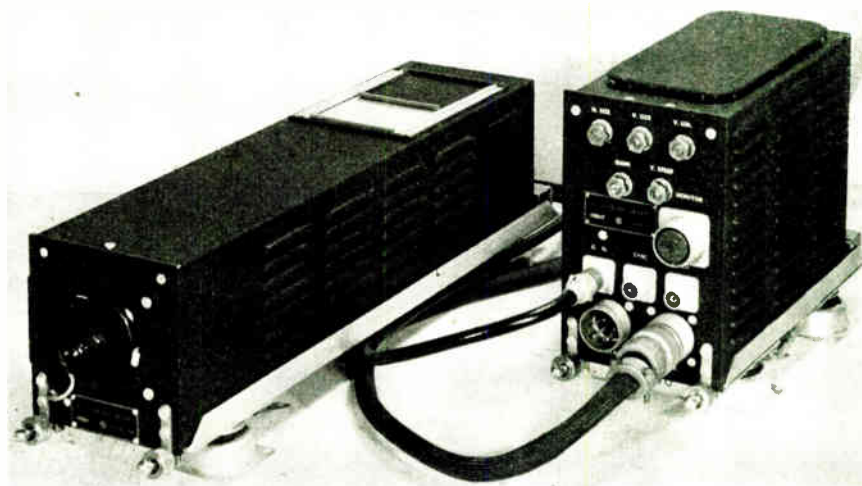


Fig. 8—All units of the system are shock mounted to reduce vibration modulation. Controls on the pickup camera are reached through a sliding panel. At right is the auxiliary control unit of the AN/AXT-6 airborne television unit

mosaic it is necessary that an extremely sharp focus be maintained. If for some reason either the focusing coil current or the anode voltage (or both) change, the sharpness of the focus may be adversely affected. Both coil current and anode voltage depend upon the primary supply voltage, which can be expected to vary during operation.

Focus also will be dependent upon temperature, since the resistance of the focusing coil will change with temperature and the current through the coil consequently will change, even though the primary supply voltage is constant.

To overcome these effects in so far as possible, the anode supply

(Continued on page 114)



PANEL ON FM OPERATING TECHNICIS—J. A. Waldschmitt, (WOR); Paul Dillon (WMIT); Phillip B. Laeser (WTMJ); Carl Wesser; D. C. Ports (Jansky & Bailey)



ROUND TABLE SYMPOSIUM EXPERTS—D. W. Gellerup (WTMJ); Howard S. Frazier (NAB); Dr. John A. Willoughby (FCC); E. W. Allen, Jr. (FCC); R. Morris Pierce (WGAR)

ENGINEERS STUDY FM

Nearly 400 broadcasting technicians gather in Columbus for six days of discussions on practical operating problems

• The thinking was hard. So were the seats. For six days, starting March 18, broadcasters had gone back to school. And during those six days they sat six hours a day on school benches in Ohio State University's Campbell Hall in Columbus and paid close attention to proceedings of the Sixth Annual Broadcasting Conference. The affair had been revived after a lapse of the several war years, and it attracted just under 400 engineers from all over the United States, some from Canada and at least one from as far away as Honolulu.

These engineers were interested primarily in the practical side of broadcast engineering. There was a relatively small amount of pure theory on the program. After all, it was the ordinary, every day, practical problems having to do

with station, transmitter and studio operation around which the program had been built. When the conference had been brought to a close late Saturday afternoon, the feeling prevailed that those who attended took away with them much good, workable information as a result of the practical data with which sessions had been liberally larded by the more than 50 experts who appeared on the rostrum.

The Conference will be held again next year but in Urbana, Illinois, being jointly sponsored by the departments of electrical engineering of the University of Illinois and Ohio State University with the cooperation of the National Association of Broadcasters and the Institute of Radio Engineers. A feature of the gathering was an

exhibition of transmitting, measuring, monitoring and allied equipment participated in by ten manufacturers. Dr. W. L. Everitt, past president of IRE and head of Illinois University's electrical engineering department, was director of the conference.

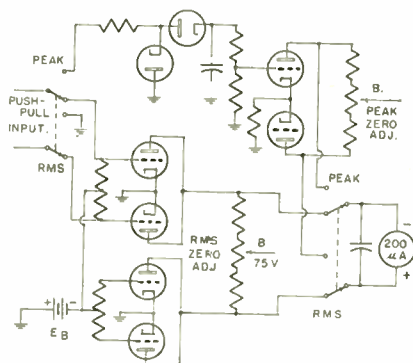
As might have been expected, interest centered largely on FM. Eight of the seventeen sessions had to do almost entirely with broadcasting's baby. But though considerable time was devoted to engineering matters, ranging as talks did from theory to technical descriptions of commercial products, engineers appeared most interested in interpretations of FCC rulings, the current thinking of FCC personnel as far as concerns operating technics and the effect of rulings and regulations on FM stations.

Briefing the Broadcast Conference Papers

ANTENNA PATTERNS

The antennalyzer is an electronic calculator that delineates the solution (visually on a cathode ray tube) of multiple antenna arrays by utilizing analogous relations between operating parameters associated with antennas and the phase modulation of certain sine wave potentials. It was described in considerable detail by Dr. George H. Brown, and demonstrated by W. C. Morrison, both of RCA.

While the instrument can be util-



ized to delineate in either polar or rectangular coordinates the pattern of a given array, its greatest usefulness is to show what pattern changes result in an improvement when the phase angle and the currents to each element are altered. It also can be worked backward, since desired patterns plotted on a map can be matched in short order by watching the pattern shifts as

With the Antennalyzer visual indication of pattern of array can be supplemented by voltage measurements giving either peak or RMS values, using this circuit

several parameters are altered. As soon as a pattern is approximated that gives the desired protection in one or more directions, the physical layout of the array that would give

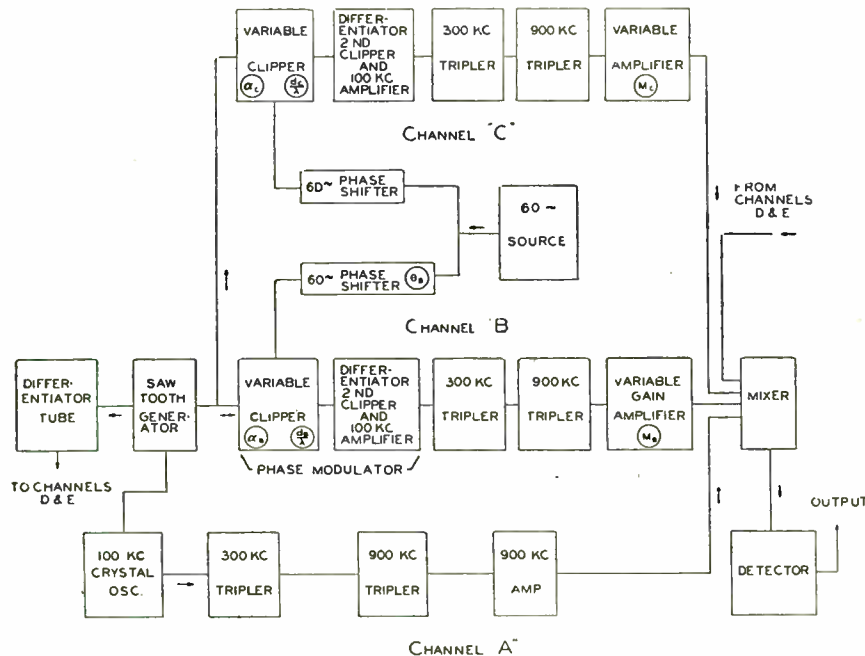
calibrator that is useful in measuring the amplitude of stylus motion was illustrated and involved two small capacitor plates mounted near the stylus arm (which is

prepared by coating a paper ribbon with a magnetic powder having a high coercive force, and (2) a ductile brass wire plated with .0003 in. coating of nickel cobalt material.

This paper contained a plea for more action in standardizing recording methods, such as the selection of a definite groove contour shape, and the shape of the stylus. Several conditions were noted where non-conformity resulted in large distortion factors.

A statement relating to the ultimate use of magnetic recording methods in the future, particularly for broadcasting work, mentioned certain disadvantages at present which require careful consideration before this method can be universally accepted. These included the need not only for constant speed but for accurate speed within 0.2% so that the timing of a recording can be correlated with the split second needs of a program director. In addition some precise adjustment of the operating speed may be needed to fit a specific record into a given program.

It is necessary that the level of the output does not change with repeated playback. It would be desirable to have immediate playback, but this seems impractical with present technics. In lieu of this a way is needed of positively identifying on the tape the location of specific portions of the record. The present tendency of designers to find ways of running the tape slower and slower may not be of primary importance in the broadcast studio recording field.



Block diagram of the Antennalyzer. Channels D and E, not shown, are similar to Channels B and C. Output is fed to an RCA type 327-A oscilloscope which is used as an indicator

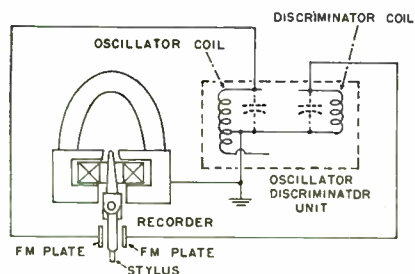
those results is read off the control dials.

The antennalyzer was demonstrated with the solution of several array problems, and will be made available by the RCA at Camden as a service to broadcasters who encounter difficult coverage problems in their territory.

RECORDING TECHNICS

The first portion of this discussion by H. R. Roys (RCA) was devoted to disc recording problems. The non-dependence of the cutting speed on the cutting force was shown. Curves also were shown relative to the cutting force requirements with groove width.

A frequency modulation type of



H. R. Roys explained how measurement of amplitude excursions of any pick-up are made by applying capacitor elements near needle to frequency modulate a local oscillator

grounded). The capacitance variation in one direction shifts the frequency of an oscillator, while the capacitance variation from the opposite plate alters the resonance conditions in a discriminator circuit operating from the oscillator output. In this way stylus travel amplitude is determined from a record of the output to the discriminator load circuit.

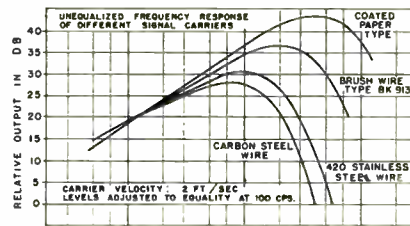


Chart showing frequency response of coated paper tape and various types of wire as used in the Brush recorder-reproducers

It was shown that the most important factor in recording fidelity was intermodulation and circuits were described for measuring this effect.

A historical presentation of the art of magnetic recording was given by Dr. S. J. Begun (Brush Development Corp.) and was followed by details of two high fidelity systems using (1) magnetic tape

Studio design

A survey was made by E. J. Content, acoustical consultant with Station WOR, New York, of the major considerations of studio design as to (1) the reduction of standing waves by eliminating parallel surfaces, (2) production of the most suitable reverberation time and (3) the reduction of inter-studio cross talk and the prevention of noise infiltration.

In the discussion following this paper, the subject of the so-called public dislike for high fidelity was taken up at length. Although this idea was not disproved, a number of the contributing factors which affect the answers in such surveys of public opinion were mentioned, with the resulting conclusion that the final answer on the value of high fidelity can come about only after a number of technical, physi-

ological and psychological factors are more thoroughly investigated.

UHF ANTENNAS

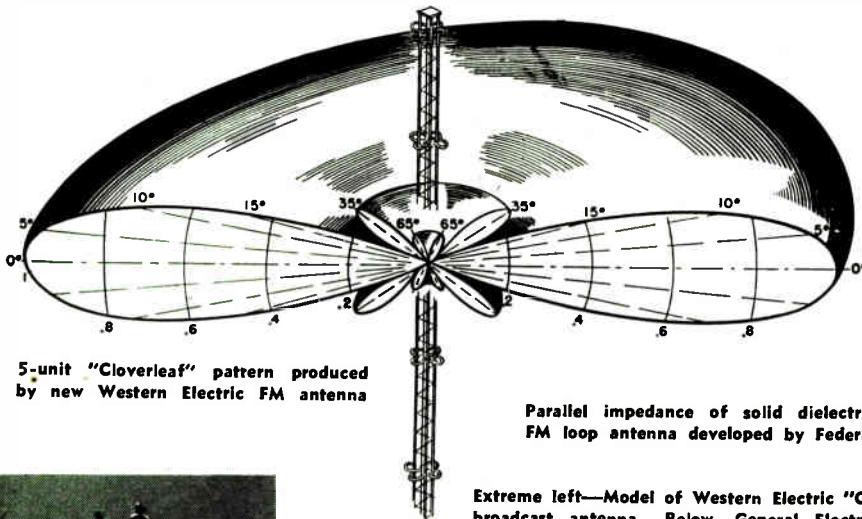
In a symposium on UHF antennas, M. W. Scheldorf (G.E.) described a method of connecting circularly radiating antenna units

disposed on the tower without further adjustments.

In the Federal type a horizontally polarized antenna consists of co-ordinating sections of a loop (see page 74). These loops are end fed sections with the feeder lines placed inside the loop elements.

The resistance component is com-

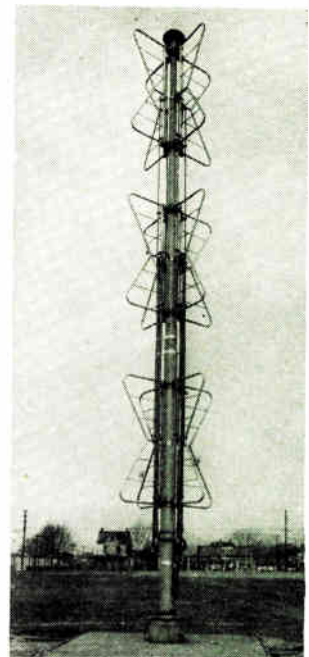
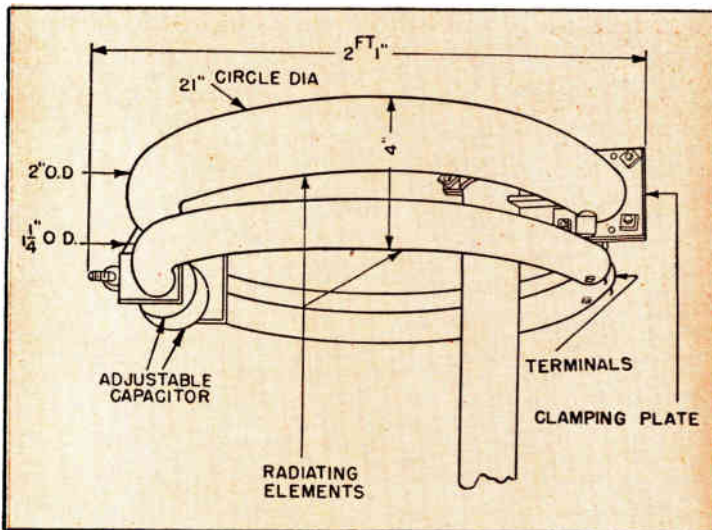
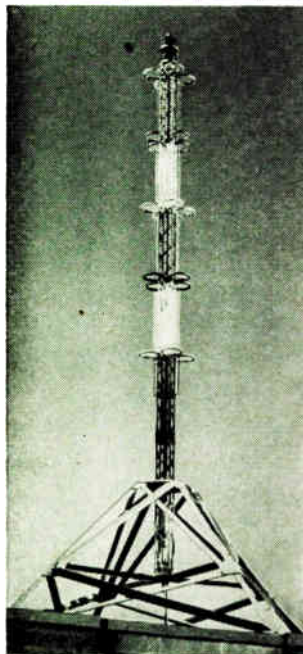
It comprises an array of two or more vertically stacked radiating units composed of a cluster of four elements which in plan view forms a symmetrical shape similar to a four-leaf clover. A radio frequency voltage applied between the junction of the four elements and their ends causes in effect a ring of uniform current which produces a circular radiation pattern about the axis of the ring. By utilizing the directive properties of a vertical stack of such radiating units, much of the energy which would otherwise be radiated into outer space



5-unit "Cloverleaf" pattern produced by new Western Electric FM antenna

Parallel impedance of solid dielectric FM loop antenna developed by Federal

Extreme left—Model of Western Electric "Cloverleaf" broadcast antenna. Below—General Electric single-bay circular antenna. Right—RCA's turnstile elements of current sheet form



that simplifies interconnecting multiple arrays and their balancing. This arrangement consisted of two coaxial horizontal loops in parallel planes. The lower loop is tuned with an adjustable capacitor. This adjustment is substantially the only change necessary in covering the 88-108 mc range.

R. F. Holtz described the RCA array of turnstile elements of the wing or current sheet form. This antenna gives the widest frequency band of any described. One quadrant may be adjusted lying horizontally on ground for the operating frequency and vertical radiation patterns taken. The whole four sections can then be symmetrically

paratively flat as shown. The reactive component shown here is balanced out with a matching stub adjusted for the operating frequency.

The "Cloverleaf" antenna designed by Bell Telephone Laboratories to radiate horizontally polarized waves and to concentrate this radiated energy into a service area surrounding the transmitting station was described by P. H. Smith. The new antenna is engineered particularly for use by frequency modulation broadcast stations operating at the new FCC assigned carrier frequencies between 88 and 108 megacycles and at power levels up to and including 50 kilowatts.

and thus lost for any useful purpose is diverted so as to increase the energy being transmitted into the station's service area.

Maximum antenna gain occurs when the instantaneous currents in all radiating elements are in time phase and of equal amplitude. These relationships are correctly established at the station's operating frequency at the time of installation by methods which do not require field or factory tuning. All radiating units are connected by means of simple clamps at half-wavelength intervals to a 3-in. diameter feed conductor which is centrally located within the tower structure. The tower itself serves

as the return or outer conductor of the feed line. The usual phase reversal occurring along such a feed line at half-wavelength intervals is compensated for by merely reversing the mounting position of the radiating elements in adjacent units. Thus, by this simple installation procedure the correct current phasing for maximum gain at the station's operating frequency is assured.

The design features of the new antenna make possible the elimination of such items as multiple transmission lines, phase correcting lines or networks, balancing lines, etc., which in present antennas prove troublesome because their length must be adjusted for the operating frequency to avoid errors in antenna current relations with a corresponding compromise in antenna gain. The tower is one-foot square and composed of an assembly of standardized structural steel welded sections.

TELEVISION STATION OPERATION

This group discussed the state of the art as far as concerns programming and the technical operation of television equipment.

The problems of handling direct studio pickups, film pickups, remote pickups and relaying were discussed, together with suggestions for training personnel and of establishing routine maintenance of all equipment.

RADIO RELAYS

H. O. Peterson (RCA Laboratories, Riverhead, N. Y.) reviewed the essential problems of UHF propagation and the rules that have been established that give an indication of the expected results

SYMPOSIUM ON PROPAGATION—Rear: Edwin W. Allen, Jr. (FCC); C. W. Carnahan; Paul DeMars, technical director Yankee network; Thomas J. Carroll, Office of Chief Signal Officer, USA; Front: J. R. McPetrie, Service Radio Development (England); R. M. Wilmotte, Consultant; Major E. H. Armstrong; Chas. R. Burrows, (Cornell)

from installations built expressly for relay work. It was evident that there are still many "variations of the unexpected" that must be studied before exact rules and formulas can be laid down.

STRATOVISION

The basic proposal for the use of aircraft flying at upwards of 30,000 ft., was reviewed by C. E. Nobles (Westinghouse) and W. K. Ebel (Martin Aircraft). Tests on some of the difficulties found in this system are being started so that the place that this plan will have in the television system can be evaluated.

As reported in Electronic Industries last month, Westinghouse and Martin have been conducting tests of the system over parts of the East and are understood to have achieved satisfactory results over distances up to 200 miles.

INTERCONNECTING FACILITIES

These papers presented by H. I. Romnes and W. E. Bloecker (AT&T) included a complete survey of the growth of the organizations network facilities program. Recent technical requirements have necessitated extensions of many varieties with capabilities up to 20 kc for audio circuits and up to 3 and 4 mc for television uses.

As evidence of the elaborate network facilities now in use in the U.S.A., there are 140,000 miles of 27—5000 cycle fidelity circuits now in use, connecting over 800 stations in 550 cities, together with an additional 70,000 miles of order wires. Some of these circuits have been equalized to an 8000 cycle level, and for FM station operation, connection facilities having

a fidelity of ± 1 db up to 15 kc with less than 1% distortion have been made available.

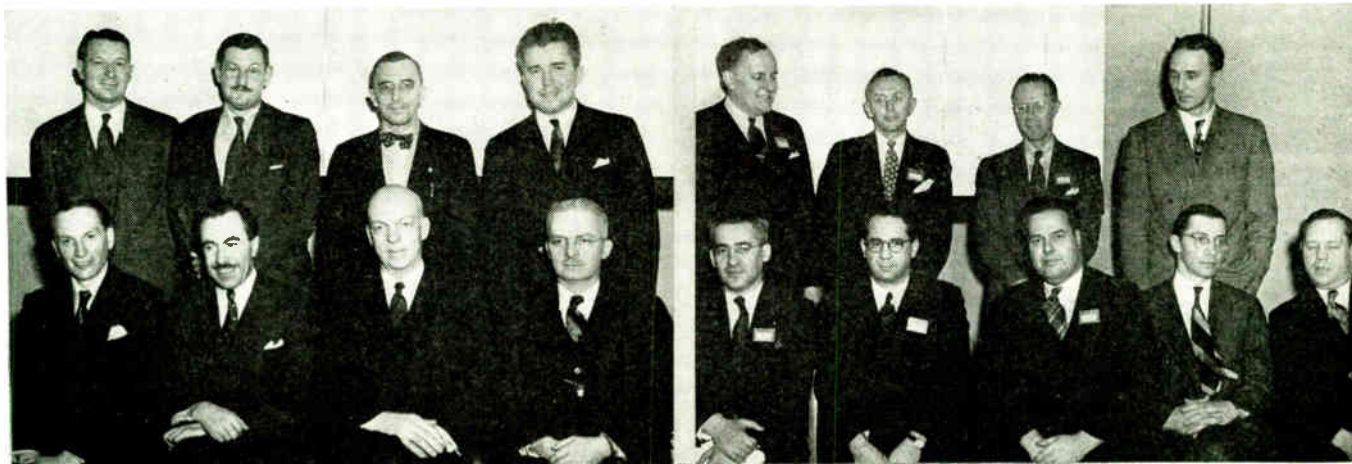
The television use of twisted wire pairs found in regular cable runs was described as practicable for local television pickup applications even when losses of 94 db per mile (for 26 ga. cable) are encountered; 19 ga. cable was stated to have losses of the order of 50 db per mile. A typical installation is that from the Madison Square Garden in New York city to the RCA studios.

Extensive use is starting of special coaxial cables for television service with frequent booster amplifiers with associated equalizers along its length. Power to operate these amplifiers is also sent along the central conductors, eliminating the need for local power sources at each point. Work is also being done to send power along paired lines to operate intermediate amplifiers. The development of network facilities using radio relays is going hand in hand with cable developments.

Technical details of the construction of many new tubes that have resulted from wartime research were described by W. W. Salisbury (Collins Radio Co.). While much of the progress was along the line of high power pulsed tubes, still a number of interesting developments in continuous power output tubes were shown that have great possibilities in broadcast service.

In the development of the latter a definite trend seems to be toward the use of tetrodes, at least in the 100-1000 mc range. The difficulties attending the use of magnetrons in communication work will require considerable more research work. These difficulties are mainly those associated with at-

SYMPOSIUM ON FM MODULATION METHODS: Rear: Albert James Ebel, University of Illinois; J. E. Young (RCA); W. R. David (GE); W. E. Phillips (Raytheon); Front: Dr. P. F. Panter (FTR); A. R. Vallerino (FTR); John R. Boykin (Westinghouse); James Day (REL); J. F. Morrison (Bell Labs)



taining required frequency stability, and linear modulation (either amplitude or frequency).

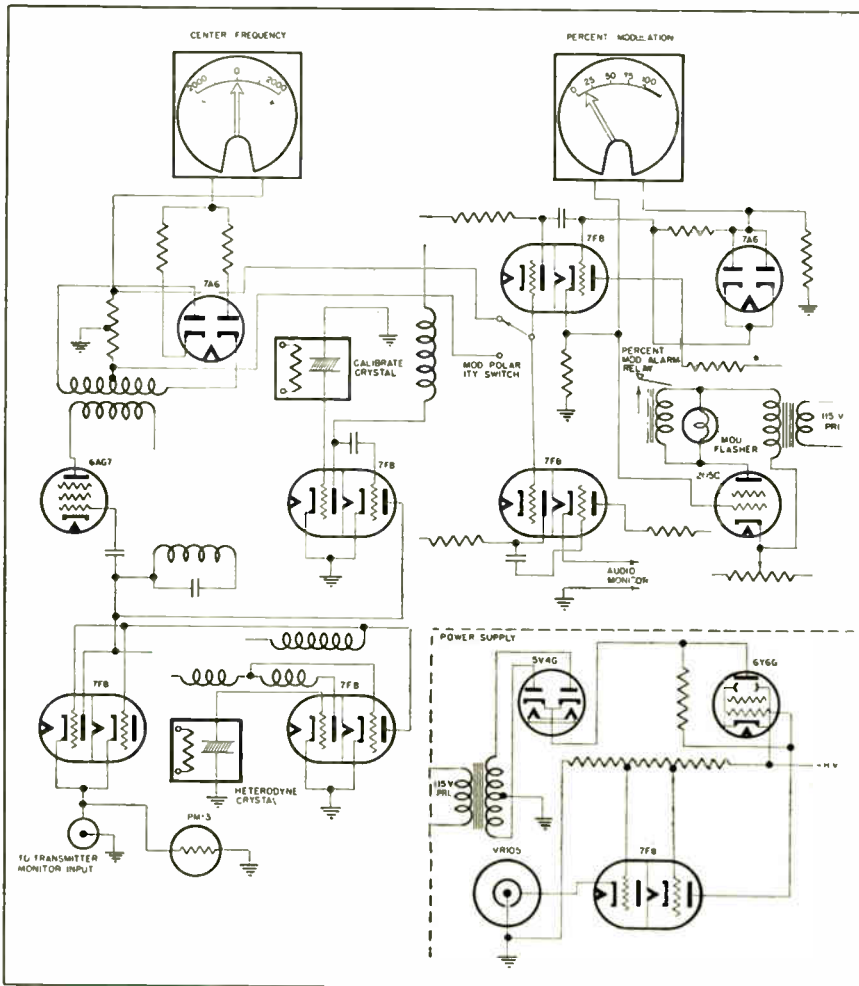
In high power tube development the Resnatron was of interest. This tube, as is typical with tubes developed for high power continuous service uses heavy filaments with high emission. In this case the filament requires 1800 amperes at 2.5 v, and delivers 30 amperes peak plate current.

FM OPERATING PROBLEMS

The difficulties of FM station installations in metropolitan areas,



SYMPOSIUM ON TELEVISION OPERATION: Harry Milholland (DuMont); E. C. Wilbur; W. C. Eddy (Balaban & Katz); T. J. Buzalski (NBC); Scott Helt (DuMont); R. L. Smith (GE); R. E. Shelby (NBC)



suburban areas and mountain tops were described by J. A. Waldschmidt (WOR), Paul Dillon (WMIT), Carl Wesser (WENA) and Delmar Ports (2XOA) with suggestions as to the erection and maintenance of all facilities. Examples were the selection of the WOR site (at 444 Madison Ave., New York City) and the installation of an FM station, the station WMIT on Klingsman Peak which required a 116-mile radio relay from Winston Salem. This re-

lay operated in one jump beyond direct line of sight, using 25 watts at 337 mc. The transmitter was 5000 ft. above sea level.

FM MONITORS

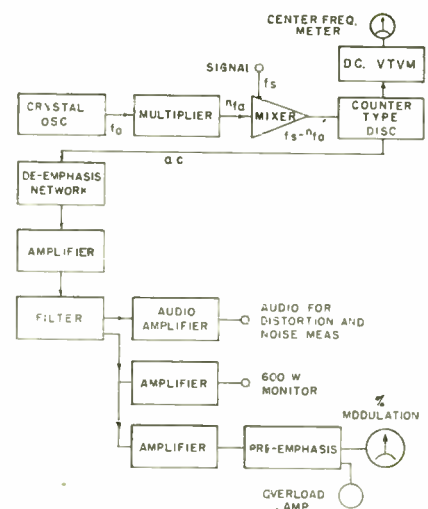
The problems of monitoring an FM station in accordance with requirements of the FCC takes equipment designs of a special nature. The FM monitor being developed by the General Radio Co. was described by D. B. Sinclair. In this

circuit the discriminator used is of the differentiating-pulse counter type.

A design differing in some respects from this was described by J. R. Day of REL. The design is such that both instantaneous percentage and average center frequency are continuously indicated while the transmitter being monitored is programmed. An over modulation alarm capable of being very precisely set to a known adjustable value of either polarity is included.

The General Electric version of an FM monitor was described by H. R. Summerhayes, Jr. This instrument shows mean frequency deviation, percent modulation, peak

At the left is shown a simplified circuit diagram of the new FM monitor and center frequency indicator developed by REL. Below—Block diagram of General Radio FM monitor-frequency indicator



modulation indicator and also gives an audio output for aural monitoring. This instrument used a tuned circuit discriminator with special means for securing linearity over the full operating range.

INSTRUMENTATION

A brief review of the manner in which instruments are influencing and controlling production in every field

● Instrument development during World War II was centered in three major fields:

- (1) Radar and allied developments (mainly uhf and pulse technics).
- (2) Aircraft instruments and controls (including automatic flight and fire control).
- (3) Industrial and scientific instruments (for physical research, metallurgical and chemical process control, etc.).

In general, war necessity merely accelerated the natural evolution of products, many of which were conceived before the war. In the field of instrumentation, however, certain radically new devices and technics were born, usually as the result of new components and materials rather than new principles.

For instance, uhf power measurement was made possible by development of the uhf bolometer. Special crystal detectors, of the type developed for radar reception, made it possible to greatly extend the range of frequency and impedance measurement. Improved insulation measuring instruments resulted from war research in dielectrics and tropicalization.

War's influence

Of still greater importance was the discovery that standard pre-war radio components, otherwise quite satisfactory, were subject to breakdown under the extreme conditions of military use. This led to larger production of such components as hermetically sealed resistors and controls, mineral oil impregnated capacitors, ceramic tube sockets, etc., and these in turn uncovered the need for new instrumentation technics for determining with precision their quality, tolerances, etc. Again, many instrument manufacturers found that re-design of their products, using these higher quality components was of direct benefit to them in reducing spoilage and kickbacks from the field. This will apply especially

to instruments manufactured for export—an important consideration when designing postwar instruments.

Electronic engineers naturally are most familiar with the applications of instruments for measuring purely electrical quantities. However, electronic instruments are being developed and applied for the measurement of practically all physical phenomena, just as electronic control is spreading to nearly all branches of industry. Such analytical instruments as the electron microscope, x-ray diffraction spectrometer, cathode ray cyclograph, engine detonation indicators, pressuregraphs and innumerable other electronic devices for industrial and scientific research

now play an important part in the rigid quality control of materials and products.

To reproduce, in peacetime, the conditions which favored instrument engineering during the war is by no means impossible. The first requisite is better liaison between the instrument manufacturer and purchaser. This can be achieved by free discussion of the requirements and technology of instrumentation in all its aspects. Instrument engineering is now a specialized branch of the electronic art to which design, production and quality control engineers can turn for their instrument requirements. For reference, a general review of instrument applications is given below.

The Range of Instrument Applications

ELECTRICITY		MECHANICS
Capacitance	Density	Balance
Conductivity	Diffraction	Counting
Current	Direction	Flaw detection
Electric charge	Elasticity	Flow
Frequency	Gas analysis	Position
Impedance	Hardness	Power
Inductance	Humidity	Pressure
Magnetic field	Illumination	RPM
Modulation	Ionization	Strain
Phase angle	Mass	Surface analysis
Power	Meteorology	Vibration
Power factor	Microscopy	
Φ	Moisture content	
Radiation	pH	
Resistance	Reflectivity	MEDICINE
Voltage	Salinity	Brain waves
	Size	Cauterization
	Sound	Circulation
	Spectroscopography	Cortical stimulation
CHEMISTRY & PHYSICS	Stroboscopy	Hearing
Altitude	Temperature	Heart action
Balance	Time	Radiation
Color	Ultrasonics	Shock therapy
Combustion	Vacuum determination	X-Ray
Cosmic rays	Velocity	
	Viscosity	
	Weight	

PRODUCTION BRIDGE for

By **WERNER MULLER**

Pan American Electronics
1650 Broadway, New York

Development of laboratory type instrument for making routine checks and accurately measuring inductance

• While the effectiveness of a choke can be determined by placing it directly in the circuit where it is to be used and measuring the hum level, this practice is satisfactory only in a few instances and it does not lead to suitable manufacturing specifications. The most effective method of specifying the inductance of a choke under actual operating current conditions, means the measurement of incremental inductance, which is the value resulting from small magnetization loops superposed on the dc flux intensity curves.

When a current is passed through an air core coil, the flux linkage is purely a matter of geometry of the coil and so the inductance of most common coil configurations in air can be calculated with considerable accuracy. When the medium through which the flux links is magnetic, a non-linear relation between flux linkage and flux produced is found and the flux linkage is greater than before. Therefore while the inductance is greater it will vary in a non-linear manner with respect to the current producing the flux. The dc magnetization can be readily ascertained by the use of the following formula:

$$H_0 = \frac{1.256 NI}{l_1}$$

Where I is the current in amperes and N represents the number of turns, and l_1 is the length of flux path.

The main factor, the nature of the iron, has to be determined experimentally. The relation for ac flux density indicates that measurements can be made at one frequency and predicted for another frequency. If for example the measurement is made at 60 cycles for 6v. RMS it is the same at 600 cycles with 60v. RMS. Therefore, if the inductance of an iron core coil is measured, with suitable precautions, on a bridge for a given ac voltage at a specified frequency,

the inductance will remain the same if the frequency is increased and the voltage increased in the same proportions. This permits most industrial and commercial choke coil tests to be made at 60 cycles, giving all the information desired at higher frequencies (up to several kc at least).

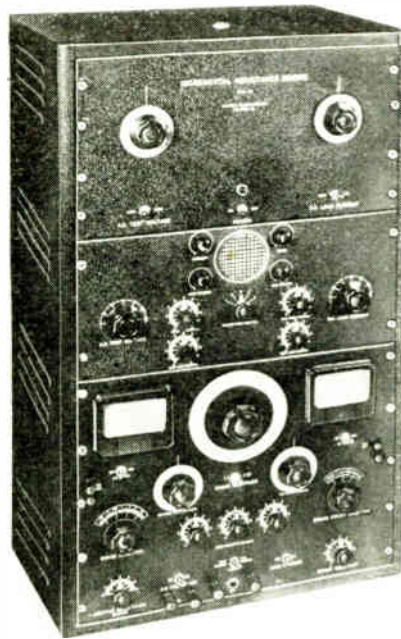
In the measurement of incremental inductance, the required dc must flow through the coil although

the ac voltage across the coil and the operating vs. test frequencies can be juggled without affecting the answer. Although a common method of measurement is to determine the impedance in this way, the in-phase losses show up as part of the inductance value and the latter can not be directly ascertained. In bridge methods the reactance can be separated from the resistance directly.

There are three outstanding bridge circuits, the Hay bridge, the Owen bridge, and the Maxwell bridge. The basic circuits are shown respectively in Fig. 1 as A, B, and C.

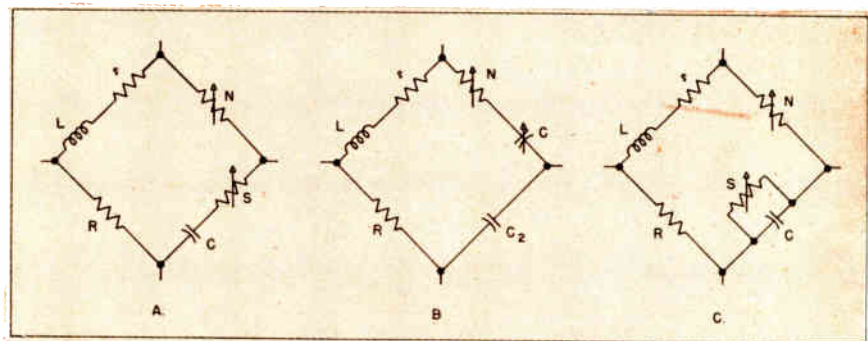
Each of these bridge circuits requires two adjustments, one for reactive balance and one for resistive balance.

The Hay bridge is ideally suited for measurement of inductance where the Q is greater than 5 since the balance can be rapidly obtained. This bridge connection can be used with fully 95% of the reactors that may be submitted for measurement in industrial and research laboratories. However, if the Q is less than 5, the bridge ceases to be direct reading and corrections have to be applied. Since this correction factor is equal to $(\frac{Q^2}{1+Q^2})$, an error of 4% is found when Q equals 5, and 1% when Q equals 10. It is found in practice that with a test



External appearance of the incremental bridge

Fig. 1—The Hay, Owen and Maxwell bridges shown at A, B and C respectively



INCREMENTAL TESTS

frequency of 400 cycles or more practically any inductance has a Q of over 5. As the frequency becomes lower, the Q decreases and a greater proportion of inductances met with in practice cannot be tested on a Hay bridge.

The Maxwell and Hay bridge circuits permit the resistive components to be determined directly as a Q value, while the Owens bridge gives the equivalent resistance.

The Owen circuit is more cumbersome in operation, since it requires the separate adjustment of a decade capacitor for resistive balance and the value of this capacitor becomes impractically large when the Q of the coil becomes large. Nevertheless, the bridge is ideally suited for the measurement of inductances with low Q . Both bridge arrangements permit the dc to flow through two arms, so that the measurement of the dc can be made directly.

The Maxwell bridge has the objectionable feature, that this is not the case and the dc through the inductor cannot be made direct reading. Furthermore, it is relatively unsuited for the measurement of incremental inductance especially where the Q is large, as commonly encountered in coils carrying dc. This bridge, however, is well adapted to the study of the leakage reactance in transformers. Therefore, the selection of the most useful laboratory test bridge lies with the Owen and the Hay circuits, each one being suitable for some particular types of coils.

It is of interest to examine the features of a commercial bridge that has been developed to cover the requirements of both laboratory tests and production checks, as shown in Fig. 2, a product of the Industrial Transformer Co., 2540 Belmont Ave., New York. Starting with the source of ac and dc power to the bridge, the former was selected at 60 cycles as the test frequency, with provision for the use of another frequency source externally applied if required. This selection was made because 60 cycle voltage is available with practically unlimited power from the mains, the frequency is low enough to be far removed from the resonant frequency of the usual choke, and also,

this low frequency permits applying high flux densities at comparatively low voltages.

If the inductance at another frequency is desired, a decrease in the ac voltage is made in the same ratio as the two frequencies. In the bridge shown, voltages as high as 300 v at 60 cycles can be obtained, which represents voltages of approximately 4000 \checkmark at 800 cycles. For this purpose any voltage in the range from 0.01 v to 300 v can be applied by the use of Variac controls in conjunction with test transformers. A self-contained high impedance VTVM is applied while setting this voltage to a specified level. The load imposed by this voltmeter, 2 meg. and 40 μf is usually insignificant but in any case, can be switched off during the balancing period.

The use of low test voltages (down to 10 mv) is necessary to simulate high frequency test equivalents. This low voltage also enables making incremental permeability tests on sample laminations, which closely approach the initial permeability of the material, getting information of value in predicting the hysteresis loss of any choke or transformer.

A precaution to reduce the effect of harmonics is the addition of a series resistance between the source of ac power and the bridge. This resistance, which is variable in

semi-logarithmic steps, assures better waveform across the inductance under test.

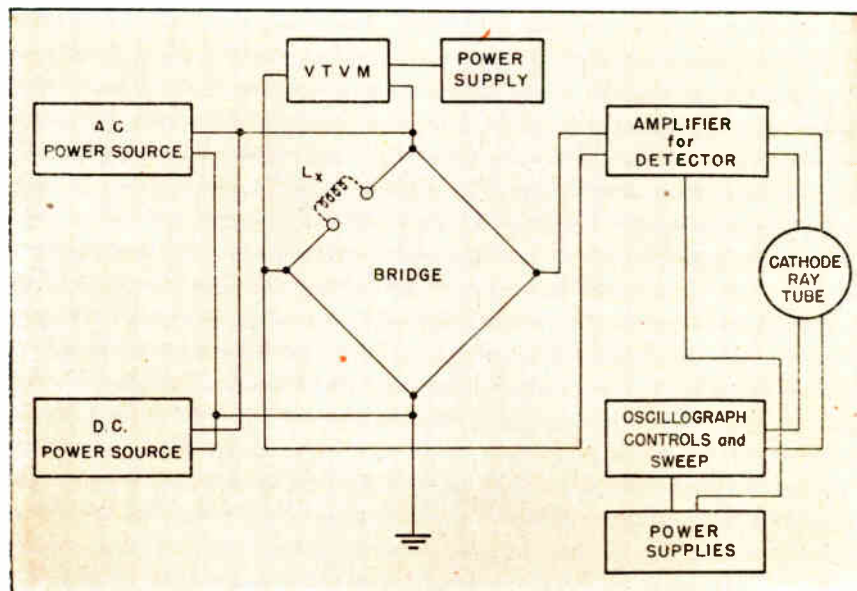
The next supply source is the dc which must be variable from zero to one ampere. This voltage is obtained from a full-wave filtered rectifier using two 3B25 tubes. The transfer circuit to the bridge contains a special choke having shielding and a hum-bucking feature which prevents the introduction of any ac components along with the direct current, which would upset the balance. The normal operating ranges are from 1 millihenry to 50 henries with 1 ampere dc, 50-500 henries with .15 ampere and above 500 henries, 15 ma.

As to the bridge itself extreme precautions are necessary that all components are fully shielded. A single switch provides either Hay or Owen bridge connections. Another switch selects one of four resistors which multiplies the range of the bridge in steps of ten. Switch 3 selects the proper capacitor. The main calibrated dial controls a semilog variable resistor with a maximum value of 11,000 ohms, in series with which is a decade resistor, adding steps of 10,000 ohms, giving a maximum resistance of 111,000 ohms. These components provide for various inductance ranges up to 1,110 henries.

At the other end, the minimum

(Continued on page 118)

Fig. 3—Block diagram of the incremental bridge



COAXIAL FEED

By **A. G. KANDOIAN**

Department Head, Federal Telephone & Radio Laboratories

Design considerations for directive radiation systems, easy to feed and giving proper patterns



Two vertically stacked coaxial square loops designed for new 88-108 mc FM frequency

• The expansion in the use of high frequencies in many communications and broadcasting networks, plus the high cost of power at these frequencies, has accentuated the need for economical, directive radiation systems. The antennas to be described in this article were designed at the Federal Telephone and Radio laboratories for just that purpose; for they are simple to feed, easy to construct, and give radiation patterns that are ideally suited for broadcast applications.

In particular these antennas should be of interest to F-M engineers, for they give a high degree of directivity in the vertical plane while maintaining complete omnidirectivity in the horizontal plane. Type I (Fig. 1) is a coaxially fed loop which sends out a horizontally polarized wave, while Type II (Fig. 2) is this same loop to which a vertical antenna has been added so that circular or elliptical polarization could be obtained.

While the design of ultra-high-frequency loops has been described by several investigators¹⁻³, in every case these loops require the use of impedance matching or balancing networks which entailed the use of extraneous equipment. In this system the radiators, as well as the supporting structure, act as the matching circuit so that the antennas can be designed to have an impedance which matches any standard cable such as a 50-, 70-, or 100-ohm line. No stubs or balanced feeders are necessary.

A typical illustration of how this is accomplished is indicated in Fig. 4, which is the equivalent electrical schematic of the four element loop shown in Fig. 3. As seen in this figure the input impedance of the antenna circuit should be 100 ohms, and consequently the resistance of each section, since all four are equal and in parallel, must be 400 ohms.

The other fixed parameter in this system is the antenna terminal resistance which is a function of the diameter of the loop and cross-section of the radiator, and in this case is 1600 ohms. The problem, of course, is to match this terminal impedance to the required 400 ohm input impedance via the two coaxial quarter wave transformers (AB-BC) whose characteristic impedance can be made any value by the proper selection of the inner and outer conductor diameters.

Before indicating the calculations necessary to effect this match the following expression from transmission line theory on quarter wave transformer should be reviewed:

$Z_m = Z_o \times Z_L$, where Z_m is the characteristic impedance of the matching transformer; Z_o is the characteristic impedance of the feeding line; Z_L is the load impedance.

To determine the value of the characteristic impedance of the

matching transformers (AB-BC), it is advisable to work from the antenna toward the transmission line. First examine the circuit to the right of X on Fig. 4. In this case Z_m was chosen to be 100 ohms because it is the most practical value to use. If this line (AB) is to act as a quarter wave transformer, Z_o must be:

$$Z_o = \frac{100^2}{1,600} = 6.25 \text{ ohms}$$

Using this value as the output impedance of the circuit to the left of X and knowing that the input impedance of the section must be 400 ohms, then the characteristic impedance of the line from B to C must be:

$$Z_m (bc) = 400 \times 6.25 = 50 \text{ ohms}$$

Thus it is possible by use of ap-

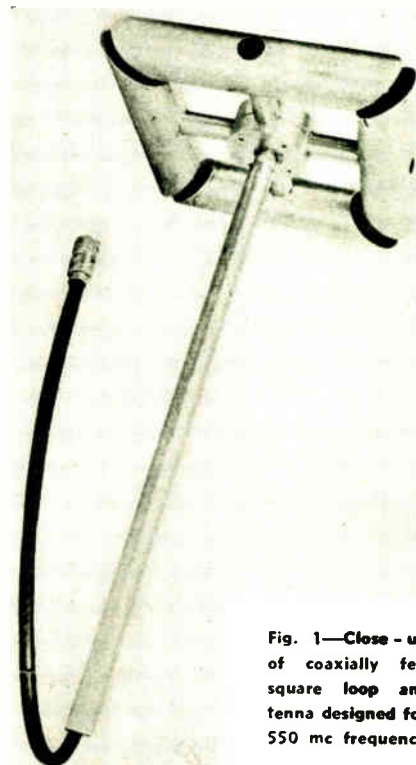


Fig. 1—Close-up of coaxially fed square loop antenna designed for 550 mc frequency

FM LOOP ANTENNAS

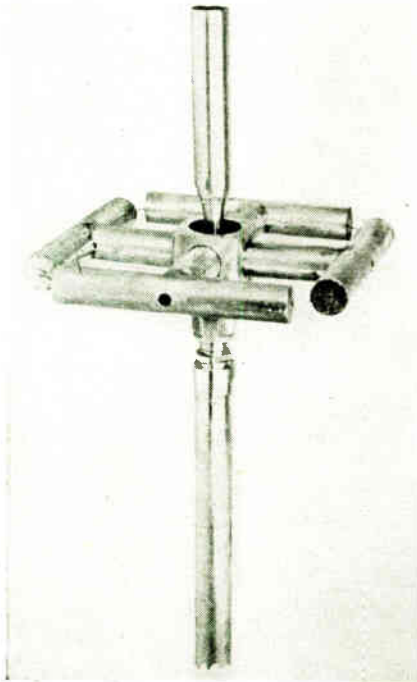


Fig. 2—Square coaxially fed loop antenna of "electric-magnetic" type for 1200 mc

appropriately dimensioned radiators and supporting structures to match the loop to any coaxial cable. In addition, as indicated in Fig. 3, no limitations other than practical, exist for the number of elements making up the loop. Thus, a loop of

any diameter may be constructed and the current distribution maintained essentially constant. The limitation of small loop diameter compared to wavelength need not be observed.

The radiation pattern of the loop with substantially uniform current distribution, and with diameter small compared to a wavelength, is well known. In the plane of the loop the radiation is non-directive, while in the perpendicular plane it varies approximately as $\cos \beta$, where β is the angle measured between the plane of the loop and the test position.

In the more general case of a loop with any sized diameter and uniform current distribution, the radiation is still omnidirectional in the plane of the loop. However in the perpendicular plane Foster⁴ has shown that the pattern is of the form: $J_1 \left(\pi \frac{d}{\lambda} \cos \beta \right)$ where d is the loop diameter; λ the wave-length J_1 the Bessel function of the order unity.

Bandwidth of the loop

One of the most important considerations in the design of any antenna is the bandwidth or change in input impedance versus frequency. In this system the band-

width is a function of three parameters: the diameter of the loop, the cross-section of the radiator and the impedance of the quarter wave transformers. In general the lower the difference between Z_0 and Z_L , the lower the "Q" of the circuit and consequently the wider the bandwidth. Thus it is possible to design a radiator of this type to meet most practical bandwidth requirements.

At uhf the most practical method of measuring this change of input impedance versus frequency is by noting the mismatch that occurs as the frequency is varied. This mismatch, which is due to reflection from the antenna, can be most conveniently measured in terms of the standing wave ratio (SWR) existing on the transmission line leading to the antenna.

A typical measure of the standing wave ratio versus frequency is shown on Fig. 6. A 50-ohm line was used to feed the loop and as indicated on the figure, a fairly wide bandwidth resulted. Other experimental models were constructed at Federal Telecommunication Laboratory to increase and decrease the effective bandwidth and on the whole they agree with the theoretical considerations.

In this connection it is important

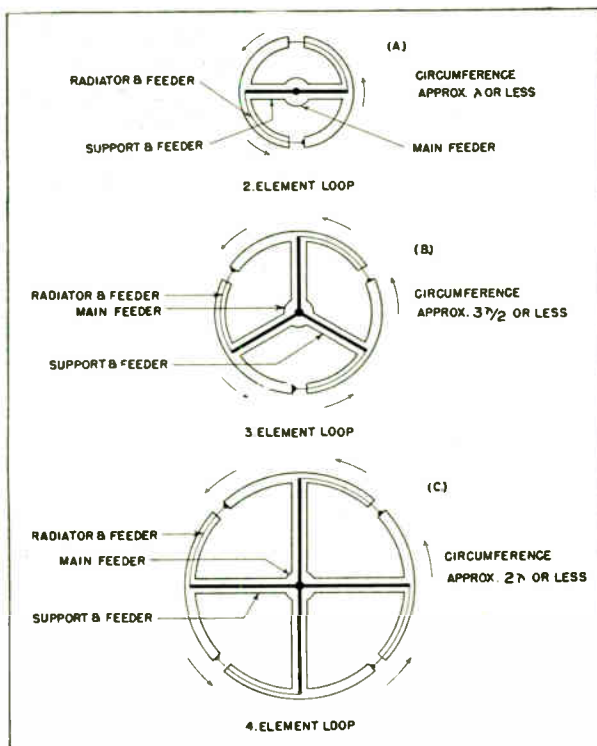
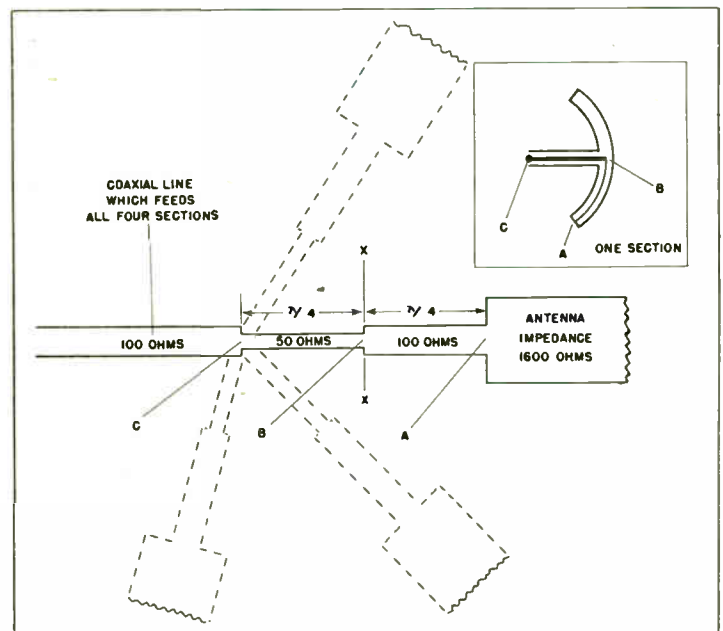


Fig. 3 (Left)—Schematic of coaxially fed loops showing dimensions and feed arrangement. Fig. 4—Equivalent electrical circuit of 4-element loop



to note that the standing wave ratio effects the total attenuation of the transmission line system feeding any load, in particular an antenna. Where long lengths of line are used it is important to keep the SWR to a minimum, otherwise the total attenuation is increased. This problem has been discussed in a recent paper⁶. The total attenuation is given by:

$$A = A_0 + 10 \log_{10} \left(\frac{1 - \Delta^2 \epsilon - 0.46 A_0}{1 - \Delta^2 \epsilon} \right),$$

where A is the total attenuation; A₀ is the normal attenuation; Δ_L is the reflection coefficient.

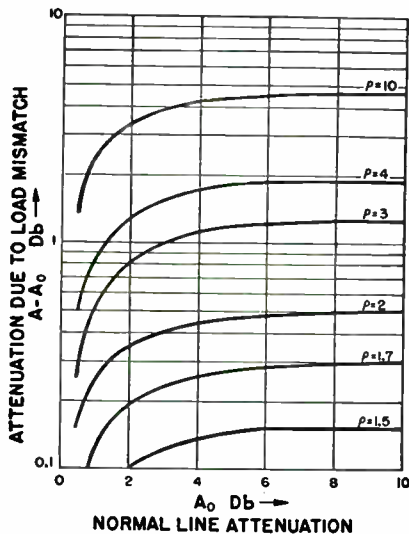


Fig. 5—Attenuation due to mismatch

Fig. 5 is a graphic representation of the attenuation increase due to mismatch and as seen on this chart a SWR of 2 to 1 on an 8 db line will cause only a .5 db increase in attenuation.

Stacking technic

Another important feature of this type of loop is the mechanical and electrical ease with which vertical stacking can be achieved to give any practicable power gain. This is true because electrical intercoupling between stacked loops is very small since each radiates predominantly in the horizontal plane. Thus, the presence of additional

loops does not affect the impedance of the first loop. Fig. 7 depicts two experimental loops built as a pair and spaced approximately one wavelength apart. The input impedance to the pair is 50 ohms and it can be tuned over a wide range of frequencies with the stub. At this point it should be noted that the antenna can be constructed for just one frequency, in which case no stub is needed, or for several frequencies with the use of a stub.

Any number of such pairs may be stacked to give the desired power gain. At the junction of the transmission line of any two pairs, however, a 2-to-1 impedance correcting network is required to raise the antenna impedance to the impedance of the line. This is commonly accomplished by means of a quarter wave transformer. Fig. 8 shows the schematic of a feeding system for a stack of four loops for FM broadcasting while Fig. 9 gives the necessary theoretical data to show what spacing to use between loops and what gains may be expected due to the vertical stacking when equal currents are fed to successive loops.

A directive vertical pattern essentially free from minor lobes also

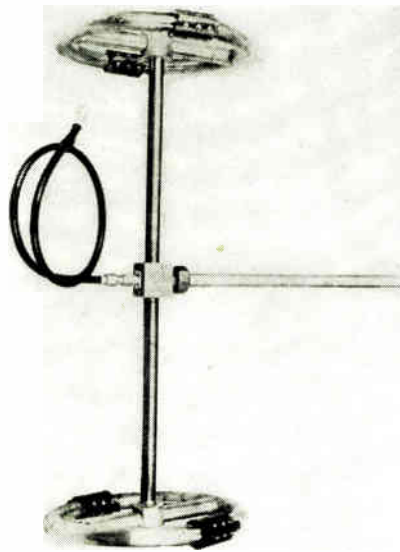


Fig. 7—Stack of two loops with tuning stub

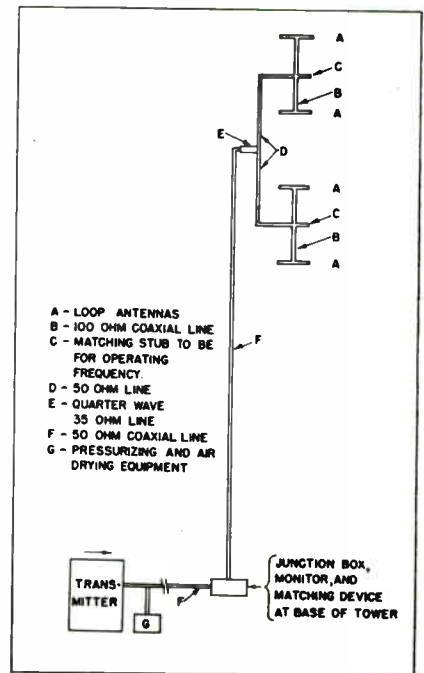


Fig. 8—Transmission line and feed system for typical FM broadcasting antenna

may be obtained by proper distribution of current between successively stacked loops⁵. However, under these conditions the overall power gain from a fixed number of loops is reduced.

Summarizing, this loop sends out a horizontally polarized wave which is directive in the vertical but omnidirectional in the horizontal plane. Its characteristics and relative merits are:

- No balanced feeders are necessary.
- No stubs are needed for matching, hence, the full bandwidth capability for the loop may be realized. A stub may be found desirable to tune the loop, or group of loops, to any frequency within a large range.
- No insulator mechanical supports are necessary. Metallic supports are used, rigidly fastened to the mast and radiating members.
- Any size loop may be built with essentially uniform clockwise or counter-clockwise current distri-

(Continued on page 122)

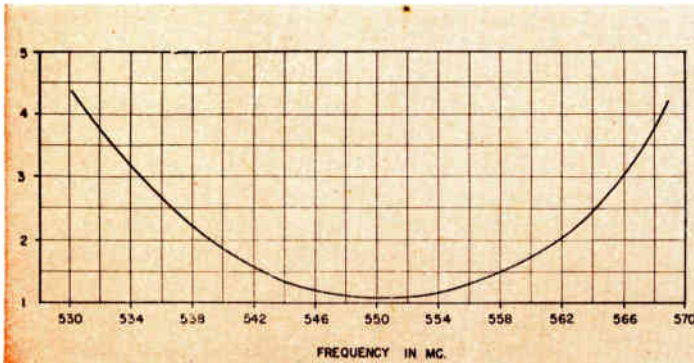
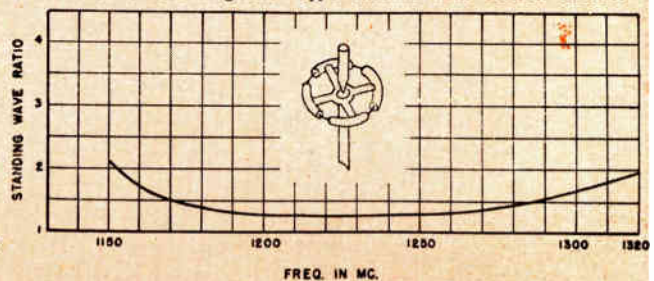


Fig. 6 (Left) Graph of frequency vs. standing wave ratio (SWR) in a four-element loop 8½ in. in diameter. Fig. 11—Similar data for the "electric-magnetic" type antenna with vertical radiator



COIL SHORT TESTS

By NORMAN L. CHALFIN

Simplified method developed for fast production inspection capable of detecting single shorted turn in adjacent wires

● In the mass inspection of coils it frequently is necessary to determine whether there exist shorted turns. A short appearing between adjacent turns or between wires separated by several turns cannot readily be observed by inspection. With fine wire coils a resistance measurement would be unlikely to show the presence of a short. Bridge methods of testing are possible but require careful adjustment and may not be adaptable to production personnel use. The method described has proved successful for an unskilled production components tester and has sensitivity great enough to detect a single shorted turn between adjacent wires forming essentially a closed loop, or shorts between turns many wires separated. An indication can even be observed when the leads of a perfect coil with as many as fifty thousand turns are shorted together.

The circuit diagram of Fig. A shows the electrical connections. Fig. B shows the mechanical arrangement used by the writer for use with recorder and playback coils.

The operating principle is well known. When a closed loop is brought close to a source of alternating current power, the loop will absorb energy from the source and if the source is poorly regulated there will be a dip in the source voltage. In the application described the "source" is the secondary winding of a transformer. The secondary is split and the two halves connected in phase opposition so that if the voltages in the two halves are equal the net output to a measuring instrument should be zero.

The transformer takes on any convenient form. It is suggested that the coil tester be constructed from the same types of coils as those under test. It is a simple matter to construct the arrangement of Fig. B with any type of coil. The iron core protrudes from

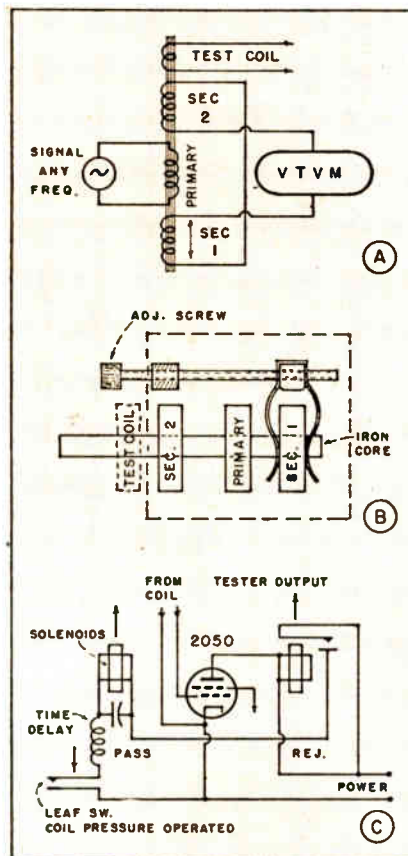


Fig. A is the circuit diagram of the tester; B shows the mechanical arrangement of the device; C indicates solenoid reject plunger

the housing of the transformer and should preferably be shaped to fit the coil form.

Operation of the test set is simplicity itself. The test coil is placed over the core. If it is unshorted and OK there will be no indication on the meter. The existence of any shorted turns will cause the meter to indicate some increased value of voltage. This will result from the unbalance of the phase opposed voltages in the split secondary. The unbalance is due to the absorption of power from that half of the secondary nearest the test coil.

The core material is not critical.

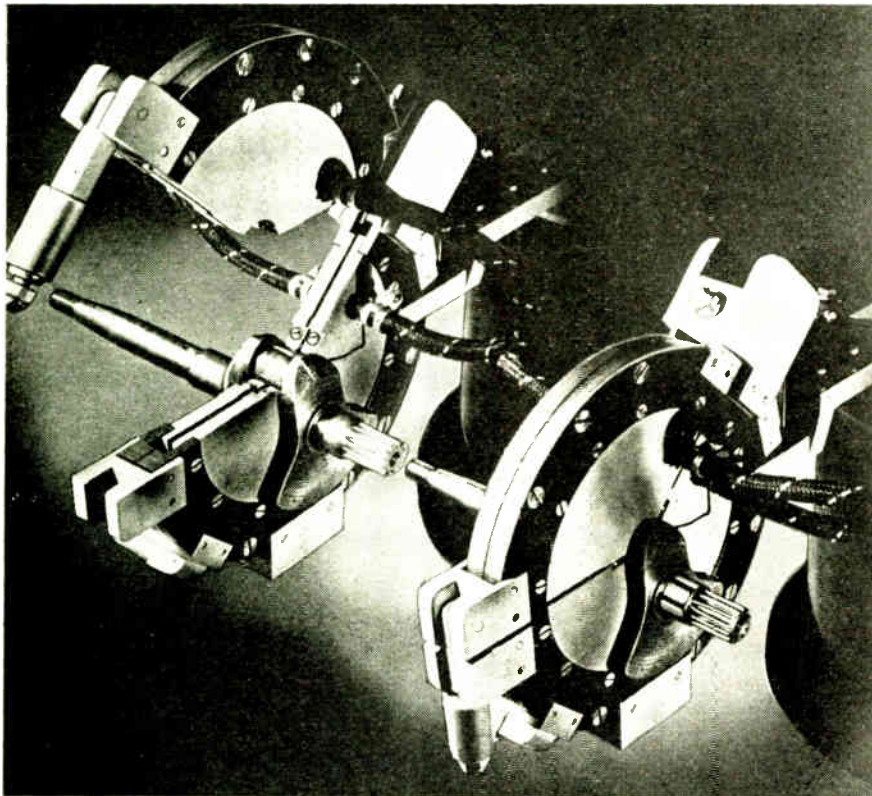
Powdered iron, Armco soft iron, and ordinary tool steel have been used with success. Powdered iron is best, giving the greatest indication with the same coils. Hypersil transformer laminations also have been used successfully with results about equal to powdered iron.

The following operating notes may be of interest. The zero adjustment consists of a phosphor bronze spring clip cemented to a threaded hex bushing and is adjusted from a knob on the panel. The unit is zero set with a coil known to be good. An absolute zero adjustment is not necessary. It will not be entirely possible with some arrangements. In this case "zero adjustment" consists of adjusting for minimum voltage indication on the ac voltmeter or VTVM. The latter is preferable since more sensitive indications are possible.

While we have indicated "any" frequency as that at which the test set may be operated, there is a frequency for the set-ups which is an optimum value. This is the resonant frequency of the system and generally will be an audio frequency of several thousand cycles for phonograph pickup coils or recorder coils. For rf coils the frequency probably will be near the resonant frequency of the unit if designed for iron core use. For transformer windings, it probably will be some low audio frequency.

The system lends itself to automatic operation to the extent that a solenoid reject plunger can be operated in the plate circuit of a thyatron whose grid is controlled by the change in ac voltage when shorted turns appear. A plunger throwing in another direction can be made to operate after a small time delay if there are no shorted turns. No details are shown in Fig. C because every set-up would require a specific physical arrangement. The block diagram shows the circuit action for this automatic operation.

TUBES ON THE JOB



Split coil jig for electronic heating of eccentric shaped parts speeds up production flow

Split Coil for HF Heating

For electronic hardening and brazing operations on such units as crankshafts and camshafts, a new multi-turn split coil has been engineered by Induction Heating Corp., 389 Lafayette St., New York 3, N. Y. Single turn split coils have been in use for some time but in coils of less than 1 in. diameter insufficient energy is transferred to produce the normally high quality results expected from induction heating. Using a frequency of 375 kc. power concentrations as high as 20 kw per sq. in. on a 1/2 in. diameter shaft have been obtained with this Thermonic multi-turn split coil. Journal areas on small diameter shafts can be hardened to a depth of twenty to thirty thousandths of an inch.

Another feature of this coil design is the possibility of using the coil either with or without internal quenching. For internal quenching the quench medium is carried between the copper-plate turns and allows quick cooling of the heated metal without removing the work from the coil. By eliminating this time delay from the end of the

heating period to the start of the quench excessive thermal conduction is prevented.

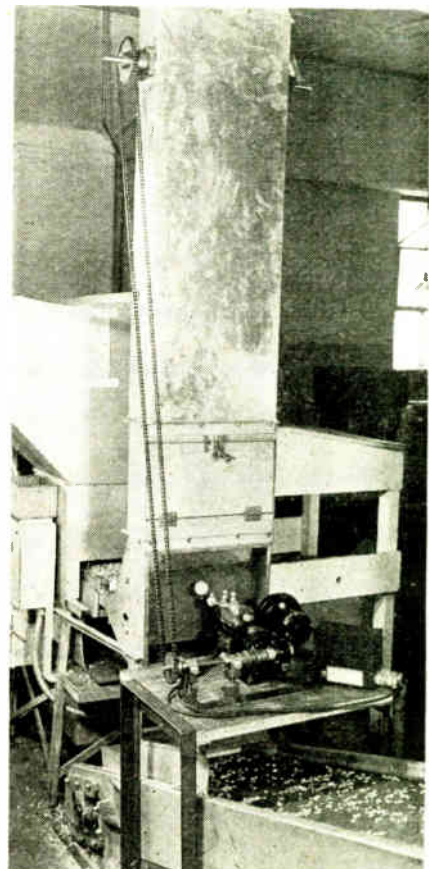
Walnut Sorting

An electronically controlled servomechanism has solved a serious difficulty that had developed in the California Walnut Growers Association's process for the automatic separation of cracked shells from walnut meats. The meats and shells are fed into an air separation throat which carries an air stream of approximately 2000 feet per minute. With proper air velocity the shells are floated away and the meats drop into boxes or on conveyors. While this action seems reversed on first thought, the SpG of the shells being heavier than that of the meats (1.1 to 0.9), the irregular shape of the shells produces enough drag-coefficient so that they and not the meats are carried away by the air stream if the correct velocity is maintained. Varying amounts of material induced in the air stream have a pronounced effect on air velocity. Increasing the volume of meats and shells reduces the velocity of

the air and a large quantity of meats may drop with the shells. If the flow of material decreases, the velocity speeds up and several hundred dollars of meats may be carried away with the shells hourly.

A Motron electronically controlled servomechanism, made by W. C. Robinette Co., South Pasadena, Cal., now automatically governs the correct air velocity in the sorting chamber regardless of the amount of walnut meats and shells fed into the separator. A ping-pong ball used as a drag sphere is fastened to the governor actuating arm of the Motron and extends into the air stream through a slot in a glass window. An adjustable counterweight on the governor arm is used for a control setting of arm positioning for any pre-determined velocity. If the velocity rises or drops away from this pre-determined value the ball and governor arm also rise or drop with the changing air drag. The control mechanism through the chain drive then moves the damper for re-establishment of the proper velocity.

Separation throat for walnut sorter; meats drop to conveyor for additional processing



The damper motor control is electronic in operation and functions without relays. The control action is accomplished by the angular position of a contact which is governed by the position of the ping-pong ball with a current of the order of a few microamperes. Maximum movement speed of the damper is 5° per second.

In the Motron servomechanism system any deviation of the governor arm from a pre-determined position results in the electronic controller feeding energy into the motor control to re-establish proper velocity so that the drag sphere returns to its zero position. This energy is proportioned to produce comparatively fast movement of the damper if the damper position needs considerable correction, but as the damper position approaches the proper closure to produce the required air velocity the movement becomes progressively slower.

Heat-sealing Vinylite Play Balls

Swinging their electronic heating equipment from the war-time needs of making solar stills, DuPage Plastics Co., Lombard, Ill., are now fabricating giant, light-weight play balls. Manufactured of Vinylite with a wall thickness only 0.006 inch, these 22 in. diameter balls are virtually indestructible. High frequency electronic heat - sealing makes airtight, waterproof seams that are as tough as the thermoplastic material itself. An RCA 2-kw electronic power generator is used for the sealing operation and provides lower operating costs than any other seam sealing method. A separate water-proofing operation would be required were the seams stitched in the conventional manner.

Hot seam sealing of Vinylite balls is fast



Faintest of heart reactions are amplified and recorded instantaneously by this unit

Electro-cardiograph

• A direct-writing electro-cardiograph has been developed by Electro-Physical Labs., Inc., 45 West 18th Street, New York under the name, Carciotron. The instrument makes it possible to record instantly and permanently standard heart action curves, eliminating photographic and darkroom procedure.

It is completely housed in a mahogany case that is easily portable. The instrument consists of a set

of four applicators with suitable switching means so that any pair can be applied to the balanced amplifier which delivers driving power to a rugged electrodynamic recording pen writer unit. The tape is pulled through at a fixed rate by a synchronous motor drive and in addition a marking signal can be applied at one second intervals if desired to check timing axis accuracy.

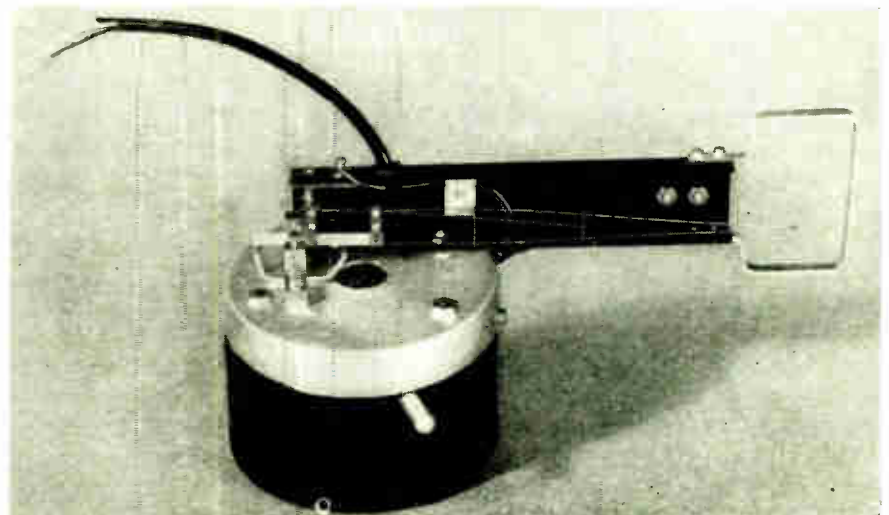
The heart of the instrument is the amplifier which gives a gain of about 90 db using standard tubes. The electro-dynamic type of recording unit produces on an especially processed wax coated paper the familiar graphic pattern.

Recording is inkless, which permits complete portability, as there are no inkwells to spill or tubes to clog. The marking is accomplished by an electrically heated loop of wire at the end of the pen arm.

The circuit contains all standard features associated with electro-cardiograph equipment, and in addition numerous items dealing with the reduction of interference, an automatic disconnect should excessive interference appear, a "good ground" indicator, standardization checks for both deflection amplitude and chart speed, etc. The instrument weighs 34 lbs. and operates from the ac lines.

Equipment of this kind frequently is used to observe a patient's heart action during surgery or for research projects. An electro-cardiogram has become an important item of medical diagnosis because of growing concern about heart disease, which is one of the leading causes of death in the United States.

Stylus driving mechanism of electro-cardiograph is a linear galvanometer with high deflection speed. A special chemically treated paper tape is used with an electrically heated stylus tip



CULTIVATE EXPORTS!

By **H. GREGORY SHEA**,
Associate Editor Electronic Industries

Sales competition may arrive sooner than expected and foreign markets will represent a welcome cushion

● Speaking at the opening of a drive to help feed Europe, started in early March, former President Hoover said of the European situation, "Famine is the inevitable aftermath of war."

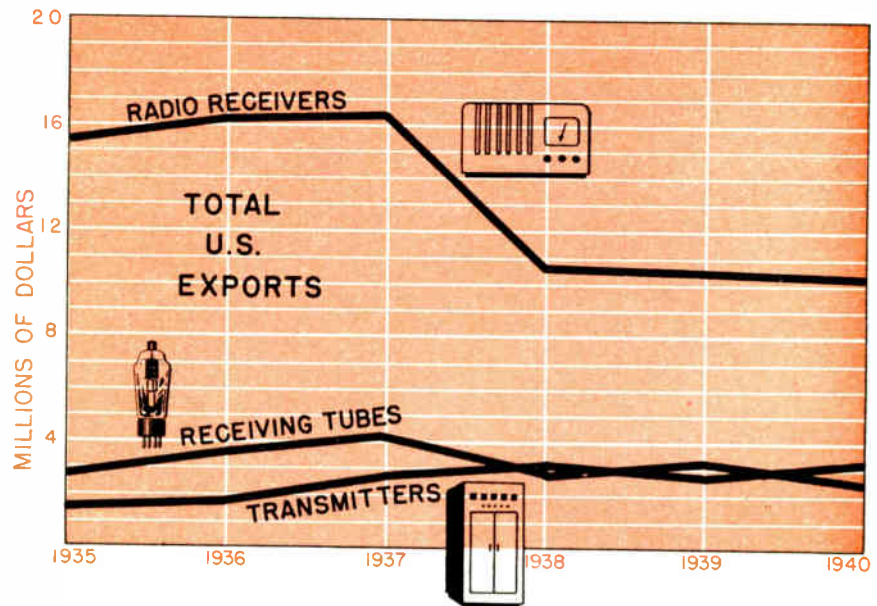
It is well for the radio manufacturer to realize another economic fact of great importance to him, namely, that a slump in demand after an initial spurt is also the inevitable aftermath of war.

During a war, particularly a total one such as we have just been through, no purchases of radio sets and other durable goods are made. This results in a concentration of demand immediately afterwards. When this demand has been satisfied, a large proportion of the potential buyers, possessed of new merchandise, will be out of the market entirely for a certain time.

Furthermore, the wise manufacturer will take with a grain of salt the predictions that are so freely being spread around that the demand for durable goods of all kinds, including radio sets, is so large as not to be capable of fulfillment for several years. He should remember that if he goes to five stores trying to buy a white shirt, each of the merchants will be convinced that he has lost a sale and will report it, whereas actually only one shirt was involved. Also the current wave of strikes has meant that in a very real sense employes of strike-bound companies have been eating the savings which they expected to spend on new radios and home equipment. These losses from the pent-up demand are irrecoverable.

Thus sales competition may arrive much sooner than expected. Where then will the radio manufacturer sell his sets?

If past performance is any criterion, he will, in common with hundreds of others, hit on the thought that he can fill the void



Above, in chart form, and below in figures are statistics for total US exports to all countries

TOTAL U. S. EXPORTS	1935	1936	1937	1938	1939	1940
Transmitters	\$1,578,400	\$1,817,216	\$2,684,336	\$2,957,896	\$2,695,790	\$2,287,879
Receiving Sets	15,471,721	16,041,147	16,128,572	10,553,547	10,448,017	10,157,423
Receiving Tubes	2,882,145	3,514,263	4,063,517	2,973,059	3,000,701	2,451,920
Total	\$19,932,266	\$21,372,626	\$22,876,425	\$30,306,898	\$16,144,508	\$15,897,222

Below are statistics covering exports of principal components to ten largest importing countries

	TUBES	RECEIVERS	TRANSMITTERS
Brazil	\$969,922	\$7,780,907	\$714,302
Chile	315,373	2,067,290	257,022
Colombia	152,485	2,915,865	794,449
Cuba	267,219	4,403,281	503,413
British India	167,511	2,374,166	136,343
Mexico	474,710	9,330,379	799,928
Philippine Islands	108,158	1,693,420	482,600
United Kingdom	1,282,669	7,194,677	768,811
Union of South Africa	490,250	9,218,974	342,056
Venezuela	126,584	2,450,774	515,591
Total	\$4,354,881	\$49,429,733	\$5,514,515

in his demand by invading the export market.

The export market, however, is no different from any other market. It must be cultivated and cultivated tenderly! Perhaps the only important difference is that the exporter can count on a much greater loyalty on the part of his foreign correspondents—if he has treated them well—than on the part of domestic dealers. This loyalty goes to the extent of overcoming an unfavorable price differential. Of course, this is not because the foreign importer is a finer fellow than the domestic dealer, but because distance makes acquaintance difficult and the wise business man deals with those he knows rather than with strangers.

Building a market

Emphasis must be laid, however, on the proper cultivation of the market. In building up a market for any kind of goods, whether it is in this country, or for that matter anywhere else in the world, the seller who wants to succeed makes every effort to initiate and build up personal contacts with his customers. This is of such obvious importance that in many of the smaller companies, and indeed even in the largest the head of the business reserves the making of such friendship to himself as part of his important activities. In any event it is the usual practice to have forces of salesmen to maintain and expand this personal relationship with customers.

To attempt, therefore, to reverse this policy in respect to foreign buyers seems foolhardy. Certainly their remoteness makes them that much more grateful for the compliment of a personal visit, and often that gratitude is shown by a scale of entertainment so lavish as to be almost embarrassing.

While such friendships can be initiated by visits, they are cemented by delivery of goods, particularly in times like these. In the early 1920's there was a popular song whose lyrics were: "You've got to kiss your mama every night or you can't kiss your mama at all—or she won't be home when you call". The little nugget of wisdom included in this song is quite obviously applicable to relations with foreign customers.

Unless you, Mr. Manufacturer are prepared to allocate a part of your production to the export market now even though you cannot supply the domestic market, you will find it mighty difficult to break in

Country	Is Import Permit Necessary?	How Is Exchange Obtained?	Local Selling Rate for Dollars for Imports?	Remarks
Brazil	Since July 26, 1945, Import Permit required for extensive list of specific goods; copy of Permit must be sent to United States exporter for consular visa. Validity 150 days; permit may be obtained by cable through importer if an order is unaccompanied by license.	(a) Import Permit implies allocation of Foreign Exchange upon clearance. Other goods receive Exchange through application to the Banco do Brasil (Export-Import Department).	Free Market . . . Cruzeiros 19.50 per \$1, plus 5% tax.	Exchange may be applied for prior to clearance, upon filing "bond" to produce customs documents. Used machinery imports require inspection certificate. Importers may purchase forward delivery exchange.
Chile	Yes. Import Permit valid for 12 months for the United States.	Through collecting bank which holds control documents until exchange is obtained. Import Permit authorizes purchase of foreign Exchange.	"Export draft" rate, in payment of specific essential imports: Pesos 25.10 per \$1. "Bancoado" or "D.P." rate, for all other imports: Pesos 31.10 per \$1.	Customs retains goods until import clearance and exchange permits are produced. A provisional Trade Agreement with the United States was signed July 30, 1945, for one year.
Colombia	Yes, subject to monthly quota allocations. (See last column.) Copy of written order must be attached to Import Permit application. (Import license good for one year.)	(a) On the strength of Import License, which carries right to Foreign Exchange. Customs manifest in order to secure exchange no longer required; instead B.L. commercial and consular invoice sufficient.	Rate for the 5 Import groups: Pesos 175.50 plus 1% tax and 5 centavos per dollar coffee tax, or a total of Pesos 182.25 per \$100.	Effective June 1, 1945, importations into Colombia divided into 5 groups for purpose of establishing monthly Import License quotas subject to various guarantee deposits. Import license must be sent to exporter for presentation to Consul at point of shipment with shipping documents.
Cuba	No.	Exchange Permit required; validity not limited.	Peso 1 per \$1, plus 1.10% exchange commission.	2% Public Works Tax is levied on all payments and transfers of funds abroad, with certain temporary exceptions.
India (c)	Yes. (Quotas for certain goods.)	(d) Through authorized banks.	Rupees 332.25 per \$100.	Imports can only be paid for in currency of country of origin of goods.
Mexico	No, except for artificial silk fibres and certain iron and steel products enumerated in the official Gazette of Sept. 29, 1945, which remain subject to import restrictions.	No exchange restrictions. Import Permit, where required, assures Foreign Exchange.	Mexican pesos 4.86 per \$1.	Monetary Stabilization Agreement between United States and Mexico extended till June 30, 1947. Importers may purchase forward delivery exchange against immediate deposit of Mexican peso equivalent.
Philippine Islands	Yes. (See last column.)	No exchange restrictions, but transfers require Foreign Funds Control approval in Manila, which is readily granted for bona-fide transactions.	Pesos 2 = \$1.	Effective Sept. 20, 1945, firm order must be submitted to F.E.A. in Manila for assignment of registry number for transmittal to American exporter; this is a prerequisite to application for export license where required and necessary for space allocation.
United Kingdom of Great Britain and Northern Ireland (c)	Yes, for most articles.	(d) With prior Import Permit and Exchange Permit.	£1 equals \$4.02½.	The British Defense (Finance) Regulations 1939 as amended are generally adhered to in the whole Sterling Area.
Union of South Africa (c)	No, except for goods requiring United States Export License, for which certificate of essentiality is still necessary.	(d) Through authorized banks.	South African £ = about \$4.00½.	
Venezuela	No, except for specific list of goods. (See last column.)	Through local banks, not depending upon arrival or clearance of goods. Import Permit where required carries right to Foreign Exchange.	Bolivares 3.35 per \$1.	Decree Sept. 15, 1945, established yearly import quotas for 11 Tariff Items; pending establishment of fixed quotas, these articles are subject to Import License. Import License number should be indicated on consular invoice. "To Order" shipments not permitted.

(a) A provisional deposit of the local currency equivalent may be made with the collecting bank; the relative merchandise is then cleared through customs. The application for exchange must be accompanied by the customs certificate indicating payment of custom duties on a bona fide importation.
 (c) Countries belonging to the BRITISH STERLING AREA, which, according to the British Defense (Finance) Regulations 1939, as amended October 19, 1944, now comprises the following territories, excluding Canada and Newfoundland: United Kingdom, any Dominion, any other part of the British Dominions, any British-mandated territory, any British Protectorate or protected States, Egypt, Anglo-Egyptian Sudan, Iraq, Iceland, and the Faroe Islands.
 (d) In line with the British Defense (Finance) Regulations, Empire countries have been authorized to require Permits for imports from non-sterling countries, which Permits automatically provide foreign exchange in cover.
 (e) Countries with which the United States has a Reciprocal Trade Treaty (Great Britain includes the British non-self-governing Colonial Empire and Newfoundland).
 (f) Depending upon current rate of exchange.

This table, excerpted from data compiled by Chase National Bank, gives essential import requirements for countries of major importance in the market before the war. Due to the rapidly changing situation present figures are unavailable

on established relations with other makers not only in this country but in Holland, England and other pre-war exporting countries as their capacity becomes built up in the coming recovery period.

The same principle applies to the design of the product. Exporting can not be carried on on the dumping principle that if the goods can not be sold in this country, they can literally be kicked off the continental shelf into the sea to be picked up by goods hungry importing firms and adapted as well as possible to local conditions, problems and desires.

Much thought must be given to the requirements of the foreign market at the time an exportable piece of apparatus is designed so that it can be used when sold. In

this connection it may be noted that the only important voltages and frequencies for which it is necessary to provide are 110 volts, 50 and 42 cycles, 220 volts 50 and 60 cycles and 230 volts 50 cycles. There are some others but they are not of sufficient commercial importance to justify design modifications. However at the time the original design for the American market is put on tracing cloth, it is no trick at all to inscribe on the vellum the necessary motor, transformer and resistance changes to make it possible later for specials for the export trade to come off the production line without the application of new engineering time.

Taste and custom in foreign countries also should receive con-

(Continued on page 126)

MARKETING - Now the Twin

By **MILLARD H. NEWTON***

An outline of basic factors in the next phase of the electronic industry

● At the very outset, let us get ourselves properly oriented for a 1946 view of electronic marketing. Try to keep away from economics, politics and other unfathomable factors in marketing. Recall that economics alone, or politics alone, never stopped the sale of a much-needed article. Labor, recently, has been more successful in doing so, but that's another story.

In 1932, when 4,500 banks were closed and ready cash was hard to get, selling continued at a furious pace in many lines. In one way or another, the buyer managed to buy what he was determined to get, provided the article was in production. However, shortages such as we have today were not the style during the bank moratorium.

Market planning essential

Assuming that the major obstacles of the radio-electronic industry will be removed or minimized shortly and that reconversion is waiting for its second wind, we will soon find the industry diving into the dual phase of production and marketing. But can we be sure that the two will be well planned and coordinated in the best traditions of marketing?

Probably not, if past experience in radio is any indication. Scant attention will be given to the grim lessons of earlier years when many good companies with well-engineered products went to the wall—not through any lack of engineering genius but through a weird misjudging of markets and marketing methods.

Most frequent among the explanations for receiverships, reorganizations and control by creditors, has been the plea of overproduction. In most cases, production was planned with great precision in cost, quality and volume but, as usual, the marketing

function was handicapped by strange mixtures of poor market estimates, wishfulness in planning and often faulty sales policies.

Such maltreatment of a vital sales function is hardly excusable; yet, on behalf of the electronic industry it must be acknowledged that there are no beaten paths; no clearly established policies, no well-defined channels of distribution.

Helps and hindrances

It must be recognized that war and war production are also partly responsible. They have expanded productive capacity and widened electronic markets without contributing anything to marketing machinery, methods or knowledge. This explanation, however, cannot long condone a lack of marketing yardsticks, a failure to do creative planning or a neglect to coordinate production and marketing.

Nor is there much point to the contention that the electronic industry has a specialized apparatus market; that it is different from radio receiver merchandising and other fields where standardized units are sold by the million. In some older industries that never have had anything else but an apparatus market, their products have had the benefit of sound

planning, plus much originality and pioneering. Product designs, output, sales policies, distributing methods and promotion plans have been based on market studies and all have been keyed together for the final purpose of marketing.

Basic principles needed

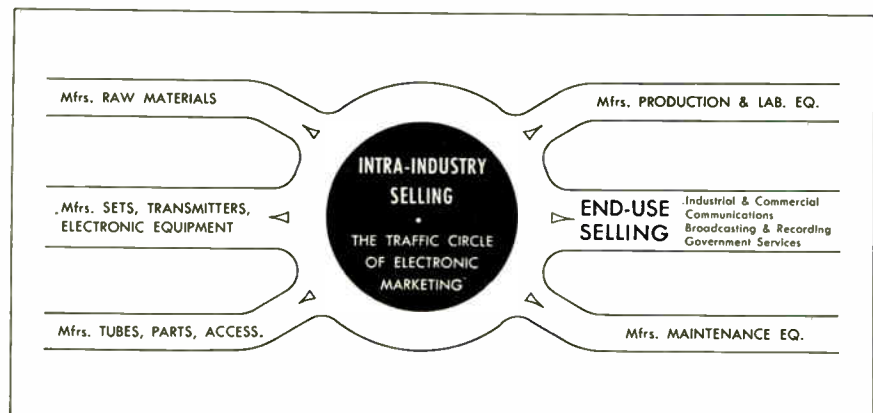
If we concede that marketing is the ultimate goal of all manufacturing and if we admit that the electronic industry is fundamentally an engineering business, there are several premises that could well be adopted as a preliminary to any marketing plan in this field.

1—Recognize that marketing is an indispensable part of any project; that it requires (and is worthy of) equal exactness in plan, method, facilities, personnel and execution.

2—Encourage the engineer to concern himself with marketing considerations in every move from the inception of the original idea to its eventual promotion by the advertising department and its use by the customer.

3—Retain the services of an advertising agency having a competent marketing research department and creative promotional ability.

Five groups of suppliers sell to one another before products emerge for end-use selling



*Marketing Counselor for Electronic Industries.

Problem With PRODUCTION

4—Gather all possible electronic marketing statistics and make sure that they are interpreted realistically.

5—Study the strengths and weaknesses of present marketing channels with an eye to the discovery of better ones.

6—Profit from the lessons learned in other fields where similar problems are found.

Marketing "kicked around"

Perhaps it will be said that these are old principles in a new dress; that no one disputes them. Yet they often get lost somewhere between the decision *what to make* and the natural impatience to start selling. Right there we have the first mistake in marketing—failure to adopt basic principles and stick to them. The above suggestions are six of the tenets that apply to all manufacturers in this field regardless of their special problems or circumstances. Through them we find out *where* and *how* to do our selling—something that should certainly precede any manufacturing program.

Now, while all manufacturers have certain principles in common, they are not all alike in their needs and methods. There may not be any relation between the sales work of a manufacturer who turns out a simple packaged item and another manufacturer who custom-builds a piece of industrial or communication equipment costing \$10,000.

Between these extremes there is a great variety of marketing requirements that each manufacturer much approach from the standpoint of his own individual situation but only *after* he has determined what that situation really is—again illustrating the importance of the utmost familiarity with the market in terms of size, location and peculiarities in buying habits.

To cite another contrast, there is not a great deal in common between the manufacturer of parts who wants to get the bulk of his volume by supplying the needs of a few big set builders, and the manufacturer of laboratory or test equipment who hopes to sell *all* of

the set builders and other groups, too.

Standard items vs. specialties

Those who make standard items for original equipment may not have a serious problem in market determination. All of the customers are known and quotations are based on definite quantities. Their principal problem is likely to be the selling of that market against stiff price competition.

The manufacturer who goes after the communications or industrial market usually has it departmentalized and operated by specialists. The prospects may be engaged in general industry, in broadcasting, marine, aircraft, police, railroad communication, etc. The sales department is up against the extreme in selective selling—diversified fields, widely scattered locations, specialized designs, high selling

cost and the necessity of frequent customer contact.

On the other hand, items such as photoelectric cells and relays, or complete units containing them, can be sold to a certain extent through electronic parts distributors. Nevertheless, the enterprising manufacturer will maintain engineering offices or Representatives who are engineers, in scores of cities. They will counsel the customer, steer him to the local distributor, direct him to the factory or even take the order on the spot.

The IRE "bee hive"

An excellent illustration of the complex and divergent methods used in electronic marketing was found in the last Midwinter meeting of the IRE in New York, where intra-industry marketing was seen at work. Engineer-salesmen of one

(Continued on page 132)

A Quiz to Emphasize Some of the Critical Differences in Marketing Plans

PRODUCT

- Is the need recognized or must it be created?
- Has the product any outstanding advantage over competing products?
- Can competitors match delivery, performance and price?
- What would you do if your strongest competitor surprised the field with a major improvement?

COMPANY AIMS

- Has a marketing goal been fixed?
- How do you know that the objective is reasonable and realizable?
- What is the greatest element of chance involved?
- Does the plan differentiate between the methods needed in marketing standard products and those needed in building to specifications?
- Has company strength been impaired by labor and price troubles?
- Is the company placing too much reliance on previous prestige?

MARKET

- Should a special market analysis be made?
- What data are needed and where obtainable?
- What share of the market can be expected?
- What is the alternative if buyers do not ask you to quote or bid?
- Is your marketing disturbed by federal price controls?
- Is the market menaced by government surplus selling?
- Will the replacement market ultimately exceed the initial market?

TYPE OF DISTRIBUTION

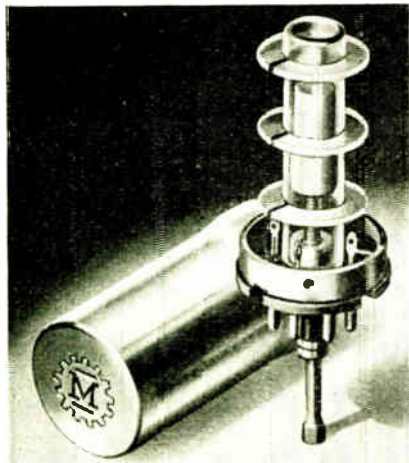
- Does the nature of the product dictate the type of distribution needed?
- Is the type of distribution influenced by the necessary qualifications or training of local personnel?
- Does the sales work require technical assistance to the customers?
- Can competitive distribution become superior?
- Local facilities needed?—office, display room, branch, warehouse, etc.?

PROMOTION

- How can the product best be promoted?
- How should the advertising appropriation be determined?
- Can a comprehensive prospect list be compiled?
- Can new uses for the product be found?

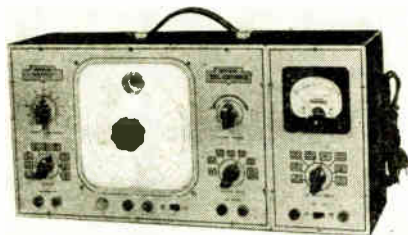
WHAT'S NEW—CHICAGO

Devices, products and materials seen at the Parts and Equipment Show



Tunable Coil Form

In addition to its pre-war products, which are now again available, the James Millen Mfg. Co., 150 Exchange St., Malden, Mass., has developed a series of "Designed for application" products, such as a 2 in. oscilloscope, transmitting condensers and a tunable coil form. The plug-in coil form is permeability tuned and suitable for use up to 35 mr.—Electronic Industries



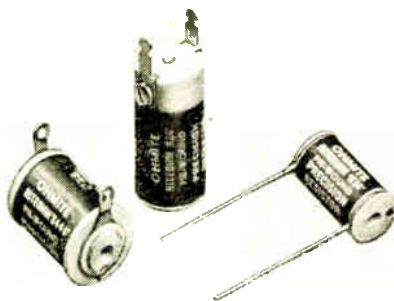
Test Unit

A new model of the Tel-Ohmike retains the features of the previous unit but in addition now includes a dc volt-milliammeter. The meter will measure voltages up to 1,500 v dc, and currents to 50 ma dc. Capacities between 0.000010 to 2,000 mfd and dc resistance values up to 5 megohms can be checked. Power factor and leakage currents are read directly. Made by Sprague Products Co., North Adams, Mass.—Electronic Industries



Electronic Switch

A new electronic switch designed for special electrical studies of wave form, phase, frequency relationship and amplitude comparisons is being made by the Electronics Dept., General Electric Co., Syracuse, N. Y. Operating on any sweep frequency of from 10 cps to 12,000 cps, continuously variable, it has an amplifier frequency response of 4 cps to 450 kc flat within 3 db.—Electronic Industries



Precision Resistors

Series 82, 83 and 84 Riteohm precision resistors are being exhibited by Ohmite Mfg. Co., 4835 Flournoy St., Chicago 44, Ill. These three series are pie-wound to 1% accuracy. Vacuum impregnation with a special varnish provides insulation and protection against humidity.—Electronic Industries

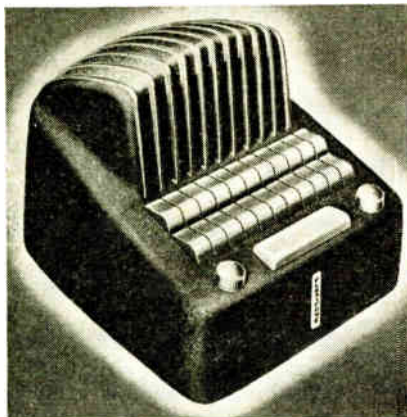


Photo-Flash Capacitor

A capacitor having high energy storage and small size for super-speed photo-flash work has been developed by Tobe Deutschmann Corp., Canton, Mass. The unit has a storage capacity of 100 watt-seconds at a peak rating of 2500 volts dc and is especially designed for portable speed-flash units for indoor and outdoor service. Performance tests indicate an expected life of at least 10,000 charge-discharge cycles at peak rating.—Electronic Industries

Portable Induction Solderer

Marion Electrical Instrument Co., Slark Street Gate, Manchester, N. H., has a portable induction soldering unit consisting of a self-excited rf power oscillator operating at 450 kc. It consumes approximately 775 watts for full power output at 115 v., 60 cycles ac.—Electronic Industries



Intercom System

Operadio Mfg. Co., St. Charles, Ill., has developed the "Flexiphone" intercommunications system consisting of a master station and six, ten or twenty remote stations. The equipment is housed in a functionally styled die-cast metal casing and uses a piano type keyboard as station selector.—Electronic Industries

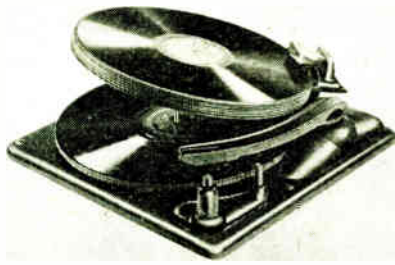


Comparison Bridge

For precision and production testing of resistors, capacitors and inductors Freed Transformer Co., 72 Spring St., New York 12, has designed the No. 1010 comparison and limit bridge. The unit is operated from the ac power line and has three testing frequencies available: 50 or 60 cps, taken from the line, 1000 and 10,000 cps, generated by an oscillator. The percentage difference between the unknown and the standard can be read of on two ranges, a 10% range and a 20% range.—Electronic Industries

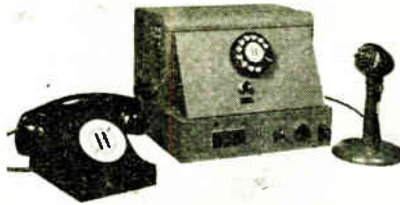
Vacuum Tubes

A miniature gas-filled phototube using a S3 photosurface is a new development of National Union Radio Corp., 15 Washington St., Newark 2, N. J. Other miniature tube types are rectifiers, amplifiers and converters. Also shown is an ionization gage tube a UHF power triode, a microwave coaxial triode, a magnetically focused radia beam tube and for television set testing, a 5 in. picture signal generator.—Electronic Industries



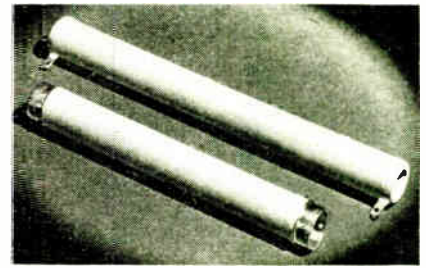
Record Changer

Webster Chicago, 5610 Bloomingdale Ave., Chicago, has a series of record changers, among them the model 56, which was originally developed for the armed forces. The changer accommodates twelve 10 in. or ten 12 in. records at one loading and has a fast change cycle of approximately 4 seconds. Automatic shut-off after the last record is provided.—Electronic Industries



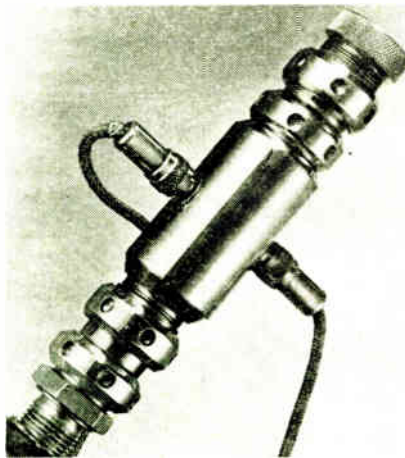
Dial Radio Telephone

A new selective signaling device which will select any one or group of desired stations for radio network communication has been developed by Hammarlund Mfg. Co., Inc., 460 West 34th St., New York 1, N. Y. Called stations are connected and message starts in 3½ sec. Eighty-four stations or groups of stations can be handled with one signaling tone. New VHF-UHF variable capacitors using pyrex glass ball bearings are also displayed.—Electronic Industries



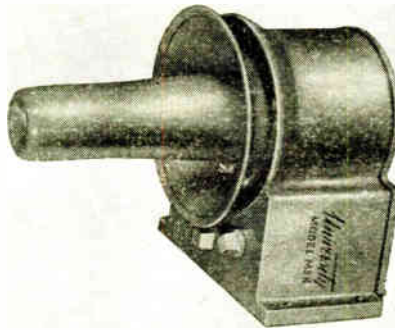
Enameled Resistors

Ward Leonard Electric Co., Mount Vernon, N. Y., is exhibiting Vitrohm "M" enameled resistors, which are capable of operating continuously at 275° C. They can be overloaded 10 times the rated value momentarily and will withstand over 9 cycles of salt water immersion. Available in ferrule, tab or screw terminal types, the units have a resistance tolerance of ±5% of specified values over 1 ohm.—Electronic Industries



Pressure Measurement

Static and dynamic pressures in enclosed chambers can be measured electronically by a new unit developed by Electro Products Laboratories, 549 W. Randolph St., Chicago 6, Ill. Pressure variations are observed on either a cathode-ray or direct writing oscillograph. A wide range of interchangeable diaphragms and mountings is available.—Electronic Industries



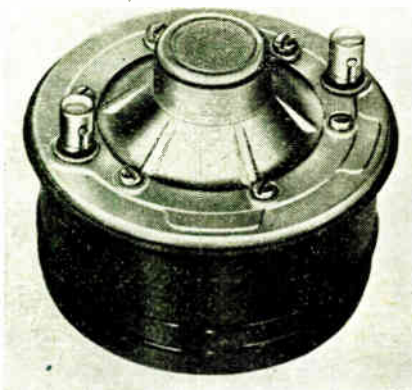
Marine Speaker

A submergence proof marine speaker of the radial reflex type with a non-directional 360° projection pattern has been developed by University Laboratories, 225 Varick St., New York 14. Used by the navy during the war, this speaker will operate under any condition of high humidity. It has a slightly rising frequency characteristic from 250 to 6000 cycles and a power handling capacity of 15 watts.—Electronic Industries



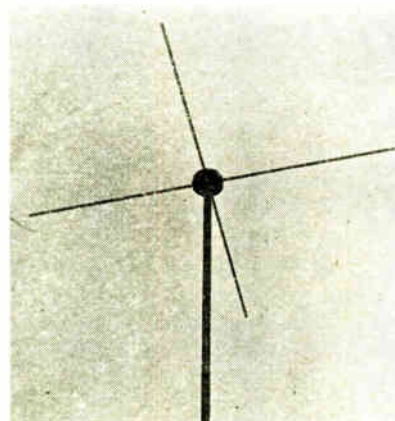
Multi-Tester

Laboratory and production testing may be handled on the master tester developed by Reiner Electronics Co., 152 W. 25th St., New York. Model 456 can be used as insulation tester, capacity meter, ohmmeter, ac and dc voltmeter, ac and dc ammeter, and as an impedance-inductance meter. The frequency range with special hf probe is up to 500 mc at an input capacity of 1 mmf.—Electronic Industries



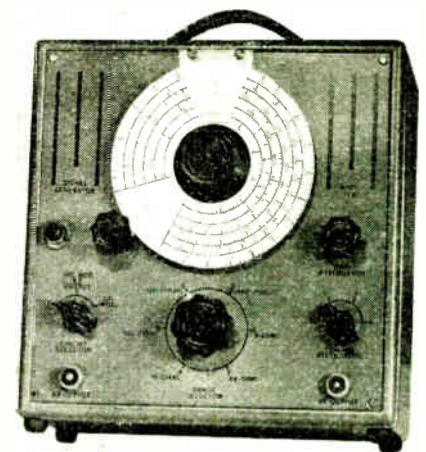
Reproducer Unit

Hermetically sealed, new design driver type reproducers are being made by Atlas Sound Corp., 1443 39th St., Brooklyn 18, N. Y. These units use a new laminated phenolic diaphragm with all parts bonded together by thermo-setting cement. Will handle 25 w of input power. The response is 80 to 6,000 cycles, with an electro acoustic sensitivity of 181.—Electronic Industries



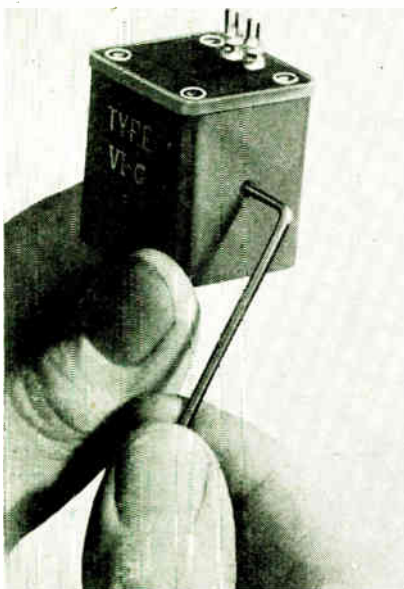
Dual-Purpose FM Antenna

The Workshop Associates, 66 Needham St., Newton Highlands, Mass., are exhibiting a dual-purpose FM antenna supplied in two kits. One provides elements for a non-directional FM antenna for rural listeners. A second kit will convert the non-directional antenna into a high-gain directional array by forming a dipole with reflector and director. Another interesting development is a new stand-off insulator for the 300 ohm parallel television lead-in line. The insulator is molded of weatherproof, plastic material and may be fastened with a single wood screw.—Electronic Industries



Signal Generator

A signal generator covering the range from 75 kc to 50 mc in fundamental frequencies is one of the new products of Triplett Electrical Instrument Co., Bluffton, Ohio. Thirty per cent modulation at 400 cps is provided. Range selection is obtained by means of a six-position turret type coil switch. The instrument is voltage regulated at 115 volts, 50-60 cycles ac.—Electronic Industries



Variable Inductor

A tunable inductor for peaked amplifiers, filters, etc., has been developed by United Transformer Co., 150 Varick St., New York 13. Housed in a die-cast case, it weighs about 5 oz. The inductor permits a variation of inductance values from +90% to -50% by means of a set screw located on one of the sides.—Electronic Industries



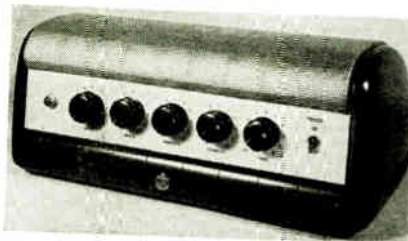
Unidirectional Microphone

Using a supplementary phase shifting diaphragm, Electro-Voice, Inc., 1239 South Bend Ave., South Bend 24, Ind., has a new cardioid unidirectional crystal microphone. Sound from unwanted area is phase reversed, slowed up and neutralizes the sound pressure on the face of the actuating diaphragm. Sound sources in front of the microphone are fully reproduced. This model also has an adjustment for changing response from wide range substantially flat to wide range rising characteristic on the hf end.—Electronic Industries



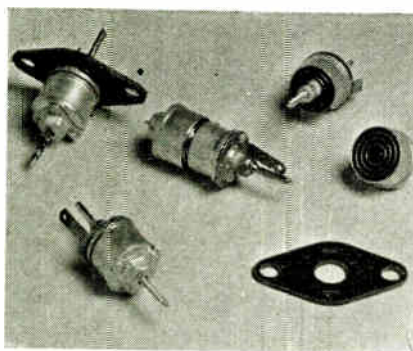
Multi-Tester

The model 424 volt-ohm-milliammeter made by the Radio City Products Co., 127 West 26th St., New York, has a three-inch meter with a sensitivity of 2500 ohms per volt and a movement of 400 microamperes. The ac-dc voltmeter sensitivity is 1000 ohms per volt. Voltage ranges up to 1000 volts, current ranges to 10 amperes and ohmmeter ranges to 10 megohms are provided. Db ranges are also incorporated.—Electronic Industries



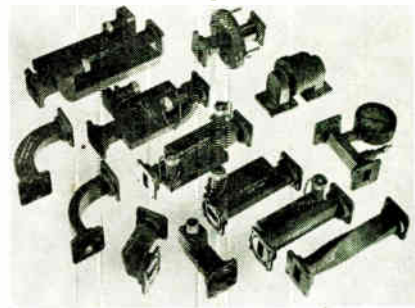
Packaged Sound

A 25-watt amplifier weighing 30 lbs. is a new development of RCA-Victor Division, Camden, N. J. These packaged sound kits are designed to provide low cost sound to classrooms, small night clubs, retail stores, etc. The line will include a complete line of microphones, amplifiers, speakers, baffles, horns, record players, disc recorders and portable sound systems.—Electronic Industries



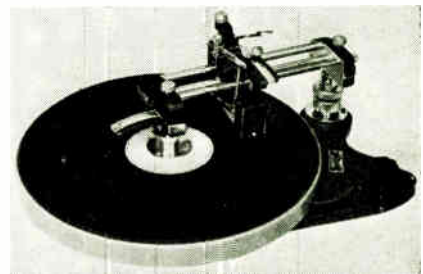
High-Q Trimmer Capacitors

An air-dielectric capacitor having unusually high "Q" up to 500 mc and possessing extraordinary mechanical and electrical stability has been developed by the Philips works in Holland. It is being distributed in America by the McMurdo Silver Co., Hartford, Conn. The trimmer range is 3-30 mmf with an insulation resistance above 10,000 megohms. The rotor position once set is permanent and independent of vibration.—Electronic Industries



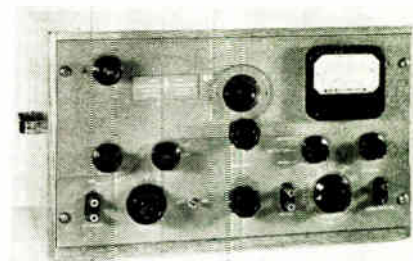
Microwave Components

In addition to the complete, packaged rf radar unit, DeMornay Budd, Inc., 475 Grand Concourse, New York 51, N. Y., are exhibiting standard wave guide components and test equipment. Frequencies covered are 4,000 to 9,600 mc in three bands and 23,000 to 27,000 mc.—Electronic Industries



Recording Equipment

Rek-O-Cut Co., 146 Grand St., New York 13, has a new "Master-Pro" recording unit. A slide mechanism on the cutter mount allows the operator to interchange the cutting head for most commercial makes of magnetic or crystal cutters. The standard feed screw cuts 120 lines per inch, but screws from 105 to 120 lines per in. outside-in or inside-out are available.—Electronic Industries



Distortion Analyzer

A distortion analyzer using resistance-tuned circuits in conjunction with an amplifier is being manufactured by Hewlett-Packard Inc., Palo Alto, Cal. Capable of measuring distortion at any frequency between 20 and 20,000 cps. with an accuracy of ± 3%, it permits measurements directly from a modulated rf carrier. Noise measurements as small as 100 microvolts may also be made. The instrument operates from a 115 v., 50-60 cycle ac power source and consumes 90 watts.—Electronic Industries

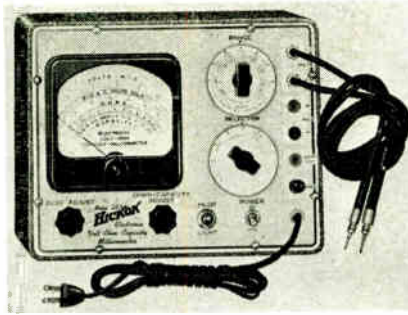
Varnish Insulation

A new varnish impregnant, Turbotuff, has such toughness that it resists cracking under almost any angle of bend or duration of twisting. This varnish has high stabilized dielectric values, greater resistance to elevated temperatures and a low moisture absorption factor. Made by William Brand and Co., 276 Fourth Ave., New York 10, N. Y.—Electronic Industries



Communications Receiver

Covering a frequency range of 0.55 to 44 mc in four bands, the new model S-40 made by Halcrafters Co., 2611 Indiana Ave., Chicago 16, Ill., has many features. Separate electrical bandsread with inertia flywheel tuning, temperature compensated hf oscillator, automatic noise limiter, beat frequency oscillator and separate rf and af gain controls help make this a versatile receiver. Normal positions of standard broadcast reception are designated in red on the tuning dial for family use.—Electronic Industries



Volt-Ohm-Capacitance Milliammeter

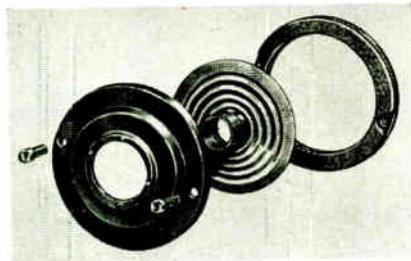
A test instrument designed to accurately measure wide ranges of capacitance, resistance, ac and dc voltages and currents is being manufactured at Hickok Electrical Instrument Co., 10528 Dupont Ave., Cleveland 8, Ohio. The tester also provides for inductance measurements and is accurate up to 5 mc.—Electronic Industries



Sealed Resistors

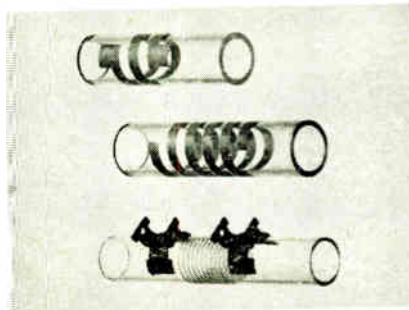
Made with the same precision as their standard Tru-tolerance units, Madison Electrical Products Corp., 78 Main St., Madison, N. J., are now manufacturing a new hermetically sealed resistor. These components are permanently sealed with a ceramic to metal bond after all moisture is removed by a special process.

A rigid self-sustaining polystyrene air loop for the broadcast range is also new. Distributed capacity is 11 mmf. Loops can be wound to 300 "Q" and include a primary or short wave trap.—Electronic Industries



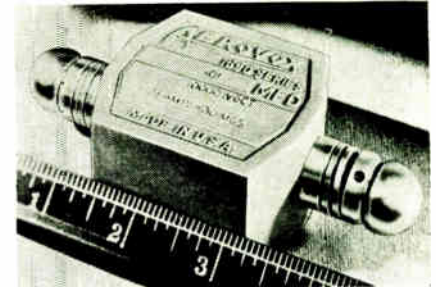
PM Speakers

All cone reproducers now being made by Quam-Nichols Co., Cottage Grove Ave. & 33rd Place, Chicago, Ill., feature rim clamping of the cone. The spider is not glued or otherwise permanently fastened to the basket. Quick and accurate centering of the voice coil is accomplished by loosening two machine screws in the clamping ring assembly.—Electronic Industries



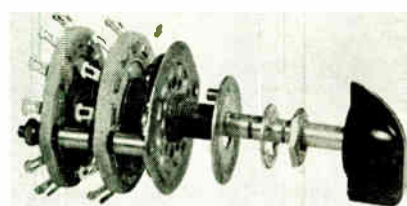
Metallized Glass

Corning Glass Works, Corning, N. Y., is showing many uses for metallized glass. Relay covers, instrument windows and various size glass tubes are provided for hermetically sealed enclosures. A simple soldering operation is used for sealing. Coil forms with metal tabs for regular coil winding or special metallized windings for high frequencies are available.—Electronic Industries



UHF Mica Capacitor

Designed for low-loss operation on ultra-high frequencies, series 1690 molded-in-bakelite mica capacitors developed by Aerovox Corp., New Bedford, Mass., have low rf impedance. All conducting members are silverplated to minimize skin resistance. Units are available in ratings up to 10,000 volts dc with capacitance values up to .001 mfd.—Electronic Industries



Automotive Antenna

ICA "Rocker," "Side-Cowl" and "Uni-Mount" car antennas are being displayed by the Insuline Corp. of America, Long Island City, N. Y. In addition precision made phone jacks of new design are exhibited. The spring-members are made of silver-plated phosphor bronze to minimize tension fatigue.—Electronic Industries

Play-back Needle

In addition to sapphire and ruby tipped needles, Duotone Co., Inc., 799 Broadway, New York City, is exhibiting a diamond tipped needle. Each unit is precision ground and the radius at the diamond tip is held to a tolerance of 0.0001 in. These diamond tipped needles were developed for broadcast use and the replaying of scarce "collector's item" records.—Electronic Industries

Selector Switch

A new ceramic insulated selection switch is being shown by P. R. Mallory & Co., Indianapolis 6, Ind. Developed for high frequency circuits, it has minimum rf losses and moisture absorption. Low resistance self-cleaning contacts are used. Unit combinations, ranging from one section with six positions to three sections with eleven positions, are available.—Electronic Industries



25 Watt Amplifier

Using 6L6 tubes in the output stage, a new high fidelity amplifier made by Mark Simpson Mfg. Co., 194 W. 4th St., New York 14, N. Y., has less than 5% RMS harmonic content. Gain is approximately 77 db with a frequency response between 30 and 15,000 cycles flat within plus or minus 1 1/2 db. Either bass or treble attenuation or boost is possible without change of middle register response.—Electronic Industries

Miniature Tetrode

One of a complete series of miniature tubes, a new filamentary-type beam tetrode is now available for VHF mobile communications equipment. The 6 volt filament is instant-heating and eliminates standby current. Made by Hytron Radio & Electronics Corp., 76 Lafayette St., Salem, Mass., for transmitter use, this new 2E30 tube uses 250 v. on the plate and screen. Plate dissipation is 10 w. Hytron also has eleven new ac/dc miniatures especially designed for compact receiver and electronic equipment.—Electronic Industries



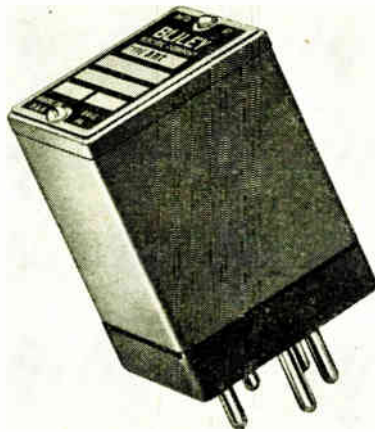
Communications Receiver

A communications receiver in the medium price class is being manufactured by Radio Mfg. Engineers, Inc., Peoria 6, Ill. The receiver has four tuning ranges, 540 kc to 44 mc., and bandsread scale, one stage of preselection, automatic noise limiter, standby switch and BFO switch control. It uses 8 tubes.—Electronic Industries



Spray Gun Kit

A felt flock kit including a hand operated air-spray gun provides a quick and durable surface for cabinet and equipment finishing. The flock particles are propelled at high velocity and embed themselves in a previously applied undercoat. Made by Walter L. Schott Co., Beverly Hills, Cal., this type of finish is available in 8 colors.—Electronic Industries



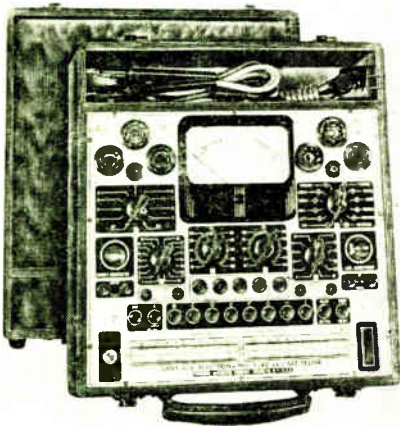
Crystal Unit

Engineered for service in the VHF bands, a new crystal unit with built-in heater is being shown by Bliley Electric Co., Erie, Pa. It is available for all frequencies from 3,500 to 11,000 kc. Efficient frequency multiplication can be obtained by the use of a tuned screen, tuned plate oscillator circuit. The built-in heater permits over-all frequency tolerances of 0.005% plus or minus.—Electronic Industries



Phono-P.A. System

Designed for high quality sound coverage with compact portability, a new 25 watt phonograph-public address combination is being made by Bell Sound Systems, Inc., 1183 Essex Ave., Columbus 3, Ohio. The dual speed turntable will take up to 16 in. transcriptions. Individual bass, treble and volume controls are provided. The speaker is a 12 in. PM heavy duty unit.—Electronic Industries



Tube and Set Tester

With a convenient layout of control dials and switches, the Series 954 tube and set tester made by Precision Apparatus Co., Elmhurst, L. I., N. Y., is especially designed for use in both bench production and portable testing. Meter sensitivity is 20,000 ohms per volt dc and reads up to 6,000 volts.—Electronic Industries

Record Changers

Three models of phonograph record changers are being shown by V-M Corp., Benton Harbor, Mich., each using a different type of release mechanism. One unit is completely jam-proof and will play 10 and 12 in. records intermixed. Cycling time from one record to the next is less than 4 sec. A new type of tone arm eliminates distortion and resonance.—Electronic Industries

Car Antenna

An automobile antenna for mounting in either top cowl or top fender positions is being made by Rad-El-Co. Mfg. Co., 6300 Euclid Ave., Cleveland 3, Ohio. The mast is adjustable through a 25° angle in any direction. The radar-type lead cable uses poly-ethylene as an insulator. "Q" is higher than 500 and the capacity is less than 1 mmf per inch.—Electronic Industries

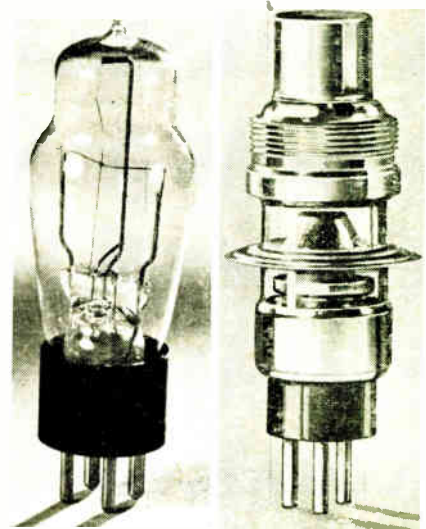
Thermocouple Tube

A thermocouple tube for direct microammeter measurement of vacuum and low gas pressures has been designed by Sylvania Electric Products, Electronics Div. Boston 15, Mass. Pressures of 10⁻¹ to 10⁻⁵ mm can be recorded with an accuracy of plus or minus 5%. Operating on a 3-volt battery and resistance circuit the tube has a filament resistance of 3 ohms, thermocouple resistance 5 ohms, filament current 125 ma. and thermocouple current 250 microamps.—Electronic Industries. Below, left.



Metal Film Resistor

A new resistor, having the accuracy of a wire wound unit, but using a metal film, has been developed by Continental Carbon Inc., 13900 Lorain Ave., Cleveland 11, Ohio. No carbon is used in these components, the metallic resistance film being formed on the surface of a low loss ceramic tube by a patented pyrochemical process. Low noise and high resistance stability are characteristics of this new resistor.—Electronic Industries

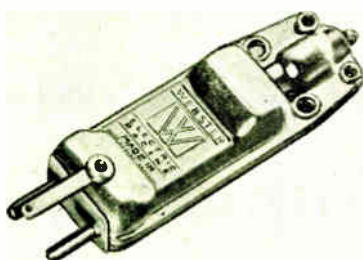


Tube Adapters

An additional line of "Sockette" radio tube adapters to be used in conjunction with miniature tubes has been bought by J.F.D. Mfg. Co., 4109-4123 Ft. Hamilton Parkway, Brooklyn 19, N. Y. The adapters permit the substitution of available miniature tubes for hard-to-get or unobtainable standard tube types. Thirty-five adapters suitable for most popular tube types are available.—Electronic Industries

Reflex Klyston

A new reflex klyston designed for operation at wavelength between 6 and 7 cm has been developed by the Research Laboratories of Sylvania Electric Products, Inc., Flushing, N. Y., and will be shown in Chicago. The tube design features "quick change" by means of a threaded disc-scal electrode. 70 milliwatts output at 7.0 cm.—Electronic Industries. Above, right.



Pick-up Cartridges

The new crystal pick-up cartridges being shown by Webster Electric Co., Racine, Wis., are made in a wide range of varied mechanical and electrical characteristics. The units are cased in either stamped brass or aluminum halfshells or die-cast aluminum and zinc halfshells. Some models are designed for sharp cut-off at the high frequencies, others have an exceptionally wide-range response and one unit has a high voltage output for use with low-gain amplification record-playing equipment.—Electronic Industries

Automobile Aerials

New models of automobile aerials are being displayed by Radiart Corp., 3571 West 62nd St., Cleveland 2, Ohio. The de luxe types include rods made of antimonial admiralty brass with a static muffler ball on top. Fittings and mounts are provided for correct installations on car. Other features are all metal anti-rattlers and plasti-loom leads.—Electronic Industries

RADIO STATIONS

A directory of Standard AM, FM and Television broadcast stations with their chief engineers

STANDARD BROADCAST

ALABAMA

Radio Station and Address	Chief Engineer
WHMA—14th & Noble, Anniston	J. Hudson
WJLD—1800 3rd N., Bessemer	Rufus Jones, Jr.
WAPI—Protec. Life Bldg., Birmingham	N. S. Hurley
WBRG—2nd at 18th, Birmingham	G. P. Hamann
WSGN—Box 2553, Birmingham	Gordon F. Bishop
WMSL—511 Bank, Decatur	J. V. Roser
WAGF—204½ E. Amin, Dothan	J. T. Hubbard
WJBY—108 Broad, Gadsden	Wm. Pigg
WBHP—318 W. Clinton, Huntsville	John Garrison
WALA—106 St. Joseph, Mobile	R. B. Hurley
WMOB—600 St. Louis, Mobile	T. L. Greenwood
WCOV—Exchange Hotel, Montgomery	W. D. Weatherly
WSFA—Jefferson Davis Hotel, Montgomery	C. Shelkofsky
WLAY—Box 230, Muscle Shoals	Lynn V. McMoran
WJHO—1400 Auburn, Opelika	John B. Venters
WHBB—209 Washington, Selma	Thos. F. Kelly, Jr.
WFEW—527 N. B'way, Sylacauga	J. S. Stowers, Jr.
WHTB—122 S. Court, Talladega	Julius C. Vessels
WJRD—First Nat'l Bank, Tuscaloosa	J. W. Arendale

ARIZONA

KWJB—Globe	Herbert Hartman
KSUN—Bisbee Sta., Lowell	Wm. Scharlach
KOY—836 N. Central, Phoenix	J. L. Sublett
KPHO—Adams Hotel, Phoenix	Louis Halpern
KTAR—111 Heard Bldg., Phoenix	Arthur C. Anderson
KYCA—E. Garley, Prescott	Geo. Eitel
KGLU—Safford	H. Hartman
KTUC—900 E. B'way, Tucson	Clifford Livingston
KVOA—Tucson	Ray H. Holsclaw
KYUM—1901 1st, Yuma	L. Wheeler

ARKANSAS

KLCN—Hotel Noble, Blytheville	R. Conner
KELD—Country Club, El Dorado	A. W. Hearin
KFPW—1213 Garrison, Ft. Smith	J. M. Van Horn
KFFA—215 York, Helena	A. P. Decker
KTHS—135 Benton, Hot Springs	Cecil Sutt
KWFC—Hot Springs	Earl Butler
KBTM—Jonesboro	J. E. Hitt
KARK—112 E. Capitol, Little Rock	Dan Winn
KGH—Union Life Bldg., Little Rock	B. Vandusen
KLBA—Gazette Bldg., Little Rock	K. F. Tracy
KOTN—505½ Main, Pine Bluff	B. J. Parrish
KUOA—Siloam Springs	Kenneth Maxwell

CALIFORNIA

KERN—Elks Club Bldg., Bakersfield	L. E. Shatto
KPMC—Box 1709, Bakersfield	L. P. Jarvis
KRE—601 Ashby, Berkeley	P. C. McKernan
KHSL—336 B'way, Chico	R. Pope
KXO—Box 140, El Centro	L. Bellwood
KIEM—Box 1021, Eureka	A. E. Olson
KARM—1333 Van Ness, Fresno	R. M. Dorothy
KFRE—Patterson Bldg., Fresno	H. R. Brown
KMJ—1559 Van Ness, Fresno	Wm. Wallace
KIEV—102 N. Glendale, Glendale	V. Schumann
KFOX—220 E. Anaheim, Long Beach	L. W. McDowell
KGER—435 Pine, Long Beach	R. Oakley
KECA—1440 N. Highland, Los Angeles	T. B. Palmer
KFAC—645 S. Mariposa, Los Angeles	Calvin J. Smith
KFI—141 N. V., Los Ang.	C. W. Mason, H. L. Blatterman
KFSG—1100 Glendale, Los Angeles	C. H. Haas
KFVD—338 S. Western, Los Angeles	J. Fredericks
KFWB—5833 Fernwood, Hollywood	H. Myers
KGFJ—6314 Sunset, Hollywood	H. Olmstead
KHJ—5515 Melrose, Los Angeles	F. M. Kennedy
KMPC—5939 Sunset, Hollywood	L. C. Sigmon
KNX—6121 Sunset, Los Angeles	L. H. Bowman
KRKO—541 S. Spring, Los Angeles	W. O. Freitag
KMYC—Box 631, Marysville	J. D. Carroll
KYOS—Box 717, Merced	Malcolm R. Beavers
KTRB—Box 593, Modesto	W. H. Bates, Jr.
KDON—275 Pearl, Monterey	Omer N. Wright
KLX—13 & Franklin, Oakland	Roswell Smith
KRWB—Radio Center Bldg., Oakland	C. E. Downey
KWBR—327 21st, Oakland	F. Wellington Morse
KCMJ—Box KK, Palm Springs	Donald C. McBain
KXLA—1401 S. Oak Knoll, Pasadena	J. Reeder
KPPC—585 E. Colorado, Pasadena	N. V. Parsons
KWKW—425 E. Green, Pasadena	P. Spargo
KVCV—Redding	Russ Pope
KPRO—3401 Russell, Riverside	S. Reynolds
KCRA—10th & Jay, Sacramento	M. D. Myers
KFBK—708 Eye, Sacramento	Stam Srone
KRDY—Hotel Sacramento, Sacramento	H. Martineau

Radio Station and Address	Chief Engineer
KXOA—1617 30th, Sacramento	H. N. Black
KFXM—512 5th, San Bernardino	Geo. W. Ewing
KFMB—1375 Pacific, San Diego	Caleb Frisk
KFSD—326 B'way, San Diego	R. L. Gartner
KGB—1017 1st, San Diego	Wm. G. Collins
KFRG—1000 Van Ness, San Francisco	J. J. McArdle
KGO—420 Taylor, San Francisco	A. E. Evans
KJBS—1470 Pine, San Francisco	Win. Nielson
KPO—Taylor & O'Farrell, San Francisco	Curtis D. Peek
KSAN—1355 Market, San Francisco	N. J. Patterson
KYFO—Hopkins Hotel, San Francisco	Royal V. Howard
KFA—Hearst Bldg., San Francisco	Paul C. Schulz
KQW—89 E. San Antonio, San Jose	Kenneth Owen
KVEC—Mt. View & Hill, San Luis Obispo	Earle Travis
KVEB—206 N. Main, Santa Ana	Wallace S. Wiggins
KDB—1309 State, Santa Barbara	Wm. C. Buckley
KTMS—Guerra Plaza, Santa Barbara	A. Nieolay
KRSO—425 Mendocino, Santa Rosa	H. S. McCauley
KGDM—517 E. Market, Stockton	M. B. Greene
KWJ—Hotel Wolf, Stockton	Russell Bennett
KCOK—Box 873, Tulare	Sheldon Anderson
KTKC—Box 511, Visalia	Bert Williamson
KHUB—Atkinson Lane, Watsonville	Geo. F. Kenville

COLORADO

KGW—Alamosa	Geo. Kettle
KVOR—Antlers Hotel, Colorado Springs	H. C. Strang
KEFL—Albany Hotel, Denver	Tom Atherstone
KLZ—Shirley-Savoy Hotel, Denver	H. Wehrman
KMYR—1626 Stout, Denver	Glen James
KOA—1625 California, Denver	R. H. Owen
KPOF—1845 Champa, Denver	Paul H. Schissler
KVOD—Midland Savings Bldg., Denver	Wm. D. Pyle
KIUP—2800 Main, Durango	John L. Antie
KFXJ—Box 30, Grand Junction	D. E. Towne
KFKA—620 8th, Greeley	Ray E. Smith
KOKO—La Junta	L. E. Wilson
KGHF—304 N. Main, Pueblo	Willis C. Shanks
KGEK—Fleming Rd., Sterling	E. G. Beebler

CONNECTICUT

WICC—Stratfield Hotel, Bridgeport	Geo. Keich
WNAB—991 Broad, Bridgeport	V. DeLaurentis
WDRG—750 Main, Hartford	Italo Martino
WHTD—54 Pratt, Hartford	Rogers B. Holt
WTHD—555 Asylum, Hartford	Chas. S. Masini
WTTG—26 Grove, Hartford	H. D. Taylor
WELI—221 Orange, New Haven	Fred King
WHNC—1110 Chapel, New Haven	V. DeLaurentis
WNLC—281 State, New London	Gerald J. Morey
WSTC—270 Atlantic, Stamford	Edward L. Markman
WATR—171 Grand, Waterbury	Harold Thomas
WBRY—76 Grand, Waterbury	F. B. Hayes

DELAWARE

WDEL—10th & King, Wilmington	J. E. Mathiot
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DISTRICT OF COLUMBIA

W'NX—8th & Eye N. W., Washington	Ralph E. Camon, Jr.
WMAL—724 14th N. W., Washington	Dan Hunter
WOL—1627 K. N. W., Washington	Harold Reed
WRC—724 14th N. W., Washington	A. E. Johnson
WTOP—Earle Bldg., Washington	Clyde M. Hunt
WWDC—1000 Conn. N. W., Washington	Ross H. Beville

FLORIDA

WMFJ—126 Magnolia, Daytona Beach	W. Wright Esch
W'NK—54 E. 1st, Fort Myers	F. A. Scott
WRUF—Gainesville	Palmer H. Craig
WJAX—1 Broadcastr, Jacksonville	John T. Hopkins III
WJHP—500 Laura, Jacksonville	B. Haysford
WMBR—118 W. Adams, Jacksonville	E. B. Vordermark
WPDA—Gulf Life Bldg., Jacksonville	Jas. R. Donovan
WKWF—Stock Island, Key West	H. G. Scholz
WLAK—Box 1211, Lakeland	Wm. P. Lee
WGBS—1605 Biscayne, Miami	Ernie Johnson
WIOD—600 Biscayne, Miami	M. C. Scott, Jr.
WQAM—Box 3741, Miami	Earl W. Lewis
WKAT—1759 Bay Rd., Miami Beach	Arthur P. Smith
WTMC—1 Broadcastr, Ocala	Don Richardson
WDBD—563 N. Orange, Orlando	J. E. Yarbrough
WWPG—So. Ocean, Palm Beach	Clyde L. Walkden
WDLF—Beach Drive & Mercer, Panama City	Elmer Scott

Radio Station and Address	Chief Engineer
WCOA—Box 1669, Pensacola	Bert Mead
WFOY—F't'n of Youth Pk., St. Augustine	John E. Bernhard
WSUN—Box 240, St. Petersburg	Louis J. Link
WTSP—Times Bldg., St. Petersburg	Wm. D. Mangold
WSPB—Box 1110, Sarasota	James E. Grant
WTAL—Box 989, Tallahassee	Wm. A. Snowden
WDAE—112 N. Franklin, Tampa	W. P. Moore
WFLA—Seminole Bldg., Tampa	Jos. H. Mitchell
WJNO—1500 N. Flagler, W. Palm Beach	Otis C. Wright

GEORGIA

WALB—Albany Theatre Arcade Bldg., Albany	B. Alford
WGPC—127½ N. Jackson, Albany	Albert Timms
WGAU—Bobbin Mill, Athens	W. J. Evans
WAGA—Western Union Bldg., Atlanta	A. L. Brown
WATL—26 Cain N. W. Atlanta	A. P. Roberts
WGST—Forsyth Bldg., Atlanta	Ben Ackerman
WSB—Biltmore Hotel, Atlanta	C. F. Daugherty
WGAC—Augusta	Jack Jopling
WRDW—8th & Broad, Augusta	H. Aderhold
WMOG—Brunswick	Kenneth E. White
WGAA—W. Theatre Bldg., Cedartown	Luther W. Martin
WDAK—1028 B'way, Columbus	DeForrest Layton, Jr.
WRBL—1420 2nd, Columbus	Jos. A. Gamble
WJM—20th & B. Cordele	B. B. Broughton
WBLJ—111 S. Pentz, Dalton	J. S. Andrews
WMLT—Box 604, Dublin	J. B. Bononis
WGGA—Box 654, Gainesville	C. M. Callcott
WLAG—303 Broome, LaGrange	Jas. M. McKay
WBML—First Nat. Bank Bldg., Macon	H. S. Goodrich
WMAZ—Bankers Ins. Bldg., Macon	G. P. Rankin, Jr.
WNEX—Bibb Bldg., Macon	Ambrose Kibler
WMGA—Box 310, Moultrie	James M. Wilder
WRGA—Nat. City Bank Bldg., Rome	C. C. Williams
WSAV—Liberty Bank Bldg., Savannah	M. E. Thompson
WTOG—516 Abercorn, Savannah	Reeve Owen
WPAX—117 Remington, Thomasville	Jas. W. Poole
WRLC—Prather Bridge, Toccoa	R. R. Stoker, Jr.
WGOV—E. Park, Valdosta	L. C. McCall
WAYX—620 Plant, Waycross	J. J. Tobola
WRLD—Tyler Hotel, West Point	Dige Bishop

IDAHO

KIDO—Hotel Boise, Boise	Jas. Johtz
KID—Park & C. Idaho Falls	C. N. Layne
KRLC—Lewis-Clark Hotel, Lewiston	Gene Wilson
KFXD—1024 12th S., Nampa	E. P. Hurt
KSEI—Yellowstone Hwy., Pocatello	Henry H. Fletcher
KWAL—Tabor Bldg., Wallace	Howard G. Olsen

ILLINOIS

WMRO—34 S. River, Aurora	Phillip Olson
WJBC—209 E. Wash., Bloomington	James Hamon
WKRO—Cairo	Ralph L. Hirsch
WDWS—48 Main, Champaign	Jack R. Baum
WAAF—Palmer House, Chicago	Carl W. Ulrich
WAIT—360 N. Michigan, Chicago	E. W. Jacker
WBBM—410 N. Michigan, Chicago	J. P. Novy
WCFB—666 Lakeshore, Chicago	R. B. Pappin
WCRW—2756 Pine Grove, Chicago	Clinton R. White
WEDC—3860 Ogden, Chicago	C. T. Lewicki
WENR—Merchandise Mart, Chicago	E. C. Horstman
WGES—2708 W. Wash., Chicago	E. Plotts
WGN—441 N. Michigan, Chicago	G. Wm. Lang
WIND—230 N. Michigan, Chicago	K. C. Shirk
WJJD—230 N. Michigan, Chicago	W. F. Myers
WLS—1230 W. Wash., Chicago	Thomas L. Rowe
WMAQ—222 N. Bank, Chicago	H. C. Luttgens
WMBI—153 Institute, Chicago	A. P. Frye
WHFC—6138 W. Cermak, Cicero	Elmer P. Hayes
WDAW—Hotel Wolford, Danville	T. G. Magin
WSDY—351 N. Main, Decatur	Paul A. Wnorowski
WTMV—Broadview Hotel, E. St. Louis	Erle E. White
WGIL—Hill Arcade Bldg., Galesburg	Robert K. Pratt
WEBO—100 E. Poplar, Harrisburg	Jos. R. Tate
WJPF—Box 179, Herrin	Gino Monaco
WLDS—Fox Bldg., Jacksonville	G. J. Cassens
WJLD—601 Walnut, Joliet	Robert Schmidt
WMBD—Alliance Life Bldg., Peoria	A. Jas. Ebel
WTAD—W.C.U. Bldg., Quincy	U. F. Whitman
WHBF—Safety Bldg., Rock Island	F. R. Smettt
WRBK—News Tower, Rockford	Wilfred A. Smith
WCBS—523 E. Capitol, Springfield	H. L. Dewing
WTAX—Reisch Bldg., Springfield	E. C. Swearingen
WZJ—McNeill Bldg., Tuscola	Ted Glieser
WILL—1010 S. Wright, Urbana	John R. Brigger

INDIANA

WHBU—Citizens Bank Bldg., Anderson	L. F. Podhaski
WTRC—Hotel Elkhart, Elkhart	L. W. Zellmer

★ ELECTRONIC MARKETING

Radio Station and Address Chief Engineer
 WEOA—519 Vine, Evansville.....J. B. Caraway, Jr.
 WGBF—519 Vine, Evansville.....J. B. Caraway, Jr.
 WGL—201 W. Jefferson, Ft. Wayne.....H. J. Beck
 WOWO—925 S. Ilarison, Ft. Wayne.....Bruce H. Ratts
 WJOB—449 State, Hammond.....Stanley Strasburg
 WFBM—48 Monument, Indianapolis.....Harold S. Holland
 WIBC—News Bldg., Indianapolis.....Harry E. Adams
 WIRE—Claypool Hotel, Indianapolis.....E. E. Alden
 WISH—Board of Trade, Indianapolis.....Stokes Gresham, Jr.
 WKMO—College Bldg., Kokomo.....Geo. Palmer
 WASK—Wallace Bldg., Lafayette.....Harry C. Garba
 WBAA—Hall of Music, Lafayette.....Howard Eckert
 WLBC—Box 271, Muncie.....Maurice M. Crain
 WKBV—25 S. 9th, Richmond.....Louis Duning
 WHOT—St. Joseph & Monroe, South Bend.....Jack E. Willson
 WSBT—225 W. Colfax, South Bend.....Herbert G. Cole
 WBOW—303 S. 6th, Terre Haute.....Donald D. Aldrich
 WAOV—320 Busseron, Vincennes.....Eugene E. Alden

IOWA

WOI—Ames.....L. L. Lewis
 KBUR—National Bank Bldg., Burlington.....John Gallino
 WMT—Paramount Bldg., Cedar Rapids.....Geo. P. Hixenbaugh
 KRCS—Jacobsen Bldg., Clinton.....Gilbert S. Andrew
 WOC—1002 Brady, Davenport.....P. G. Arvidson
 KWLC—600 Leiy Erickson, Decarah.....Oliver Eitrtreim
 KRNT—Register & Tribune, Des Moines.....Chas. F. Quentin
 KSO—800 Old Colony Bldg., Des Moines.....F. E. Bartlett
 WHO—914 Walnut, Des Moines.....Paul A. Loyet
 KOTH—8th & Bluff, Dubuque.....Chas. Cain
 WKBB—Hotel Julien, Dubuque.....Leonard Carlson
 KVFD—912 1st St., Ft. Dodge.....Dave Sinclair
 WSUI—Iowa City.....S. J. Ebert
 KFJB—1603 W. Main, Marshalltown.....Jas. A. Dickens
 KGLO—12 2nd N. E., Mason City.....Leo W. Born
 KBIZ—117 E. Main, Ottumwa.....Geo. Caspers
 KFNF—407 N. Sycamore, Shenandoah.....R. N. Barkman
 KMA—Lowell & Elm, Shenandoah.....R. J. Schroeder
 KSCJ—415 Douglas, Sioux City.....Stephen C. Dier
 KTR1—Commerce Bldg., Sioux City.....Willard Easterly
 KICD—Box 631, Spencer.....Burney B. Jones
 KXEL—Insurance Bldg., Waterloo.....Don E. Kassner

KANSAS

KVAK—622½ Commercial, Atchison.....Harry P. Elliott, Jr.
 KGGF—Journal Bldg., Coffeyville.....J. S. Jaminet
 KGNO—705 2nd, Dodge City.....Ralph Hickman
 KTSW—613 Merchant, Emporia.....Paul H. Daniels
 KIUL—509½ N. Main, Garden City.....Robert Snyder
 KVGB—2103 Forest, Great Bend.....Leo Legleiter
 KBWB—101 E. Ave. A, Hutchinson.....Millard H. Clary
 WREN—Lawrence.....C. B. Blesner
 KSAC—Manhattan.....Bernard Holbert
 KOAM—Box 603, Pittsburg.....Leo Stafford
 KSAL—Journal Bldg., Salina.....N. E. Vance, Jr.
 WIBW—1035 Topeka, Topeka.....K. G. Marquardt
 KANS—Wichita.....Ted Heitcheke
 KFB—1st & Market, Wichita.....K. W. Pyle
 KFH—York Rite Bldg., Wichita.....Amos Dadisman

KENTUCKY

WCM1—Box 949, Ashland.....Clarence W. Weaver
 WLB3—Fairview & Lehman, Bowling Green.....J. V. Pentacost
 WHLN—S. Main, Harlan.....J. Francke Fox
 WSON—Box 418, Henderson.....B. A. Smith
 WHOP—Garnett Bldg., Hopkinsville.....T. E. Brewer
 WLAP—Radio Bldg., Lexington.....Sanford Helt
 WAVE—334 E. B'way, Louisville.....Wilbur E. Hudson
 WGRC—Kentucky Home Life Bldg., Louisville.....P. W. Esten
 WHAS—300 W. Liberty, Louisville.....O. W. Townner
 WINN—Tyler Hotel, Louisville.....Elphin G. Rinn
 WOM1—Owensboro.....Leslie Goodaker
 WPAD—Taylor Bldg., Paducah.....U. C. Morris

LOUISIANA

KALB—505 Johnston, Alexandria.....Jesse R. Sexton
 WJBO—444 Florida, Baton Rouge.....Donald K. Allan
 KVOL—519 S. Buchanan, Lafayette.....B. Hillman Bailey, Jr.
 KPCL—Majestic Hotel, Lake Charles.....Earl C. Moses
 KMLB—Jackson & Harrison, Monroe.....O. L. Morgan
 KNOE—Box 1713, Monroe.....E. R. Goodwin
 WDSU—Hotel Monteleone, New Orleans.....Chas. Whitney
 WJBW—Audubon Bldg., New Orleans.....Karl Seibold
 WNOE—St. Charles Hotel, New Orleans.....A. J. Bourgeois
 WSMB—901 Canal, New Orleans.....H. G. Nebe
 WWL—Roosevelt Hotel, New Orleans.....J. D. Bloom, Jr.
 KTBS—Box 1121, Shreveport.....C. H. Maddox
 KRMD—Box 1712, Shreveport.....Howard Hargrove
 KWKH—Commercial Bldg., Shreveport.....W. E. Antony

MAINE

WRDO—175 Water, Augusta.....Harold Dinsmore
 WABI—57 State, Bangor.....Walter Dickson
 WLB3—100 Main, Bangor.....John Wibby
 WCOU—223 Lisbon, Lewiston.....John T. Duty
 WCSH—157 High, Portland.....G. Fred Crandon
 WGAN—645a Congress, Portland.....Roger W. Hodgkins
 WPOR—Portland.....Roger Perry
 WAGM—180 State, Presque Isle.....L. E. Hughes

MARYLAND

WBAL—Lexington Bldg., Baltimore.....R. Duncan
 WCAO—811 W. Lanvale, Baltimore.....Martin L. Jones
 WCBM—No. & Harford, Baltimore.....G. Porter Houston
 WFBR—10 E. North, Baltimore.....Wm. Q. Ranft
 WITH—7 E. Lexington, Baltimore.....Jas. S. Duff

Radio Station and Address Chief Engineer
 WTBO—31 Frederick, Cumberland.....David Jefferles
 WFMD—Winchester Hall, Frederick.....Julius Thiel
 WJEJ—Franklin Court, Hagerstown.....Geo. McIntyre
 WBOC—Radio Park, Salisbury.....Peter A. Alfonsi

MASSACHUSETTS

WBZ—275 Tremont, Boston.....W. H. Hauser
 WCOP—Copley Plaza Hotel, Boston.....Roland C. Hale
 WEE1—182 Tremont, Boston.....W. J. Stiles, Jr.
 WHDH—62 Boylston, Boston.....Philip K. Baldwin
 WMEX—70 Brookline, Boston.....John Memishian
 WNAC—21 Brookline, Boston.....I. B. Robinson
 WORL—216 Tremont, Boston.....J. W. Parker
 WSAR—Academy Bldg., Fall River.....John C. Pavao
 WEIM—717 Main, Fitchburg.....Ted Kallin
 WHA1—354 Main, Greenfield.....Jas. L. Spates
 WHYN—180 High, Holyoke.....T. R. Humphrey
 WLAW—278 Essex, Lawrence.....Geo. A. Hinckley
 WLLH—39 Kearney, Lowell.....A. Michaels
 WNBH—588 Pleasant, New Bedford.....Everett T. Parker
 WBRK—8 Bank Row, Pittsfield.....L. L. Lavendol
 WESX—126 Washington, Salem.....R. I. Hammond
 WBZA—Springfield.....W. H. Hauser
 WMAS—1757 Main, Springfield.....Earle Hewinson
 WSPR—63 Chestnut, Springfield.....L. A. Reilly
 WOCB—So. Sea, West Yarmouth.....Everett Parker
 WAAB—34 Mechanic, Worcester.....Joseph Grann
 WTAG—18 Franklin, Worcester.....Elliot A. Browning

MICHIGAN

WPAG—Hutzel Bldg., Ann Arbor.....Geo. D Stearns
 WELL—Mich. Nat. Bank Bldg., Battle Creek.....E. J. Stone
 WBCM—Wenonah Hotel, Bay City.....Ralph H. Carpenter
 WATT—Box 219, Cadillac.....Les Biederman
 WHDF—Community Bldg., Calumet.....Geo. L. Burgan
 CKLV—Union Guardian Bldg., Detroit.....W. J. Carter
 WJBK—6559 Hamilton, Detroit.....Paul Frincke
 WJLB—Eaton Tower, Detroit.....Edward H. Clark
 WJR—Fisher Bldg., Detroit.....G. F. Leydorf
 WWJ—630 W. Lafayette, Detroit.....H. F. Tank
 WXYZ—Stroh Bldg., Detroit.....Chas. F. Koche
 WKAR—East Lansing.....Norris E. Grover
 WFDL—Mott Foundation Bldg., Flint.....Frank D. Fallain
 WJEF—Pantlind Hotel, Grand Rapids.....Carl E. Lee
 WLAV—6 Fountain N. E., Grand Rapids.....Lee Stevens
 WOOD—National Bank, Grand Rapids.....C. F. Koche
 WJMS—124 E. McLeod, Ironwood.....Arne Dahlbacka
 WIBM—Hotel Hayes, Jackson.....Chas. W. Wirtanen
 WKZO—Burdick Hotel, Kalamazoo.....Carl E. Lee
 WJIM—Bank of Lansing, Lansing.....Mel Wirth
 WKLA—Stearns Bldg., Ludington.....N. Hale Blitch
 WKBZ—432 Apple, Muskegon.....Geo. Krivitzky
 WCAR—Riker Bldg., Pontiac.....Wayne N. Cook
 WHLS—932 Military, Port Huron.....Leslie C. Conant
 WEXL—212 W. 6th, Royal Oak.....J. Steadley
 WSAM—Edgy Bldg., Saginaw.....Harold McCullen
 WSOO—107 W. Portage, Sault Ste. Marie.....Eugene Kaari
 WTCM—Anderson Bldg., Traverse City.....Les Biederman

MINNESOTA

KATE—332 S. Broadway, Albert Lea.....Lawrence Lawson
 KDAL—Bradley Bldg., Duluth.....R. A. Dettman

Radio Station and Address Chief Engineer
 WEBC—4th at Superior, Duluth.....Wm. Lounsberry
 KGDE—Fergus Falls.....Milo Henry
 WMFG—Androy Hotel, Hibbing.....Wm. Lounsberry
 KYSM—101 N. 2nd, Mankato.....Jas. Houts
 KSTP—St. Paul Hotel, Minneapolis-St. Paul.....J. N. Fricker
 KUOM—Eddy Hall, Minneapolis-St. Paul.....B. A. Holmberg
 WCCO—625 2nd S., Minneapolis-St. Paul.....J. J. Beloungy
 WDCY—Hotel Nicolet, Minneapolis-St. Paul.....C. Winkler
 WL0L—1730 Hennepin, Minneapolis-St. Paul.....E. Plotts
 WMIN—1287 St. Anthony, Minn.-St. Paul.....W. B. Fritze
 WTCN—Wesley Temple, Minn.-St. Paul.....John M. Sherman
 KVOX—Comstock Hotel, Moorhead.....Harry Vose
 WCAL—Northfield.....M. C. Jensen
 KROC—100 1st Ave. Bldg., Rochester.....Fred C. Clarke
 KFAM—Weber Bldg., St. Cloud.....R. B. Witschen
 WHLB—17th & 6th S., Virginia.....Wm. Lounsberry
 KWNO—216 Center, Winona.....L. L. McCurnin

MISSISSIPPI

WROX—Clarksdale.....Henry N. Fones
 WCB1—Gilmer Hotel, Columbus.....C. H. Dyess
 WCMA—Ray Bldg., Corinth.....W. M. Essary
 WJPR—107 S. Poplar, Greenwood.....Horace Colby
 WGRM—222 Howard, Greenwood.....Wm. Lewis, Jr.
 WCGM—Hewes-Martin Bldg., Gulfport.....Donovan Murphy
 WFOR—302 Hemphill, Hattiesburg.....B. B. McLemore
 WJDX—Box 2171, Jackson.....Percy G. Root
 WJXN—1200 N. State, Jackson.....Murray Ellington
 WSL1—Box 1847, Jackson.....C. A. Perkins
 WAML—535½ Central, Laurel.....Clyne Graves
 WSKB—McComb.....R. L. Sanders
 WMIS—407 Franklin, Natchez.....Geo. W. Wilson
 WELO—Tupelo.....LeRoy Green
 WQBC—Vicksburg Hotel, Vicksburg.....C. E. Drake

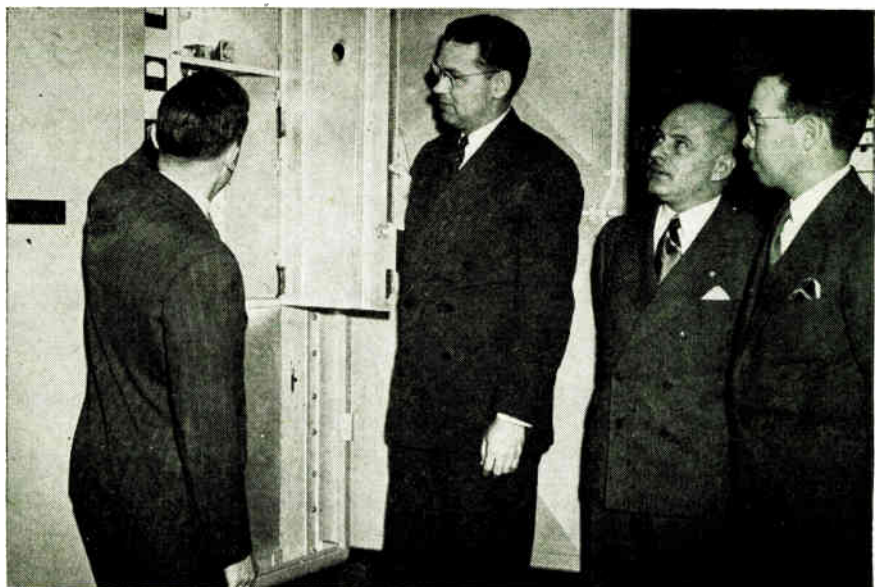
MISSOURI

KFVS—324 Broadway, Cape Girardeau.....Oscar C. Hirsch
 KFRU—9th & Elm, Columbia.....R. H. Haigh
 KHMO—Hannibal.....Ben Parrish
 KWOS—210 Monroe, Jefferson City.....Harold White
 WMBH—Frisco Bldg., Joplin.....R. P. Meek
 KCKN—300 Waltover Bldg., Kansas City.....Maxell Williams
 KCMO—Commerce Bldg., Kansas City.....K. Troegling
 KMBC—Pickwick Hotel, Kansas City.....A. R. Moler
 WDAF—1729 Grand, Kansas City.....Jos. A. Flaherty
 WHB—Scarritt Bldg., Kansas City.....H. E. Goldenberg
 KWOC—1801 N. Main, Poplar Bluff.....Don M. Lidenton
 KFEQ—Schneider Bldg., St. Joseph.....J. Wesley Koch
 KFuo—801 DeMun, St. Louis.....Albert H. Wiese
 KMOX—401 S. 12th, St. Louis.....Harry Harvey
 KWK—Hotel Chase, St. Louis.....N. J. Zehr
 KXOK—12th & Delmar, St. Louis.....Arthur P. Rekart
 WEW—3642 Lindell, St. Louis.....Geo. E. Rueppel
 WIL—Melbourne Hotel, St. Louis.....E. Goodberlet
 KORO—2100 W. Broadway, Sedalia.....Wayne Pash
 KGBX—508 E. St. Louis, Springfield.....Dennis White
 KTTS—Chamber of Com. Bldg., Springfield.....W. F. Curry
 KWTO—508 St. Louis, Springfield.....Fritz Bauer

MONTANA

KGHL—5th & N. Broadway, Billings.....Jeff Kiechil
 KRBM—Bozeman.....Jack Provis

ENGINEERS STUDY ENGINEERING FEATURES



Viewing one of the first Federal 1-3 kw FM transmitters to come off the production line are: Gordon Wright FTR engineer; E. N. Wendell FTR vice-president in charge of engineering and sales; A. B. Chamberlain, chief engineer CBS; and Howard Chinn, CBS chief audio engineer

Radio Station and Address Chief Engineer

KGIR—Butte Jack Provis
 KFBB—First Natl. Bank Bldg., Great Falls Wilbur Myhre
 KPFA—1306 11th, Helena R. D. Martin
 KGZJ—203 1st E., Kalispell W. H. Patterson
 KRJF—109 N. 5th, Miles City Jan Elliot
 KGVO—132 W. Front, Missoula Merrill F. Chapin
 KGXC—109 S. Central, Sidney Oscar Halerson

NEBRASKA

KORN—Pathfinder Hotel, Fremont Wm. Baldwin
 KMMJ—Cedar & Division, Grand Island Norval Larsen
 KFBB—Great Falls Wilbur L. Myhoe
 KHAS—Tribune Bldg., Hastings Duane Allison
 KGFV—Federal Annex Bldg., Kearney Jack Lewis
 KFAB—Sharp Bldg., Lincoln Mark W. Bullock
 KFDR—Stuart Bldg., Lincoln C. W. Winkler
 WJAG—Norfolk Frank Weidenbach
 KODY—1521 W. 12th, North Platte J. Beauford Eaves
 KBYN—2027 Dodge, Omaha Percy Zeigler
 KFAB—Farnam Bldg., Omaha Mark Bullock
 KOIL—Omaha Natl. Bank Bldg., Omaha C. W. Winkler
 KOWH—World-Herald Bldg., Omaha Frank E. Shopen
 WOH—Insurance Bldg., Omaha W. J. Kotera
 KGKY—1517½ Broadway, Scottsbluff H. Morrison

NEVADA

KBNE—P. O. Box H, Boulder City R. E. Malchle
 KENO—Box 1310, Las Vegas Maxwell Kelch
 KOH—143 Stevenson, Reno Irven Carlsen

NEW HAMPSHIRE

WKNE—17 Dunbar, Keene E. F. Batchelder, Jr.
 WLNH—653 Main, Laconia Louis C. Steady
 WFEA—286 Franklin, Manchester R. A. Schow
 WMUR—1819 Elm, Manchester Vincent H. Chandler
 WHEB—Lafayette Rd., Portsmouth Paul G. Lindsay

NEW JERSEY

WCAP—Convention Hall, Asbury Park Alphonse Bressan
 WBAB—1900 Atlantic, Atlantic City Earle Godfrey
 WFPG—Steel Pier, Atlantic City Blair K. Thron
 WSNJ—Bridgeton Francis Fekel
 WCAM—City Hall, Camden Clarence E. Onens
 WAAT—11 Hill, Newark Frank V. Bremer
 WPAT—7 Church, Paterson Earl F. Lucas
 WTTM—35 W. State, Trenton Theo. P. Kilmer
 WAWZ—Zarephath Nathaniel Wilson

NEW MEXICO

KGGM—Kimo Bldg., Albuquerque L. F. Dodds
 KOB—418 W. Gold, Albuquerque Geo. S. Johnson
 KAVE—800 S. Canal, Carlsbad Harland Nifong
 KGAK—Gallup E. L. Gemoets
 KWEW—Hardin Hotel, Hobbs Joe F. Marquez
 KFEV—Box 710, Las Vegas A. F. Schultz
 KGFL—310 N. Richardson, Roswell Melvin Unger
 KVSF—759 Cerrillos, Santa Fe B. L. Kennington
 KTNM—Tucumcari Arnold H. Haur

NEW YORK

WMBO—Metcalf Bldg., Auburn Herbert House
 WBTA—90 Main, Batavia Fred Callendar
 WBNF—Arlington Hotel, Binghamton Lester H. Gilbert
 WBBR—124 Columbia Hts., Brooklyn R. H. Lefter
 WBYN—1 Nevins, Brooklyn Peter Testan
 WBEA—Hotel Statler, Buffalo R. J. Kingsley
 WBNY—485 Main, Buffalo Thomas L. Vines
 WBR—23 North, Buffalo Raymond H. Lamy
 WGR—Rand Bldg., Buffalo Karl B. Hoffman
 KWBW—Rand Bldg., Buffalo Karl B. Hoffman
 WBNY—Mark Twain Hotel, Elmira Thurlow A. Greene
 WGBB—44 S. Grove, Freeport Geo. Graham
 WENT—8 W. Fulton, Gloversville L. Edwin Rybakiewicz
 WHCU—Savings Bank Bldg., Ithaca True McLean
 WJTN—Hotel Jamestown, Jamestown Harold J. Kratzert
 WKNY—Broadway Theatre Bldg., Kingston F. H. Boisvert
 WMSA—Central Bldg., Massena M. R. Yonkovic
 WALL—14 South, Middletown Martin Karig
 WGNV—161 Broadway, Newburgh Marvin Seimes
 WABC—485 Madison Ave., New York Henry Grossman
 WBNX—260 E. 161st, New York A. I. Solbrig
 WEAF—30 Rockefeller Plaza, New York F. A. Wankel
 WEVD—117 W. 46th, New York Chas. W. Brown
 WHN—1540 Broadway, New York Paul Fueling
 WHOM—29 W. 57th, New York Theo. Gemp
 WINS—28 W. 44th, New York Paul von Kunits
 WJZ—30 Rockefeller Plaza, New York Geo. O. Milne
 WLBB—850 Flatbush Ave., Brooklyn Frank E. Knaack
 WMCA—1657 Broadway, New York Pierre C. Verseput
 WNEA—501 Madison Ave., New York M. J. Weiner
 WNYC—Municipal Bldg., New York John De Prospero
 WOR—1440 Broadway, New York J. R. Poppel
 WOY—730 5th Ave., New York H. W. Holt
 WQXR—730 5th Ave., New York R. D. Valentine
 WWRL—41-38 58th, Woodside, L. I. W. H. Reuman
 WHLD—Hotel Niagara, Niagara Falls Elwood D. Hiatt
 WSLB—2315 Knox, Ogdensburg Clifford Moore
 WHDL—Exchange Natl. Bank, Olean Thomas J. Gill
 WMFF—153 Margaret, Plattsburg Jan King
 WKIP—42 Market, Poughkeepsie Marvin Seimes
 WHAM—111 East, Rochester Kenneth Gardner
 WHCC—40 Franklin, Rochester Bernard O'Brien
 WSAW—Taylor Bldg., Rochester Gordon P. Brown
 WNBZ—14 Broadway, Saranac Lake H. B. Williams
 WGY—1 River Rd., Schenectady W. J. Purcell
 WSNY—619 State, Schenectady Irving P. Beck

Radio Station and Address Chief Engineer

WAGE—Loew Bldg., Syracuse C. W. Brannen
 WFBL—433 S. Warren, Syracuse Alfred R. Marcy
 WOLF—Chimes Bldg., Syracuse Thomas Crimmins
 WSYR—Syracuse-Kemper Bldg., Syracuse A. G. Belle Isle
 WYAZ—110 8th, Troy W. C. Stoker
 WTRY—92 4th, Troy Albert H. Chismark
 WIBX—First Natl. Bank Bldg., Utica John T. Dowdell
 WWNV—Hotel Woodruff, Watertown Maynard B. Davis
 WFAS—Roger Smith Hotel, White Plains Frank A. Seitz

NORTH CAROLINA

WISE—98 College, Asheville C. W. Sumner
 WUNC—14 O. Henry, Asheville Cecil B. Hoskins
 WBBB—310½ S. Main, Burlington Berry Tysor
 WAYS—120 E. 3rd, Charlotte Paul T. Absher
 WBT—Wilder Bldg., Charlotte M. J. Minor
 WSOC—1925 N. Tryon, Charlotte L. L. Caudle, Jr.
 WEGO—Concord W. M. Nelson
 WNCN—138½ E. Chapel Hill, Durham Walter S. Hill
 WCNC—104 E. Colonial, Elizabeth City Joe Kyle
 WNCN—114 Anderson, Fayetteville Foy T. Hinson
 WNCN—168 W. Main, Gastonia W. C. Groves, Jr.
 WGBR—Box 1024, Goldsboro Daniel B. Trueblood
 WBIQ—O. Henry Hotel, Greensboro Earl Allison
 WBGK—Ashe St. Extension, Greensboro Jas. Stewart
 WTCG—Box 898, Greenville James Mayo
 WHNC—19 Williams, Henderson Leon Small
 WHKY—Radio Bldg., Hickory Edmund S. Long
 WMFR—Security Bank Bldg., High Point Robert L. Moore
 WJNC—Route 24 N., Jacksonville Elmo Cronk
 WFTC—210 E. King, Kinston Herman Civils
 WHIT—U.S. Hwy. No. 17 S., New Bern D. E. Hardison
 WPTF—Insurance Bldg., Raleigh Henry Hulick, Jr.
 WRAL—131 S. Salisbury, Raleigh Stanley Brown
 WGBT—251 Roanoke, Roanoke Rapids C. W. Meares
 WEED—Box 752, Rocky Mount I. G. Murphy
 WSTP—Yadkin Hotel, Salisbury Carl B. Watson
 WRRF—Bank of Washington Bldg., Washington G. Martin
 WMFD—Castle Hayne Rd., Wilmington E. I. Herring, Jr.
 WGTM—Wilson Wm. H. Malone
 WAIR—Pepper Bldg., Winston-Salem Lee C. King
 WSJS—419 N. Spruce, Winston-Salem Philip F. Hedrick

NORTH DAKOTA

KFYR—320 Broadway, Bismarck Ivar Nelson
 KOLR—1025 3rd, Devils Lake Richard Mortitz
 WDAY—Black Bldg., Fargo Juline Savold
 KFJM—Grand Forks Arnold Petrich
 KILO—First Natl. Bank Bldg., Grand Forks A. Petrich
 KSJB—Midland Bldg., Jamestown Lloyd R. Amoo
 KGCU—200 3rd N.W., Mandan LeRoy Gunderson
 KLRM—118A S. Main, Minot C. W. Baker
 KOVC—312 5th, Valley City Kermit Holm

OHIO

WADC—Box 830, Akron J. L. Wildermuth, Jr.
 WAKR—First Central Tower, Akron George Paul
 WHKK—51 W. State, Akron James S. Hill
 WICA—221 Center, Ashtabula H. R. Johnson
 WHBC—550 S. Market, Canton Kenneth L. Sikler
 WKCY—Hotel Gibson, Cincinnati C. H. Topmiller
 WCPO—Carew Tower, Cincinnati Glen A. Davis
 WKRC—Hotel Alms, Cincinnati Geo. A. Wilson
 WLW—Crosley Square, Cincinnati R. J. Rockwell
 WSAI—115 E. 4th, Cincinnati W. E. Symons
 WGAR—Hotel Statler, Cleveland R. Morris Pierce
 WHK—Terminal Tower, Cleveland Ralph H. DeLany
 WJW—1375 Euclid, Cleveland Gerald Roberts
 WTAM—815 Superior N.E., Cleveland S. E. Leonard
 WBNS—33 N. High, Columbus Lester H. Nafziger
 WCOL—33 N. High, Columbus Leo DeConnick
 WHKC—22 E. Gay, Columbus Wm. C. Minor
 WWSU—Communication Lab., Columbus Robert C. Higgy
 WHIO—45 S. Ludlow, Dayton Ernest L. Adams
 WING—121 N. Main, Dayton Paul F. Braden
 WFIN—500¼ S. Main, Findlay Edgar C. Smith
 WMOH—Second Natl. Bank Bldg., Hamilton A. F. Bruck
 WLOK—National Bank Bldg., Lima Darrel J. Hunter
 WMAN—140¼ Park W., Mansfield Wm. E. Morrison
 WMRN—N. Main, Marion Francis J. Peters
 WPAZ—1009 Callia, Portsmouth Maurice L. Myers
 WIZE—117 W. High, Springfield Victor L. Bushong
 WSTV—Exchange Realty, Steubenville Jos. M. Troesch
 WSPD—136 Huron, Toledo F. M. Hiltner
 WTOL—Bell Bldg., Toledo F. J. Sheehan
 WRRR—108 Main, Warren Robert V. Kinney
 WFMJ—101 W. Boardman, Youngstown F. A. Dieringer
 WKBN—17 N. Champlin, Youngstown B. T. Wilkens
 WHIZ—Lind Arcade Bldg., Zanesville J. Atkinson

OKLAHOMA

KADA—First Natl. Bank Bldg., Ada Harold Walker
 KVSO—Hotel Ardmore, Ardmore John C. Molloy
 KWON—Union Nat. Bk., Bartlesville E. D. DeGraffenreid
 KASA—204 N. Main, Elk City G. M. Patterson
 KCRC—Broadway Tower, Enid Murray D. Coleman
 KSWO—17th & E. Lawton W. E. Billington
 KBIZ—Box 1512, Muskogee Bruce Dennis
 WHAD—Faculty Exchange, Norman Clyde L. Farrar
 KOCP—Plaza Court, Oklahoma City Geo. Brock
 KOMA—Biltmore Hotel, Oklahoma City M. W. Thomas
 KTOK—Apo Tower, Oklahoma City Clifford M. Easum
 WKY—Skirvin Tower, Oklahoma City H. J. Lovell
 KHBG—McCullough Bldg., Okmulgee J. R. Jones
 WBBZ—815 W. Grand, Ponca City N. DeFrancesco
 KGFF—Aldridge Hotel, Shawnee Salvatore Ricciotti
 KOMA—910 S. Boston, Tulsa R. T. Brown
 KTUL—Natl. Bank of Tulsa Bldg., Tulsa R. E. Snider
 KVnn—Philtower Bldg., Tulsa L. W. Stinson

OREGON

Radio Station and Address Chief Engineer

KWIL—15th & Elm, Albany Ken McCoy
 KAST—404 Commercial, Astoria James M. Titus
 KBKR—1st & Court, Baker Sidney Williams
 KBND—1101 Wall, Bend Wallace J. Guthrie
 KOAC—Corvallis Grant S. Feikert
 KODL—Scenic Drive, The Dalles M. E. Johnston
 KORE—Route 3, Eugene Harold M. Gander
 KUIN—Box 148, Grants Pass Edward A. Malone
 KFJI—213 Main, Klamath Falls Wm. P. Grimes
 KFLW—Esplanada & Pine, Klamath Falls G. E. Walters
 KLBK—Oregon Trail Hwy., La Grande Sidney Williams
 KMED—Ross Lane, Medford Dave Rees
 KWRC—Box 173, Pendleton Robert M. Eaton
 KALE—Studio Bldg., Portland A. E. Richmond
 KBPS—546 N. E. 12th, Portland Chas. Weagant
 KEX—815 W. Yamhill, Portland Thomas T. Ely
 KGW—1011 S. W. 6th, Portland H. C. Singleton
 KOIN—New Heathman Hotel, Portland L. S. Bookwalter
 KWJJ—1011 S. W. 6th, Portland Frank Hood
 KXL—Box 311, Portland H. H. Schofield, Jr.
 KRNR—132 N. Jackson, Roseburg E. Leroy Hlatt
 KSLM—Senator Hotel Bldg., Salem Clyde Carlton

PENNSYLVANIA

WSAN—39 N. 10th, Allentown Russell R. Taylor
 WFBG—1318 11th, Altoona Geo. R. Burgoon
 WISR—357 N. Main, Butler P. F. Rex
 WCED—80 N. Park, DuBois Vernon Stahl
 WEST—516 Northampton, Easton J. E. Mathiot
 WERC—131 W. 10th, Erie Thomas Phillips, Jr.
 WLEU—Commerce Bldg., Erie Clarence A. Baker
 WHJB—Penn Albert Hotel, Greensburg Lyle L. Allen
 WSAJ—Hall of Science, Grove City H. W. Harmon
 WHP—216 Locust, Harrisburg E. Daniel Leibensperger
 WHGB—Harrisburg G. B. Buffington
 WKBO—31 N. 2nd, Harrisburg Park Cassidy
 WAZL—Hazleton Natl. Bank, Hazleton J. E. Mathiot
 WDAQ—637 Philadelphia, Indiana V. J. Sullivan
 WJAC—Tribune Annex, Johnstown N. L. Straub
 WGAL—8 W. King, Lancaster J. E. Mathiot
 WMRF—Monument Sq., Lewistown Bernard H. Bopp
 WKST—Cathedral Bldg., New Castle R. S. Emch
 WKPA—810 5th, New Kensington W. W. Neely
 KYW—1619 Walnut, Philadelphia I. N. Eney
 WCAU—1622 Chestnut, Philadelphia Geo. Lewis
 WDAI—1211 Chestnut, Philadelphia F. W. Unterberger
 WFIL—Widener Bldg., Philadelphia Louis E. Littlejohn
 WHAT—1503 Walnut, Philadelphia H. Eckstein
 WIBG—1425 Walnut, Philadelphia John H. Henntinger
 WIP—35 S. 9th, Philadelphia Clifford C. Harris
 WJEN—1518 Walnut, Philadelphia Chas. Burts
 WTEL—4312 N. Broad, Philadelphia E. D. Hibbs
 WKOK—Grant Bldg., Pittsburgh T. C. Kenney
 KQV—Union Trust Bldg., Pittsburgh J. C. Price
 WCAE—Hotel William Penn, Pittsburgh James Schultz
 WJAS—Hotel C. Bldg., Pittsburgh Walter W. McCoy
 WWSW—Hotel Keystone, Pittsburgh Henry R. Kaiser
 WUEU—533 Penn., Reading Harold Schearer
 WRAB—5th & Court, Reading E. A. Gurtowski
 WARM—Select Bldg., Scranton A. W. Oshman
 WGBI—1000 Wyoming, Scranton K. R. Cooke
 WPHC—Box 541, Sharon A. C. Heck
 WMAJ—Glennland Bldg., State College Douglas I. Beman
 WKOK—1150 N. Front, Sunbury John W. Keller, Jr.
 WMBS—Fayette Bldg., Uniontown Wm. Henzly
 WJPA—Geo. Washington Hotel, Washington Frank Krulce
 WBAX—141 S. Main, Wilkes-Barre John H. Stenger, Jr.
 WBRE—62 S. Franklin, Wilkes-Barre Chas. Sakoski
 WRAK—244 W. 4th, Williamsport Louis N. Persho
 WORX—13 S. Beaver, York J. E. Mathiot
 WBSA—R. D. No. 5, York Willis N. Weaver

RHODE ISLAND

WFCL—450 Main, Pawtucket Gilbert Johnson
 WEAN—Crown Hotel, Providence Harry H. Tilley
 WJAR—176 Weybosset, Providence Thos. C. J. Prior
 WPRO—15 Chestnut, Providence John V. Ferri

SOUTH CAROLINA

WAIM—Anderson College, Anderson Morton E. Green
 WCSC—Marion Hotel, Charleston Wilbur R. Albee
 WTMA—133 Church, Charleston D. M. Bradham
 WCOS—1202 Main, Columbia Harry Clippard
 WIS—1811 Main, Columbia Herbert G. Eldson, Jr.
 WKIX—1127 Lady, Columbia Edwin Davis
 WLAT—Box 139, Conway Herman L. Hanks
 WOLS—129 S. Dargan, Florence Wm. Pritchett
 WFBC—Poinsett Hotel, Greenville W. C. Ethernedje
 WMRC—3 College, Greenville Geo. D. Tate
 WCRS—Wilson, Greenwood Harold C. Spenzler
 WRHI—Rock Hill Bldg., Rock Hill Jas. S. Beaty, Jr.
 WORA—291 E. Main, Spartanburg Francis I. Harr
 WSPA—224 E. Main, Spartanburg H. Beckholt
 WFIG—Radio Center Bldg., Sumter James L. Williams

SOUTH DAKOTA

KABR—117½ S. Main, Aberdeen D. T. Hunt
 KGFX—203 W. Summit, Pierre Robert H. Dye
 KOTA—Johnson Hotel, Rapid City A. E. Griffiths
 KELO—317 S. Phillips, Sioux Falls Max Staley
 KSOO—317 S. Phillips, Sioux Falls Max Staley
 KUSD—Union Bldg., Vermillion Steve Graf
 KWAT—Watertown Francis Alwin
 WNAK—2nd & Capitol, Yankton Clifton Todd

TENNESSEE

WOP1—310 State, Bristol B. Daugherty
 WAPO—Read House, Chattanooga B. B. Barnes
 WDEF—Volunteer Bldg., Chattanooga B. C. Baker

★ ELECTRONIC MARKETING

Radio Station and Address	Chief Engineer
WOOD—Hamilton Bank, Chattanooga...	Julius C. Vessels
WJZM—Alasione Temple Bldg., Clarksville...	E. Pentecost
WBAC—Fike Bldg., Cleveland...	Wm. F. Lange
WHUB—523 E. Spring, Cookeville...	Hubert Beasley
WTJS—104 W. Baltimore, Jackson...	Robert Gordon
WJHL—412 S. Roan, Johnson City...	O. K. Garland
WKRT—222 Commerce, Kingsport...	Ike Upchurch
WBIR—406 W. Church, Knoxville...	J. Rex Horton
WNXJ—110 S. Gay, Knoxville...	John L. Cole, Jr.
WRLO—531 S. Gay, Knoxville...	James Gilbert
WHBQ—Hotel Gayoso, Memphis...	Wilton M. Roy
WMC—495 Union, Memphis...	E. C. Frase, Jr.
WMP3—61 N. Main, Memphis...	Joe Deaderick
WREC—Hotel Peabody Bldg., Memphis...	S. D. Wooten, Jr.
WLAC—Thrd Natl. Bank Bldg., Nashville...	F. D. Binns
WSM—301 7th N., Nashville...	Geo. Reynolds

TEXAS

KRBC—Ahlhene...	J. B. Casey
KFGA—109 E. 5th, Amarillo...	Noel E. Luddy
KGNC—Radio Bldg., Amarillo...	W. H. Torrey
KNOW—Capital Natl. Bank Bldg., Austin...	James E. Lewis
KWBC—Brown Bldg., Austin...	Frank W. Yeagley
KFDM—Box 2950, Beaumont...	Lawrence Sanders
KRDC—130 Wall, Beaumont...	Ben Hughes
KBST—702 Johnson, Big Spring...	Andrew M. Jones
KNEL—106 N. Blackburn, Brady...	David Gattis
KVAL—Brownsville...	C. M. Hamner
KBWD—800 Hawkins, Brownwood...	A. W. Stewart
WTAW—College Station...	Frank J. Sossilik
KEYS—Center Theatre, Corpus Christi...	Harold Griffith
KRIS—Corpus Christi...	R. S. Bush
KWBU—Corpus Christi...	Nestor Cuesta, Jr.
KAND—Corpus Christi...	E. R. Hellums
KRLD—Hotel Adolphus, Dallas...	Roy M. Flynn
KSKY—Hotel Stoneleigh, Dallas...	Morris M. Ming
WFAA—1122 Jackson, Dallas...	Raymond Collins
WRR—Municipal Radio Bldg., Dallas...	Durward J. Tucker
KONT—Kimborough Bldg., Denton...	Harvel V. Shepard
KROD—2201 Wyoming, El Paso...	Edward P. Talbott
KTSM—Hotel Paso Del Norte, El Paso...	K. J. Walton
KFJZ—1201 W. Lancaster, Ft. Worth...	Truett Kimzey
KGKK—Medical Arts Bldg., Ft. Worth...	R. C. Stinson
WBPB—Medical Arts Bldg., Ft. Worth...	R. C. Stinson
KLUF—6002 Broadway, Galveston...	John T. McClain
KGBS—Box 711, Harlingen...	Sherman L. Spencer
KPRC—Lamar Hotel, Houston...	H. T. Wheeler
KTHH—So. Standard Bldg., Houston...	Louis I. Jelly
KTRH—Rice Hotel, Houston...	King H. Robinson
KXYZ—Gulf Bldg., Houston...	Gerald R. Chinski
KSAM—Box 312, Huntsville...	Frank B. Wood
KOCA—Kilgore...	Karem O. Soule
KPAB—Hamilton Hotel, Laredo...	K. Hulain Smith
KFYO—914 Ave. J, Lubbock...	W. S. Bledsoe
KRBA—Box 755, Lubbock...	Ambrose Maxim
KCRS—117 S. Lorraine, Midland...	Jack Cecil
KNET—Municipal Bldg., Palestine...	Bill Laurie
KPDN—Box 901, Pampa...	Doug Smith
KPLT—Gabralter Hotel, Paris...	Robert A. Harmon
KIUN—306 S. Cedar, Pecos...	Harry Buchemann
KVOP—111 W. 6th, Plainview...	Carl C. Cook
KPAC—1515 Lakeshore Dr., Port Arthur...	Glenn Boatright
KGKL—St. Angeles Hotel, San Angelo...	Frank Jones
KABC—Milam Bldg., San Antonio...	Paul Wolf
KMAC—National Bank, San Antonio...	Ed. E. Chase
KONO—317 Arden Grove, San Antonio...	Geo. W. Ing
KTSA—Gunter Hotel, San Antonio...	W. G. Egerton
W0A1—1031 Navarro, San Antonio...	Fred L. Sterling
KRRV—421 N. Crockett, Sherman...	Tom E. Spellman
KXOX—111-way 70, Sweetwater...	Geo. W. Dotson
KTEM—Box 186, Temple...	Paul Shaw
KCMC—317 Pine, Texarkana...	Harvey Robertson
KGKB—115 S. College, Tyler...	John B. Sheppard
KVWC—1813 Wilharger, Vernon...	H. F. Ridgway
KVIC—Bank & Trust Bldg., Victoria...	R. L. McCown
WACO—Amicable Bldg., Waco...	L. H. Applemen
KRGV—201 Border, Westaco...	Lewis Hartwig
KWFT—Kemp Hotel, Wichita Falls...	John Adams

UTAH

KSUB—Hotel El Escalante, Cedar City...	Harshell Eric
KVNU—1393 N. Main, Logan...	Carroll Seestr
KLO—Hotel Ben Lomond, Ogden...	W. D'orr Cozzens
KOVO—108 W. Center, Provo...	P. P. Rasmussen
KALL—248 S. Main, Salt Lake City...	Stanley Benson
KDYL—Tribune-Telegram, Salt Lake City...	J. M. Baldwin
KNAK—Continental Bank, Salt Lake City...	Howard Johnson
KSL—10 S. Main, Salt Lake City...	C. Richard Evans
KUTA—29 S. State, Salt Lake City...	Lyle O. Wahlquist

VERMONT

WCAX—137 Main, Burlington...	James W. Tierrey
WSYB—80 West, Rutland...	N. K. Ransom, Jr.
WWSR—32 N. Main, St. Albans...	Theo. H. Boisvert
WDEV—8 Stowe, Waterbury...	Harold Grout

VIRGINIA

WPIK—Hotel Geo. Mason, Alexandria...	Carl E. Lindberg
WCHV—4th & E. Market, Charlottesville...	Walter W. Gray
WKYE—214 Main, Covington...	J. H. Metz
WBTM—Hotel Danville Bldg., Danville...	Lyle Motley
WFVA—Box 269, Fredericksburg...	Walter Harris
WSVA—Newman Bldg., Harrisonburg...	David A. Nichols
WLVA—Allied Arts Bldg., Lynchburg...	John T. Orth
WMVA—Fishboro Rd., Martinsville...	Dewey W. Muse
WGH—Warwick Hotel, Newport News...	Chas. A. Runyon
WTAR—Bank of Commerce Bldg., Norfolk...	J. L. Grether
WSSV—112 W. Tabb, Petersburg...	Edward Schwarz
WSAP—Professional Bldg., Portsmouth...	F. F. Clair
WBBL—Richmond...	Rudolph W. Raabe
WLEE—Broad-Grace Arcade, Richmond...	Geo. McGuilgan
WMBG—3301 W. Broad, Richmond...	Wilfred H. Wood
WRNL—323 E. Grace, Richmond...	Walter R. Selden

Radio Station and Address	Chief Engineer
WRVA—Hotel Richmond, Richmond...	D. C. Woods
WDBJ—Box 150, Roanoke...	J. Edward Newman
WLSL—Shenandoah Life Bldg., Roanoke...	Joseph P. Briggs
WLPM—105 Bank, Suffolk...	V. W. Rupp
WINC—Drawer 605, Winchester...	Phil Whitney

WASHINGTON

KXRO—207½ Market E., Aberdeen...	Bill Cunningham
KVOS—1321 Commercial, Bellingham...	M. Featherkie
KELA—Box 720, Centralia...	Ellwood W. Lippincott
KRKO—Everett...	Earle J. Gerdon
KWLV—Bank of Commerce, Longview...	John Dailey
KGY—Rockway-Leland Bldg., Olympia...	Chas. A. Roark
KPKW—Pasco...	Murray Durham
KONP—313 W. 1st, Port Angeles...	Lloyd C. Sundstrom
KWSC—112 Old Science Hall, Pullman...	Hugo L. Libby
KEVR—Smith Tower, Seattle...	J. B. Hatfield
KIRO—Cobb Bldg., Seattle...	Homer A. Ray, Jr.
KJR—Skinner Bldg., Seattle...	F. J. Brott
KOL—1220 3rd, Seattle...	Perry C. Lind
KOMO—Skinner Bldg., Seattle...	F. J. Brott
KRSC—2939 4th S., Seattle...	Geo. A. Freeman
KTW—7th & Spring, Seattle...	Jas. S. Ross
KXA—Bigelow Bldg., Seattle...	John H. Dubuque
KFIQ—526 Riverside, Spokane...	C. L. Brown
KFPY—Symons Bldg., Spokane...	Geo. E. Langford
KGA—Radio Central Bldg., Spokane...	A. G. Sparling
KHQ—Radio Central Bldg., Spokane...	John Walker
KMO—914 B'way, Tacoma...	J. D. Kolesar
KTBI—Puget Sound Bank Bldg., Tacoma...	Don McCroskey
KVI—Rust Bldg., Tacoma...	Willard D. Tiffany
KVAN—707½ Main, Vancouver...	E. R. Means
KUJ—2nd & Rose, Walla Walla...	M. L. MacLafferty
KPQ—2nd & Columbia, Wenatchee...	R. B. Sutton
KIT—414 E. Yakima, Yakima...	H. B. Murphy
KTYW—Terrace Hgts. Rd., Yakima...	W. F. Howe

WEST VIRGINIA

WJLS—101½ Main, Beckley...	Al J. Ginkel
WHIS—623 Commerce, Bluefield...	P. T. Flanagan
WCHS—1016 Lee, Charleston...	Wm. E. Dixon
WGKV—Empire Bldg., Charleston...	G. Zaharis
WBLK—444½ W. Pike, Clarksburg...	Jos. A. Wright
WMNM—208 Adams, Fairmont...	Robert D. Hough
WSAZ—929½ 4th, Huntington...	Leroy E. Kilpatrick
WLOG—Logan...	Chas. L. Clifton
WAJR—446 Spruce, Morgantown...	Raymond C. Spence
WPAR—Grinter Bldg., Parkersburg...	Cecil Knowles
WBRW—Riverside Drive, Welch...	Howard R. King
WKWK—16th & Market, Wheeling...	Fred Baker
WVVA—Hawley Bldg., Wheeling...	Edwin L. Keim
WBTH—Williamson...	Robert Bullio

WISCONSIN

WBHY—600 S. Lawe, Appleton...	Geo. E. Merk
WATW—321 2nd W., Ashland...	Hine Dahlbaken
WEAU—203 S. Barstow, Eau Claire...	T. O. Jorgensen

FREQUENCY MODULATION

CALIFORNIA

Radio Station and Address	Chief Engineer
KHJ—FM—5515 Melrose, Los Angeles...	Frank M. Kennedy

CONNECTICUT

WDRG—FM—750 Main, Hartford...	I. A. Martino
WTIC—FM—26 Grove, Hartford...	Herman D. Taylor

ILLINOIS

WBBM—FM—410 N. Michigan, Chicago...	Geo. Sherman
WDLM—FM—820 N. LaSalle, Chicago...	A. P. Frye
WGNB—FM—435 N. Michigan, Chicago...	G. Wm. Lang
WWZR—FM—6001 Dickens, Chicago...	Ross Utter

INDIANA

WMLL—FM—519 Vine, Evansville...	Erwin Schoeny
WOWO—FM—925 S. Harrison, Ft. Wayne...	Bruce H. Ratts
WBWW—FM—445 N. Penn., Indianapolis...	Martin R. Williams
WSBF—FM—225 W. Colfax, So. Bend...	Herbert G. Cole

LOUISIANA

WBRL—FM—444 Florida, Baton Rouge...	Donald K. Allan
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MAINE

WMTW—FM—21 Brookline, Boston...	I. B. Robinson
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MASSACHUSETTS

WBZ—FM—275 Tremont, Boston...	W. H. Hauser
WBZA—FM—Hotel Kimball, Springfield...	H. E. Randol
WTAG—FM—20 Franklin, Worcester...	Elliot A. Browning
WGTR—FM—32 Mechanic, Worcester...	J. E. Grabu

MICHIGAN

WENA—FM—615 Lafayette, Detroit...	Carl H. Wesser
WLou—FM—10 Witherell, Detroit...	Wayne F. McDonnell

MINNESOTA

WDUL—FM—4th & Superior, Duluth...	W. H. Lounsberry
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MISSOURI

KOZY—FM—406 W. 34th, Kan. City...	M. W. Woodward
KMBC—FM—Pickwick Hotel, Kansas City...	Robin Compton

Radio Station and Address	Chief Engineer
KFIZ—18 W. 1st, Fond Du Lac...	Wendell S. Meyers
WTAQ—Bellin Bldg., Green Bay...	Wallace J. Stangel
WLCO—204 E. Milwaukee, Janesville...	Wayne A. Clay
WKBB—Radio Bldg., LaCrosse...	Alvin Leeman
WHA—Radio Hall, Madison...	John H. Stiehl
WIBA—110 E. Main, Madison...	Norman G. Haehn
WOMT—Radio Bldg., Manitowish...	W. F. Duben
WMAM—Radio Park, Marinette...	A. L. Stewart
WGM—Medford...	Raymond Bolmert
WEMP—710 N. Plankinton, Milwaukee...	Raymond H. Host
WISN—123 W. Michigan, Milwaukee...	N. J. Richard
WTMJ—333 W. State, Milwaukee...	Wm. Hebal
WOSH—151½ Main, Oshkosh...	Nathan Williams
WIBU—RFD No. 2, Poyette...	S. Sadler
WRJN—441 Main, Racine...	F. L. Deebant
WJMC—1615 S. Main, Rice Lake...	Robert P. Kolsky
WHBL—636 Center, Sheboygan...	Herbert J. Mayer
WLBL—Stevens Point...	H. O. Brieskon
WDSM—Androy Hotel, Superior...	J. Melvin Laskey
WSAU—125 3rd, Wausau...	Roland W. Richardt
WFHR—141 W. Grand, Wisconsin Rapids...	Bert Zielesch

WYOMING

KFBC—Plains Hotel, Cheyenne...	Clark Grove
KPOW—557 N. Clark, Powell...	Del Brandt
KVRS—1307 Wyoming, Rock Springs...	Archib W. Buehanan
KWYO—199 N. Main, Sheridan...	Rob Crosshwalte

TELEVISION

NEW YORK

WABD—515 Madison, New York...	S. R. Patremio
WCBW—15 Vanderbilt, New York...	Henry Grossman
WNBT—30 Rockefeller Plaza, New York...	O. B. Hanson
WRGB—60 Washington, Schenectady...	W. J. Purcell

PENNSYLVANIA

WPTZ—Philadelphia...	R. J. Bowley
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DISTRICT OF COLUMBIA

W3XWT—Harrington Hotel, Washington...	Wm. Sayse
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ILLINOIS

WBKB—190 N. State, Chicago...	A. H. Broily
W9XZV—6001 Dickens, Chicago...	J. E. Brown

CALIFORNIA

W6XAO—3800 Mt. Lee Drive, Hollywood...	Harry W. Lubeke
W6XYZ—5461 Marathon, Hollywood...	Klaus Landsberg

NEW JERSEY

Radio Station and Address	Chief Engineer
WFMN—FM—Alpine...	Perry H. Osborn
WATT—FM—11 Hill, Newark...	Frank V. Bremer

NEW YORK

WABC—FM—485 Madison, New York...	Henry Grossman
WABF—FM—654 Madison, New York...	Theo. R. Grenier
WBAM—FM—1440 B'way, New York...	J. R. Poppele
WEAF—FM—30 Rockefeller Pl., New York...	O. B. Hanson
WGFM—FM—10 E. 40th, New York...	Charles C. Florence
WGYN—FM—70 Pine, New York...	Harvey Anhalt
WHNF—FM—1540 B'way, New York...	Paul Fuelling
WNYC—FM—Center & Chambers, N. Y...	John De Propso
WQQQ—FM—730 5th, New York...	Russell D. Valentine
WHEF—FM—40 Franklin, Rochester...	B. C. O'Brien
WHAM—FM—Sheraton Hotel, Roches...	Kenneth J. Gardner
WBCA—FM—408 State, Schenectady...	Dwelle S. Hoag
WGFN—FM—1 River Rd., Schenectady...	W. J. Purcell

NORTH CAROLINA

WMIT—FM—Box 2093, Winston-Salem...	Phil Hedrick
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OHIO

WELD—FM—33 N. High, Columbus...	Lester H. Nafzger
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PENNSYLVANIA

KYW—FM—1619 Walnut, Phila...	I. N. Eney
WCAU—FM—1622 Chestnut, Phila...	George Lewis
WFIL—FM—Widener Bldg., Phila...	L. E. Littlejohn
WIBG—FM—1425 Walnut, Phila...	John Henninger
WIP—FM—35 S. 9th, Phila...	Clifford C. Harris
WPEN—FM—1528 Walnut, Phila...	Chas. Burtis
KDKA—FM—310 Grant, Pittsburgh...	T. C. Kenney
WMOT—FM—212 Wood, Pittsburgh...	Henry R. Kaiser

TENNESSEE

WSM—FM—7th & Union, Nashville...	Geo. Reynolds
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UTAH

KSL—FM—10 S. Main, Salt Lake City...	C. Richard Evans
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WISCONSIN

WTMJ—FM—333 W. State, Milwaukee...	Phil B. Laeser
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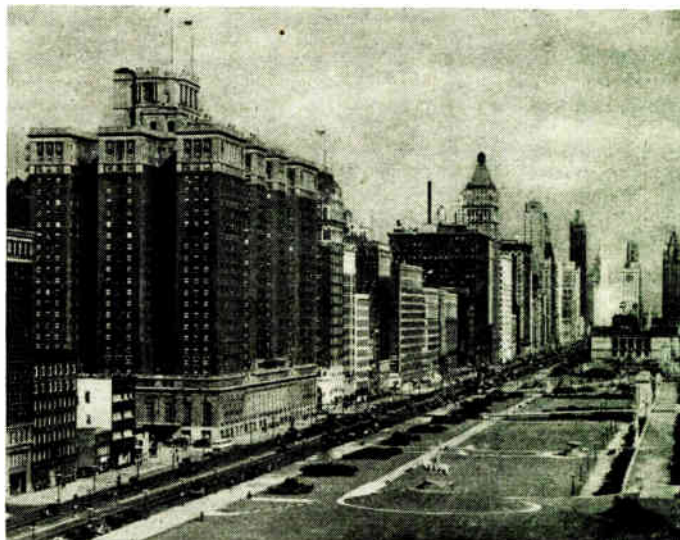
SET MANUFACTURERS

A directory of companies whose products include receivers for AM, FM and television, police and amateur equipment

COMPANY	CHIEF ENGINEER	PURCHASING AGENT	COMPANY	CHIEF ENGINEER	PURCHASING AGENT
Abbott Instrument, Inc., 8 W. 18th St., New York 11, N. Y.	S. Potnos	H. Bloom	Erco Radio Laboratories, Inc., 231 Main St., Hempstead, N. Y.	Edward Ruth III	Frank Ruth
Admiral Corp., 3800 Cortland St., Chicago 47, Ill.	Kenneth Turner	Frank J. Kazda	Espey Mfg. Co., Inc., 528 E. 72nd St., New York 21, N. Y.	Harry Zion	Gordon Poole
Air Associates, Inc., 5827 W. Century Blvd., Los Angeles 45, Calif.	P. H. Thomsen	J. S. Burton	Fada Radio & Electric Co., Inc., 30-20 Thomson Ave., Long Island City 1, N. Y.	Charles Honeywell	I. N. Marks
Air Communications Co., 2233 Grand Ave., Kansas City, Mo.	E. D. Smith	N. C. Yontz	Farnsworth Television & Radio Corp., 3700 E. Pontiac St., Fort Wayne 1, Ind.	B. R. Cummings	B. Colfax
Aireon Corp., Fairfax & Funston Rds., Kansas City 15, Kans.	W. R. Robinson	Arthur DesNoyers	Federal Telephone & Radio Corp., 591 Broad St., Newark, N. J.	W. P. Short	Frank Lawson
Air King Products Co., Inc., 1523 63rd St., Brooklyn 19, N. Y.	Frank Hinners	M. Markowitz	Flush Wall Radio Co., 15 Washington St., Newark 2, N. J.	Sherid S. Bearder	L. R. Schenck
Airplane & Marine Instruments, Clearfield, Pa.	Wm. F. Diehl	Ivan Edmunds	F. M. Radio Mfg. Co., Inc., 10408 Superior Ave., Cleveland, Ohio	Joseph Fair	Barney Lertzman
American Communications Corp., 306 Broadway, New York, N. Y.	E. M. Lurie	E. M. Lurie	Franklin Photographic Industries, 223 W. Erie St., Chicago 10, Ill.	G. K. Smith	H. P. Maccio
Andrea Radio Corp., 43-20 34th St., Long Island City 1, N. Y.	Harold J. Heindel	Bruce B. Donald	Freed Radio Corp., 200 Hudson St., New York 13, N. Y.	Murry Weinstein	Y. Zalkin
Ansley Radio Corp., 41 St. Joes Ave., Trenton 9, N. J.	Arthur C. Ansley	C. A. Clinton	Galvin Mfg. Corp., 4545 W. Augusta Blvd., Chicago 51, Ill.	D. H. Mitchell	Carl Zehnie
Apex Industries, Inc., 192 Lexington Ave., New York 16, N. Y.	M. Lerner	Sid Joffe	Garnet Radio Corp., 69 Glenwood Pl., E. Orange, N. J.	D. E. Noble	II. T. Tudor
A. R. F. Products, 7627 Lake St., River Forest, Ill.	R. Hockstad	E. Maciszewski	Garod Radio Corp., 70 Washington St., Brooklyn 1, N. Y.	Albert Hubert	Emanuel Weintraub
Autocrat Radio Co., 3855 N. Hamilton Ave., Chicago 18, Ill.	II. D. Tofani	R. B. Gubbins	Gem Radio & Television Co., 140 Liberty St., New York 6, N. Y.	Barnet Trott	J. C. Rivman
Automatic Radio Mfg. Co., Inc., 122 Brookline Ave., Boston 15, Mass.	J. S. DeMetrick	J. L. Frost	General Electric Co., 1285 Boston Ave., Bridgeport 2, Conn.	J. C. Rivman	C. B. Adams
Aviola Radio Corp., Phoenix, Ariz.	Joseph Lorch	Paul Schmidt	General Television & Radio Corp., 2701 N. Lehmann Court, Chicago 14, Ill.	C. G. Fick	Roy F. Sielsch
Baronette Radio & Tube Corp., 220 Fifth Ave., New York, N. Y.	Joseph Lorch	Chas. I. Robbins	Giffilan Bros., Inc., 1815 Venice Blvd., Los Angeles 6, Calif.	William R. Kroening	J. L. Forrest
Barr Electric Co., 1314 Forest Ave., Dallas 15, Texas	W. W. Barr	W. W. Barr	Globe Electronics, Inc., 225 W. 17th St., New York 11, N. Y.	C. Frederiek Wolcott	F. Emanuel
Belmont Radio Corp., 5921 W. Dickens Ave., Chicago 39, Ill.	W. Dunn	G. E. Neuhauser	Gray Radio Co., W. Palm Beach, Fla.	M. Dolgins	G. H. DeShazo
Bendix Radio, Div. of Bendix Av. Corp., E. Joppa Rd., Towson 4, Md.	H. M. Detrick	J. J. Samuels	Halicrafters Co., 2611 S. Indiana Ave., Chicago 16, Ill.	F. E. Gray	E. Corcoran
Biltmore Radio Corp., 15 Ave. A, New York, N. Y.	Walter Berry	Walter Berry	Hamilton Radio Corp., 510 Sixth Ave., New York 11, N. Y.	Nelson P. Case	M. Landau
Browning Laboratories, Inc., 750 Main St., Winchester, Mass.	F. A. Spindell	E. D. Whitney	Hammarlund Mfg. Co., Inc., 460 W. 34th St., New York 1, N. Y.	J. Ravdin	P. P. Heaney
Capehart Div. of Farnsworth Tel. & R. Corp., Ft. Wayne 1, Ind.	J. H. Pressley	R. L. Colfax	Harris Mfg. Co., 2422 W. 7th St., Los Angeles 5, Calif.	E. A. Leach	J. Henry Harris
Collins Radio Co., 2920 First Ave., Cedar Rapids, Iowa	John Wagner	John Wagner	Harvey Machine Co., Inc., 6200 Avalon Blvd., Los Angeles 3, Calif.	Fred Knowlden	E. D. Krantzman
Colonial Radio Corp., 254 Rano St., Buffalo 7, N. Y.	H. C. Forbes	J. K. McDonough	Harvey-Wells Electronics, Inc., North St., Southbridge, Mass.	A. J. Kornblum	E. Wiest
Columbia Electronics, Inc., 185 E. 122nd St., New York 35, N. Y.	Leon V. Cattani	Frederick Rooney	Herbach & Rademan Co., 522 Market St., Philadelphia, Pa.	C. A. Harvey	N. O. Rademan
Communications Co., Inc., 300 Greco Ave., Coral Gables 34, Fla.	H. M. Gulick	J. P. Franzen	Hoffman Radio Corp., 3430 S. Hill St., Los Angeles, Calif.	J. E. Wagenseller	P. L. Fleming
Communications Equipment Corp., 523 W. 6th St., Los Angeles 14, Calif.	Ellis E. White	M. I. Burkwall	Howard Radio Co., 1735 Belmont Ave., Chicago 13, Ill.	W. S. Harmon	O. Holen
Concert Master Radio & Telev. Co., 1800 Winnetka Ave., Chicago, Ill.	C. W. Morgan	M. S. Anderson	Hudson American Corp., 25 W. 43rd St., New York 18, N. Y.	W. James	A. C. Newman
Concord Radio Corp., 901 W. Jackson Blvd., Chicago 7, Ill.	A. Rattray	W. E. Vant	Industrial Tool & Die Works, Inc., 2824 University Ave. S.E., Minneapolis, Minn.	Abe Hass	M. M. Matson
Coronet Radio & Telev. Corp., 176 Scranton Ave., Lynbrook, N. Y.	M. S. DeCellys	Alan Cahen	International Detrola Corp., Beard Ave. at Chatfield, Detroit 9, Mich.	C. E. Johnson	R. H. Wann
Crosley Corp., 1329 Arlington St., Cincinnati 25, Ohio	L. M. Clement	F. W. Warner	Islip Radio Mfg. Corp., Islip, N. Y.	R. M. Daugherty	John V. Potter
Crystal Products Co., 1816 Walnut St., Kansas City, Mo.	Ernest O. Ruff	Ralph E. Wilson	Jefferson, Inc., Ray, 40 E. Merrick Rd., Freeport, L. I., N. Y.	Warren A. Wiener	Ray Jefferson
Delco Radio Div. of General Motors Corp., Kokomo, Ind.	B. A. Schwarz	R. Hill, Jr.	Jefferson-Travis Corp., 245 E. 23rd St., New York 10, N. Y.	G. W. Henke	Paul Nichols
DeWald Radio Mfg. Corp., 440 Lafayette St., New York 3, N. Y.	Mark Glaser	Harry Rosenman	Jewel Radio Corp., 583 Sixth Ave., New York 11, N. Y.	Ohlrick Larsen	Kimball H. Stark
F. E. Dine & Co., Inc., 2221 Warwick Ave., Santa Monica, Calif.	F. E. Dine	J. Henderson	Kaar Engineering Co., 619 Emerson St., Palo Alto, Calif.	Jack Zucker	E. W. Mersereau, Jr.
Allen B. Dumont Laboratories, 2 Main Ave., Passaic, N. J.	Fal Patremio	F. P. Rice	Kinetic Electronics Co., 235 E. 42nd St., New York, N. Y.	John M. Kaar	Eric Adair
Dynavox Corp., 40-05 21st St., Long Island City, N. Y.	Martin Dworcken	Joseph Dworcken	Kingston Products Corp., Kokomo, Ind.	Edwin Spiegelthal	L. G. Zimmerer
Eastern Electronics Corp., 41 Chestnut St., New Haven 11, Conn.	Manfred Johnson	M. E. Fossett	Lavoie Laboratories, Morganville, N. J.	F. A. Dawson	Harry Melnick
Echophone Radio Co., 2611 S. Indiana Ave., Chicago, Ill.	Nelson P. Case	Ed Corcoran	Lear, Inc., 230 E. Ohio St., Chicago, Ill.	August Schmeling	E. J. Babkes
Eckstein Radio & Telev. Co., 914 LaSalle Ave., Minneapolis 2, Minn.	E. A. Eckstein	E. A. Eckstein	Lewyt Corp., 60 Broadway, Brooklyn 11, N. Y.	L. G. Woycke	J. Ralph Walker
Electrical Research & Mfg. Co., P.O. Box 3607, Terminal Annex, Los Angeles 54, Calif.	Floyd O'Neill	George L. Corcoran	Lincoln Electronics Corp., 653 11th Ave., New York 19, N. Y.	R. Lee Freeman	Kathleen V. Daly
Electromatic Mfg. Corp., 88 University Pl., New York, N. Y.	Paul H. Nachemson	John Winston	Link Radio Corp., 125 W. 17th St., New York 11, N. Y.	Robert E. Kayatt	Abner G. Budelman
Electronic Devices Co., 601 W. 26th St., New York, N. Y.	Milton Delsón	Edward M. Delsón	Magnavox Co., 2131 Bueter Rd., Fort Wayne, Ind.	Fred'k T. Budelman	M. J. Hayes
Electronic Corp. of America, 45 W. 18th St., New York 11, N. Y.	Harry Chaney	Sal Preteger	Maquire Industries, Inc., 342 W. Putnam Ave., Greenwich, Conn.	R. H. Dreisbach	W. Devanny
Electronics, Inc., 645 Iowa St., Dubuque, Iowa	Garrard Mountjoy	C. M. Cain	Maquire Industries, Inc., 936 Michigan Ave., Chicago, Ill.	Hall Langstroth	Wm. Covert
Emerson Radio & Phonograph Corp., 111—8th Ave., New York 11, N. Y.	C. M. Cain	H. J. Dostal	Majestic Radio & Television Corp., St. Charles, Ill.	E. J. Stanmyre	A. G. Ginsberg

★ ELECTRONIC MARKETING

COMPANY	CHIEF ENGINEER	PURCHASING AGENT	COMPANY	CHIEF ENGINEER	PURCHASING AGENT
Marco Industries, 245-A So. Beverly Dr., Beverly Hills, Calif.	Paul Brinkman	V. A. Marco	Silver Co., McMurdo, 1240 Main St., Hartford 3, Conn.	Owen Shepherd, Jr.	McMurdo Silver
Maritime Radio Corp., 24 Whitehall St., New York 4, N. Y.	L. Sternberg	W. C. Williams	Sonora Radio & Telev. Corp., 325 N. Hoyne Ave., Chicago 12, Ill.	Don Fetterman	Sadelle Liberman
Mason Radio Products, Inc., 80 Prince St., Kingston, N. Y.	J. Edw. Greengard, Jr.	J. Edw. Greengard, Jr.	Sonotone Corp., 92 Main St., White Plains, N. Y.	S. Richmond	A. J. Biggar
McGrade Mfg. Co., E. W. Porter Bldg., Kansas City 2, Mo.	J. G. Speer	Glenn Richardson	Sparks-Withington Co., 2400 E. Ganson St., Jackson, Mich.	Deloyn Monroe	A. G. Lee
Meck Industries, Inc., John, Liberty St., Plymouth, Ind.	C. R. Wexler	B. Bethel	Speak-O-Phone Recording & Equip. Co., 23 W. 69th St., New York, N. Y.	J. C. Cordover	C. A. Austin
Mec-Rad Div. of Black Industries, 1400 E. 222nd St., Cleveland 17, Ohio	Robert MacGregor	H. L. Parmenter	Stewart-Warner Corp., 1826 Diversey Parkway, Chicago 14, Ill.	George Oehlson	R. F. Stiles
Mectron Corp., Lawrence, Mass.	B. Jaeger	B. A. Goldstein	Stromberg-Carlson Co., 100 Carlson Rd., Rochester 3, N. Y.	Frederick C. Young	E. S. Edwards
Medco Mfg. Co., 5 W. 45th St., New York 19, N. Y.	Anthony Lambo	G. B. Lucas	Symphonic Radio & Electronic Corp., 292-298 Main St., Cambridge 42, Mass.	J. Speranza	M. H. Cogan
Megard Corp., 1601 S. Burlington Ave., Los Angeles 6, Calif.	Al Troup	A. R. Meyers			
Meissner Mfg. Co., 936 N. Michigan Ave., Chicago, Ill.	E. J. Stanmyre	Wm. Covert	Taybern Equipment Co., 120 Greenwich St., New York, N. Y.	J. T. Bernsley	E. M. Sheppard
Metropolitan Electronic & Instrument Co., 6 Murray St., New York 7, N. Y.	J. Karns	A. Grossman	Tech-Master Products Co., 123 Prince St., New York, N. Y.	I. Aronson	L. Lazoff
Midwest Radio Corp., 909 Broadway, Cincinnati 2, Ohio	P. Smith	D. Glover	Technical Radio Co., 275 9th St., San Francisco, Calif.	C. F. Bane	Geo. Weiss
James Millen Mfg. Co., Inc., 150 Exchange St., Malden 48, Mass.	Wade Caywood	George Pike	Telicon Corp., 851 Madison Ave., New York 21, N. Y.	Richard Shottenfeld	Morton Kronengold
Minerva Corp. of America, 238 William St., New York 7, N. Y.	Herman Weissberger	Jack Saunders	Teletone Radio Co., 609 W. 51st St., New York 19, N. Y.	B. Singer	A. Frankel
			Templetone Radio Mfg. Corp., New London, Conn.	Dale Pollack	M. A. Gardner
National Co., Inc., 61 Sherman St., Malden 48, Mass.	W. J. Larkin	J. G. Woods	Transmitter Equipment Co., 345 Hudson St., New York 14, N. Y.	Samuel A. Sack	F. C. Botscheller
National Design Service, 96 Liberty St., New York 6, N. Y.	L. Zeitsoff	L. Zeitsoff	Trav-Ler Karenola Radio & Tel. Corp., 571 W. Jackson Blvd., Chicago 6, Ill.	R. J. O'Brien	M. A. Kling
Noblitt-Sparks Industries, Inc., Columbus, Indiana	Ben H. Irwin	Louis L. Ackerman	Trebor Radio Co., Pasadena 18, Calif.	J. Clark	John King
Northern Radio Co., 2208 Fourth Ave., Seattle 1, Wash.	L. G. Reynolds	Lloyd C. Kemp			
			United Cinephone Corp., Torrington, Conn.	John M. Miller, Jr.	Douglas Pierce
Packard-Bell Co., 3443 Wilshire Blvd., Los Angeles 5, Calif.	R. H. Freck	A. T. Baxter	Union Electronics Corp., 38-01 Queens Blvd., Long Island City, N. Y.	Louis Pressman	H. F. Marks
Packard Mfg. Corp., 2900 Columbia Ave., Indianapolis, Ind.	E. E. Collison	J. F. Gigax	United Scientific Labs., Inc., 440 Lafayette St., New York, N. Y.	Mark Glaser	Harry Rosenman
Pan American Electric Co., Inc., 132 Front St., New York 5, N. Y.	Gladden Houck, Jr.	Robert F. Petrino	United States Telev. Mfg. Corp., 106 Seventh Ave., New York 11, N. Y.	Harold V. Nielsen	Morris Bloom
Panoramic Radio Corp., 242 W. 55th St., New York 19, N. Y.	J. I. Heller	E. A. David			
Philco Corp., Tioga & C Sts., Philadelphia 34, Pa.	D. B. Smith	Raymond A. Boyce	Vibracolor Mfg. Co., 3597 Mission St., San Francisco, Calif.	Joseph Topping	Joseph Topping
Pilot Radio Corp., 37-06 36th St., Long Island City 1, N. Y.	W. Auerbacher	H. Zuekerman	Viewtone Co., 203 E. 18th St., New York 3, N. Y.	Albert Nadel	Louis Kane
Precision Specialites, 210 N. Western Ave., Los Angeles 4, Calif.	M. R. Roberts	C. L. Gould	V-lectrical Eng. Co., 828 N. Highland Ave., Hollywood 38, Calif.	Charles Zingle	E. P. Collins
Premier Crystal Laboratories, Inc., 63 Park Row, New York 7, N. Y.	H. M. Bach	A. H. Zink			
			Walsh Engineering Co., P. O. Box 430, Elizabeth 2, N. J.	Lincoln Walsh	E. E. Eckler
Radio Craftsmen, 1341 S. Michigan Ave., Chicago 5, Ill.	Byron M. Friend	I. Aurbach	Warwick Mfg. Corp., 4640 W. Harrison St., Chicago 44, Ill.	Howard A. Gates	Gordon G. Brittan
Radio Development & Research Corp., 26 Cornellison Ave., Jersey City 4, N. J.	Robert Dorr	G. H. McCaffrey	Watterson Radio Mfg. Co., 2700 Swiss Ave., Dallas, Texas	D. C. O'Neill	M. O. Booth
Radio Engineering Labs., 35-54 36th St., Long Island City 1, N. Y.	M. H. Jennings	M. Wade	Wells-Gardner & Co., 2701 N. Kildare Ave., Chicago 39, Ill.	L. J. Biskner	C. W. Pierson
Radio Mfg. Engineers, Inc., 364 First Ave., Peoria, Ill.	R. M. Planck	K. N. Hecht	Western Electric Co., 120 Broadway, New York, N. Y.	H. C. Beale	D. F. G. Eliot
Radio Laboratories, 2701 California Ave., Seattle 6, Wash.	M. F. Kerr	Bryce Etherton	Western Sound & Elec. Labs., Inc., 3512 W. St. Paul Ave., Milwaukee 8, Wisc.	Joseph M. Schmitz	Edw. M. Dieringer
Radio Navigational Instrument Corp., 305 E. 63rd St., New York 21, N. Y.	J. Czernia	Rose Mehlman	Westinghouse Electric Corp., Receiver Div., Sunbury, Pa.	W. S. Winfield	J. R. Todd
Radio Process Co., 7618 Melrose Ave., Los Angeles 46, Calif.	A. Ellsworth	G. Marshall	Whiting & Davis Co., 23 W. Bacon St., Plainville, Mass.	Charles W. Rice	Edward Osterholm
Radio Receptor Co., Inc., 251 W. 19th St., New York 11, N. Y.	Everett D. Gibbs	William Ostrove	Wilcox Electric Co., Inc., 1400 Chestnut St., Kansas City 1, Mo.	A. P. Stuhrman	J. M. Courtney
Radio & Television, Inc., 244 Madison Ave., New York 16, N. Y.	Glenn Browning	E. O. Brown	Wilcox-Gay Corp., 605 W. Seminary St., Charlotte, Mich.	Lawrence V. Wells	Frank E. Lerner
Radio Wire Television, Inc., 100 Sixth Ave., New York 13, N. Y.	L. Marko	H. Davis			
Rauland Corp., 4245 N. Knox Ave., Chicago 41, Ill.	J. J. O'Callaghan	E. J. Linke	Zenith Radio Corp., 6001 W. Dickens Ave., Chicago 39, Ill.	J. E. Brown	Harvey Tullo
RayEnergy Radio & Telev. Corp. of America, 32 W. 22nd St., New York, N. Y.	Harold Kaplan	Carl Rappaport			
RCA Victor Div., Radio Corp. of America, Camden, N. J.	D. F. Schmit	V. DeP. Goubeau			
Recordo-O-Vox Inc., 721 N. Martel Ave., Hollywood 46, Calif.	S. Solat	S. Solat			
Regal Electronics Corp., 20 W. 20th St., New York 11, N. Y.	Ben Waxler	Jack Krieger			
Remler Co., Ltd., 2101 Bryant St., San Francisco 10, Calif.	Harry A. Greene	Geo. A. Coleman			
Rex Products Co., 1313 W. Randolph St., Chicago, Ill.	William Kroenting	Irving H. Siegel			
R.G.H. Mfg. Corp., 214 E. 41st St., New York, N. Y.	David Geller	Sigmund Goldsmith			
Rock-Ola Mfg. Corp., 800 N. Kedzie Ave., Chicago 51, Ill.	J. A. Briggs	J. J. Sears			
E. M. Sargent Co., 212 9th St., Oakland 7, Calif.	L. C. Rayment	E. M. Sargent			
Searle Aero Industries, Inc., P. O. Box 111, Orange, Calif.	Marshall O. Searle	M. W. Sattler			
Schuttig & Co., 9th & Kearny Sts., N. E., Washington 17, D. C.	W. S. Williams	C. K. Vanderslice			
Scophony Corp. of America, 527 Fifth Ave., New York, N. Y.	Arthur Levey	Dr. A. H. Rosenthal			
Scott Radio Labs. Inc., 4541 Ravenswood Ave., Chicago, Ill.	Art Finnie	Harry Lavery			
Sentinel Radio Corp., 2020 Ridge Ave., Evanston, Ill.	W. J. Schnell	P. O. Krumm			
Setchell-Carlson, Inc., 2233 University Ave., St. Paul 4, Minn.	B. T. Setchell	Lyman D. Pew			
Sheridan Electronics Corp., 2850 S. Michigan Ave., Chicago 16, Ill.	Frank Lorenz	J. H. Stackhouse			
Signal Electronics, Inc., 114 E. 16th St., New York 3, N. Y.	John Benedikt	Betty Stohl			



Michigan Boulevard, Chicago, and Hotel Stevens which will house the 1946 Radio Parts & Electric Equipment Conference and Show, May 13-16

SHOW EXHIBITORS

A directory of manufacturers exhibiting at the Chicago show together with the location of their exhibit spaces

	Booth		Booth		Booth
Aerovox Corp., New Bedford, Mass.	90	General Transformer Corp., 1250 W. Van Buren St., Chicago	59	Potter & Brumfield Mfg. Co., 549 W. Washington St., Chicago	12
Alliance Mfg. Co., Alliance, Ohio	98	Gothard Mfg. Co., 2110 Clear Lake Ave., Springfield, Ill.	150	Precision Apparatus Co., 92-27 Horace Harding Blvd., Elmhurst, N. Y.	143
Alpha Wire Corp., 50 Howard St., New York	141	Guardian Electric Mfg. Co., 1400 W. Washington Blvd., Chicago	51	Premax Products Division, Niagara Falls, N. Y.	18
American Coil & Engineering Co., 1271 North Hermitage Ave., Chicago	136	Guthman & Co., Inc., Edwin I., 15 S. Throop St., Chicago	115	Presto Recording Corp., 242 W. 55th St., New York	135
American Condenser Co., 4410 North Ravenswood Ave., Chicago	129	Halldorson Co., 4500 N. Ravenswood Ave., Chicago	44	Price Electric Corp., East Church & 2nd Sts., Frederick, Md.	30
American Phenolic Corp., 1830 South 54th Ave., Cicero, Ill.	38	Hallcrafters Co., 2611 Indiana, Chicago	35	Quam-Nichols Co., 33d Pl. & Cottage Grove Ave., Chicago	82
American Radio Hardware Co., Inc., 152 MacQuesten Parkway, Mt. Vernon, N. Y.	29	Hardwick, Hindle, Inc., 40 Hermon St., Newark, N. J.	130	Racon Electric Co., Inc., 52 E. 19th St., New York	122
Amperex Electronic Corp., 79 Washington St., Brooklyn, N. Y.	67	Hammarlund Mfg. Co., Inc., 460 W. 34th St., New York	147	Rad-El-Co Mfg. Co., 6300 Euclid Ave., Cleveland, Ohio	160
Aniperite Co., 561 Broadway, New York	133	Hewlett-Packard Co., 395 Page Mill Road, Palo Alto, Cal.	126	Radiart Corp., 3571 W. 62nd St., Cleveland, Ohio	153
Astatic Corp., Conneaut, Ohio	95	Hickok Electrical Instrument Co., 10514 Dupont Ave., Cleveland, Ohio	99	Radio City Products Co., Inc., 127 West 26th St., New York	62
Atlas Sound Corp., 1443 39th St., Brooklyn, N. Y.	80	Hytron Radio & Electronics Corp., Salem, Mass.	69	Radio Essentials, Inc., 110 East 3rd St., Mt. Vernon, New York	71
Audio Devices, Inc., 444 Madison Ave., New York	96	Indiana Steel Products Co., 6 North Michigan Ave., Chicago	113	Radio Mfg. Engineers, Inc., 300-306 First Ave., Peoria, Ill.	77
Belden Mfg. Co., P. O. Box 5070A, Chicago	87	International Resistance Co., 401 N. Broad St., Philadelphia	103	Rauland Corp., 4245 N. Knox Ave., Chicago	83
Bell Sound Systems, Inc., 1183 Essex Ave., Columbus, Ohio	13	Insuline Corp. of America, 36-02 35th Ave., Long Island City, N. Y.	34	RCA, Camden, N. J.	145
Bliley Electric Co., Erie, Pa.	6	Jackson Electrical Instrument Co., 16-18 Patterson Blvd., Dayton, Ohio	53	Raytheon Mfg. Co., Newton, Mass.	110
David Bogen Co., 663 Broadway, New York	40	Jackson Industries, 1708 S. State St., Chicago	37	Recordisc Corp., 395 Broadway, New York	2
Brand & Co., William, 276 Fourth Ave., New York	105	Jefferson Electric Co., 25th Ave. & Madison St., Bellwood, Ill.	157	Reiner Electronics Co., Inc., 152 W. 25th St., N. Y.	48
British Industries Sales Corp., 276 Fourth Ave., New York	158	Jefferson-Travis Corp., 245 East 23rd St., New York	159	Rek-O-Kut Co., 146 Grand St., New York	70
Brush Development Co., 3405 Perkins Ave., Cleveland, Ohio	65	Jensen Radio Mfg. Co., 6601 S. Laramie Ave., Chicago	68	Schott Co., Walter L., 9306 Santa Monica Blvd., Beverly Hills, Cal.	116
Bud Radio, Inc., 2118 East 55th St., Cleveland	54	J. F. D. Mfg. Co., 4117 Fort Hamilton Parkway, Brooklyn, N. Y.	118	Shur-Antenna-Mount, Inc., Sea Cliff, N. Y.	162
Burgess Battery Co., Freeport, Ill.	156	Johnson Co., E. F., Waseca, Minn.	92	Shure Brothers, 225 W. Huron St., Chicago	85
Camburn, Inc., 490 Broome St., New York	22	Lectrohm Inc., 5129 W. 25th St., Cicero, Ill.	63	Simpson Electric Co., 5200-18 W. Kinzie St., Chicago	112
Cardwell Mfg. Corp., Allen D., 81 Prospect St., Brooklyn 1, N. Y.	97	Lenz Electric Mfg. Co., 1751 N. Western Ave., Chicago	152	Snyder Mfg. Co., 22nd & Ontario St., Philadelphia	50
Carron Mfg. Co., 415 S. Aberdeen St., Chicago	84	Littlefuse, Inc., 4757 North Ravenswood, Chicago	123	Solar Mfg. Corp., 285 Madison Ave., New York	148
Centralab, 900 E. Keefe Ave., Milwaukee, Wis.	39	Madison Electrical Products Co., 78 Main St., Madison, N. J.	55	Spirling Products Co., Inc., 60-62-64 Grand St., New York	10
Cinaudagraph Corp., Stamford, Conn.	161	P. R. Mallory & Co., Inc., 3029 East Washington St., Indianapolis, Ind.	36	Sprague Products Co., North Adams, Mass.	132
Clarostat Mfg. Co., Inc., 130 Clinton St., Bklyn.	124	Marion Electrical Instrument Co., Manchester, N. H.	17	Stamford Electric Products Co., Inc., Stamford, Conn.	14
Communication Measurements Lab., 120 Greenwich St., New York	28	Mark Simpson Mfg. Co., 186-194 West 4th St., New York	46	Standard Transformer Corp., 1500 North Halsted, Chicago	88
Continental Carbon Inc., 13900 Lorain Ave., Cleveland, Ohio	149	Meck Industries, John, Liberty St., Plymouth, Ind.	163	Stromberg-Carlson, Rochester, N. Y.	144
Continental Electric Co., Geneva, Ill.	25	Meissner Mfg. Co., Mt. Carmel, Ill.	81	Stupakoff Ceramic & Mfg. Co., Latrobe, Pa.	138
Corning Glass Works, Corning, N. Y.	66	Merit Coil and Transformer Corp., 4427 N. Clark St., Chicago	52	Supreme Instruments Corp., Greenwood, Miss.	101
Croname, Inc., 3701 N. Ravenswood Ave., Chicago	45	Millen Manufacturing Co., Inc., James, 150 Exchange St., Malden, Mass.	57	Sylvania Electric Products, Inc., Emporium, Pa.	86
Crystal Research Laboratories, Inc., 29 Allyn St., Hartford, Conn.	137	Milwaukee Stamping Co., 800 South 72nd St., Milwaukee	19	Talk-A-Phone Mfg. Co., 1512 S. Pulaski Rd., Chicago	121
DeMornay Budd, Inc., 475 Grand Concourse, New York	111	Muter Co., 1255 S. Michigan Ave., Chicago	89	Technical Appliance Corp., 41-06 DeLong St., N. Y.	146
Deutschmann Corp., Tobe, Canton, Mass.	76	McGrade Mfg. Co., E. W., Porter Building, Kansas City, Mo.	24	Telegraph Apparatus Co., 412 S. Green St., Chicago	4
Dial Light Co. of America, Inc., 900 Broadway, New York	60	McMurry Silver Co., 1240 Main St., Hartford, Conn.	16	Thordarson Electric Mfg. Div., 500 W. Huron St., Chicago	94
Drake Electric Works, Inc., 3656 Lincoln Ave., Chicago	73	National Co., Inc., 61 Sherman St., Malden, Mass.	108	Trimm, Inc., 1770 W. Berteau Ave., Chicago	74
Dumont Electric Corp., 34 Hubert St., New York	164	National Union Radio Corp., 15 Washington St., Newark, N. J.	9	Triplet Electrical Instrument Co., Bluffton, Ohio	139
Duotone Co., Inc., 799 Broadway, New York	21	New York Transformer Co., 62 William St., New York	140	Tung-Sol Lamp Works, Inc., 95 Eighth Ave., Newark, N. J.	61
DX Radio Products Co., 1200 N. Claremont Ave., Chicago	109	Ohio Tool Co., 3160 W. 106th St., Cleveland, Ohio	131	Turner Co., Cedar Rapids, Iowa	49
Eastern Amplifier Corp., 794 East 140th St., New York	125	Ohmite Mfg. Co., 4835 Flournoy St., Chicago	72	United Transformer Corp., 150 Varick St., New York	20
Eastern Electronics Corp., 41 Chestnut St., New Haven, Conn.	134	Operadio Mfg. Co., St. Charles, Ill.	155	Universal Microphone Co., Inglewood, Cal.	41
Electronic Soldering Iron Co., Inc., Deep River, Conn.	93	Oxford-Tartak Radio Corp., 3911 S. Michigan Ave., Chicago	5	University Laboratories, 225 W. 55th St., New York	56
Electrical Reactance Corp., Franklinville, N. Y.	91	Park Metalware Co., Inc., Bank St., Orchard Park, N. Y.	128	Utah Radio Products, 820 N. Orleans St., Chicago	106
Electro Products Laboratories, 549 West Randolph St., Chicago	127	Par-Metal Products Corp., 32-62 49th St., Long Island City, N. Y.	3	V-M Corp., 4th & Park Sts., Benton Harbor, Mich	154
Electronic Engineering Co., 3223 W. Armitage Ave., Chicago	42	Perma, Inc., 6415 Ravenswood Ave., Chicago	117	Ward Leonard Electric Co., Mt. Vernon, N. Y.	100
Electro-Voice, Inc., 1239 South Bend Ave., South Bend, Ind.	15	Permotlux Corp., 4900 W. Grand Ave., Chicago	32	Ward Products Corp., 1523 East 45th St., Cleveland, Ohio	102
Erwood Co., 223 West Erie St., Chicago	104	Philmore Mfg. Co., 113 University Pl., New York	119	Waterman Products Co., Inc., 2445-63 Emerald St., Philadelphia	26
Freed Transformer Co., 72 Spring St., New York	114			Webster-Chicago Corp., 5610 Bloomingdale Ave., Chicago	43
General Cement Mfg. Co., 919 Taylor Ave., Rockford, Ill.	79			Webster Electric Co., Clark & DeKoven Ave., Racine, Wis.	151
General Electric Co., Schenectady, N. Y.	58			Weller Mfg. Co., Easton, Pa.	47
General Electronics, Inc., 1917 N. Springfield Ave., Chicago	33			Westinghouse Electric Corp., Pittsburgh, Pa.	7
General Industries Co., Elyria, Ohio	120			Weston Electrical Instrument Corp., 614 Frelinghuysen Ave., Newark, N. J.	75

TV RECONNAISSANCE

Engineering details of RCA-Navy remote television equipment for military observation and control of guided missiles

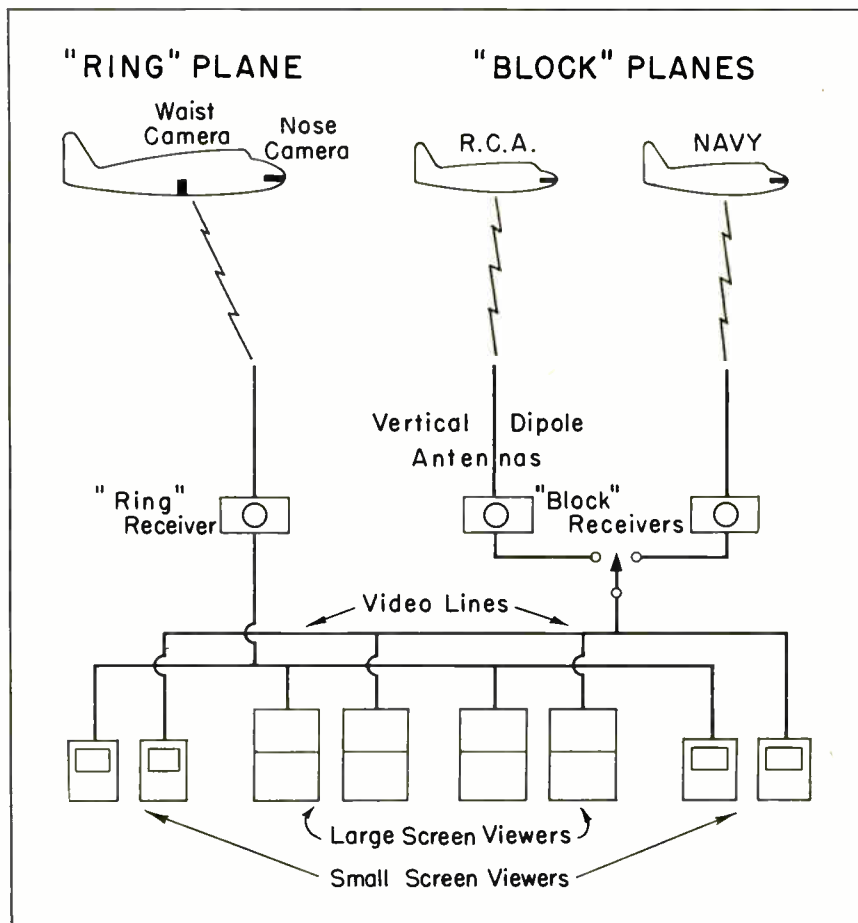
• Two airborne television systems, developed for military operations by scientists and engineers of the Navy and the Radio Corp. of America were demonstrated publicly for the first time at Anacostia Naval Air Base, D.C., late in March. The two systems, shown in operation for a couple of hours, bear the code names "Ring" and "Block", the former for long range television reconnaissance and the latter for short range observation and control of guided missiles.

Airborne equipment comprised four television cameras and three transmitters linked to three VHF television receivers on the ground, with provision for selective switching of video signals to eight television screens. In each group of two screens, the left hand viewer was associated with the two "Ring" type cameras, while the right hand viewer displayed either of the "Block" camera images. The three broad band receiving antennas were vertical dipoles, provided with corner reflectors which could be manually rotated to "track" the planes in flight.

The large-screen viewers provided 16 x 21 in. images, utilizing the video portions of RCA home television receivers of the Schmidt lens projection type. Four of the smaller direct-view home receivers were provided for photographic and other purposes. "Pilot's eye" observation of aerial maneuvers was demonstrated to nearly 200 press representatives assembled in the Anacostia gymnasium, including a "television tour" of Washington landmarks and a view of eleven Navy planes in mock combat over Annapolis.

Transmission standards

The "Ring" system standards were 567 lines, 40 fields, interlaced to form 20 frames/second. Video pass band from 20 c/s to 8 ms was obtained, 6db down at 10 mc. Two pickup cameras were used, one in the waist of the plane pointing down and using the new type 2P21 Image Orthicon, while



Arrangement of the RCA-Navy television network that relayed aerial views of Washington and vicinity to a group of observers in the Anacostia gymnasium. The terms "Ring" and "Block" were security code names assigned to this war development

another in the nose position used a type C7543C 4½ in. multiplier Orthicon, similar to the prewar type 1840 except for the addition of five stages of electron multiplication within the tube envelope.

Peak power of 1.4 kw was radiated from an exciter and power amplifier operating in the 90-102 mc band temporarily assigned to the "Ring" system. Complete switching and monitoring facilities were installed in the plane and operated by four engineers, in addition to Navy flight personnel. Maximum range of transmission under fair conditions of visibility was about 200 miles, requiring an altitude of 22,500 ft. "Ring" system equipment was originally designed,

developed and tested by the NBC Engineering Dept. in cooperation with the Navy Bureau of Ships.

The "Block" system transmission was based on 350 line, 40 frame/second, sequential scanning, using semi-fixed pickup cameras and an improved version of the type 1840 Orthicon tube. Mounted in the nose sections of two small planes provided by RCA and the Navy, these units weigh only 70 lb. but deliver a peak power output of 60 watts at 264 to 372 mc. This equipment was designed and manufactured by RCA. in collaboration with Com. T. W. Chew and C. L. Stec, Bureau of Ships, Lt. Com. F. Griffiths and Lt. W. E. Thorp, Bureau of Aeronautics, and R. S. Taylor, civilian.

1946

ELECTRONIC ENGINEERING

DIRECTORY



ELECTRONIC INDUSTRIES · CALDWELL-CLEMENTS, INC., 480 Lexington Ave., New York 17

FULLY SHIELDED



The "Super-Pro's" high-fidelity amplifier provides excellent broadcast quality—fine for use with record players when DX isn't coming through.

"SUPER PRO"

Series 400

.54-30 MC.

If you are troubled with spurious beats and images from powerful stations, you need a "Super-Pro." Complete shielding right up to the antenna terminals is one of the many features of the new Series 400 "Super-Pro."



HAMMARLUND

THE HAMMARLUND MFG. CO., INC., 460 W. 34TH ST., NEW YORK 1, N.Y.
MANUFACTURERS OF PRECISION COMMUNICATIONS EQUIPMENT

1946 ELECTRONIC ENGINEERING DIRECTORY

Believing that a directory is only as useful as its index, Electronic Industries has thoroughly cross-referenced all product listings under their various common names.

This Directory of radio-electronic-television sources of supply, is most complete and up-to-date, having been totally compiled and revised during 1946, with a final check-survey of manufacturers and their products completed as late as March and April of the present year.

To find the manufacturer of any product, look first in the Index, beginning on this page. For example, "Counters, electronic 12-C", means that under Section 12, "Electronic Control Equipment", the letter "C" after a manufacturer's name indicates his ability to supply electronic counting devices.

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Microphones, velocity	22-VEL
Microscopes, electron	13-E
Mike cable	42-MC
Mike cable transformers	38-MT
Miniature control motors	23-MM
Miniature tubes	40-MT
Mirrors, inspection	15-M
Mobile amplifiers	35-M
Mobile transceivers	39-AU
Modulation meters	20-MM
Moisture meters	13-MM
Moisture proofing compounds	25-WC
Molding compounds, record	32-RP
Molding presses	19-MP
Molybdenum	21-M
Monitor equip., bdst.	39-TM
Monitors, deviation	20-FD
Motor generator chargers	3-MG
Motor & generator controls	12-MC
Motor starters	23-MS
Motors	23-M
Motors, automatic tuning	2-M
Motors, remote control	23-MM

PRODUCT	CLASSIFICATION
Motors, selsyn	23-S
Motors, turntable	23-T
Mounting brackets	16-MB
Mountings, shockproof	16-SM
Multi-meters	20-M
Multiplier, electron tube	40-FM
Multivibrators	18-MV
Musical instr. amplifiers	35-E
Musical instruments, electronic	35-E

N

Name plates	10-N
Navigational radar	30-MN
Needles	33-N
Needles (cutting)	32-CN
Neg. temp. coeff. resis.	34-N
Neon test lights	20-N
Neutralizing capacitors	7-N
Nickel	21-N
Nickel tubing	21-NT
Noise meters	24-IA
Noise locators	24-I
Numbering machines	19-MN
Nuts	16-N
Nuts, lock and self-locking	16-NL

O

Ohmmeters	20-O
Dil	6-O
Optical equipment	18-OE
Oscillator crystals	9-F
Oscillators, audio	18-SA
Oscillators, frequency modulated	18-SF
Oscillators, tuning fork	18-TF
Oscillators, ultrasonic	18-UO
Oscillators, video-range	18-VO
Oscillographs, cathode ray	18-O
Oscillographs, direct-writing	18-OD
Oscilloscopes (radar)	30-O
Outlets	1-O
Output meters	20-OM

P

Package wrapping controls	12-P
Paging systems	35-I
Paint	25-P
Panel signal lights	10-S
Panels	5-P
Panoramic receivers	31-PN
Panoramic indicators	18-PA
Paper capacitors	6-P
Paper	17-P
Paper, capacitor	17-CP
Paper, drafting	11-O
Paper, sensitized	11-SP
Paper tubing	17-PT
Parts bins	5-B
Parts molders, plastic	28-P
Pattern markers, X-Ray	19-X
P. E. densitometers	20-PE
Pencils and accessories	11-P
Pens, drafting	11-DI
Permanent magnets	21-PM
PH meters	20-PH
Phantom antennas	1-DA
Phase angle meters	20-P
Phenols	27-PH
Phono pickups, crystal	33-PC
Phono pickups, dynamic	33-D
Phono pickups, magnetic	33-PM
Phonograph motors	23-T
Phonograph needles	33-N
Phonograph records	33-R
Phonograph turntables	33-TT
Phonographs, electric	33-EL
Phonographs, hand wound	33-HW
Phono-radio combinations	31-PR
Phosphor bronze	21-SC
Photo-cell relays	26-RC
Photo cells	26-PC
Photo-electric controls	26-EE
Photometers	26-PM
Photometers, anoxia	13-AP
Phototubes	40-PH
Pickups (crystal)	33-PC
Pickups (dynamic)	33-D
Pickups (magnetic)	33-PM
Pilot light assemblies	16-PL
Pilot lights	10-JL
Pin straightener	15-TS
Pins, solderless	16-PS
Pins, vacuum tube base	41-BP
Plan-position indicators	30-PPI
Plastic cabinets	28-C
Plastic fabricators	28-F
Plastic, laminated	27-L
Plastic materials	27
Plastic molders	28-P
Plastic molding presses	19-MP
Plastics	17-PL
Plastics, extruded	28-E
Platers, electric	15-E
Plates, escutcheon	10-E
Plates, name	10-N
Plating services	21-MF
Platinum	21-P
Pliers	15-P
Plug-in condensers	6-PF
Plug-in resistors (tubes)	34-PT
Plug-in transformers	38-PT
Plugs	16-P

PRODUCT	CLASSIFICATION
PM drivers	36-PD
PM dynamic speakers	36-PM
Pocket radios	31-CP
Points, contact	16-CM
Polarized relays	37-RP
Police receivers	31-PL
Police (xmitters)	39-P
Polyethylene	27-PE
Polystyrene	27-P
Polystyrene insulated cap.	6-PO
Porous bearing metals	21-PB
Portable AM-FM receivers	31-BP
Portable radios, battery	31-BP
Portable radios, pocket	31-CP
Portable set cases	5-PC
Portable transceivers	39-CR
Position controls	12-PC
Potentiometers, slide-wire	34-S
Potentiometers, variable	34-V
Pots, solder	15-ST
Powdered iron cores	21-CP
Powdered metal press	19-PM
Power amplifiers	35-PA
Power filter chokes	38-C
Power filters	24-P
Power level meters	20-OM
Power plants	23-AC
Power, receiving-transmitting transformers	38-P
Power rectifier tubes	40-I
Power rheostats	34-PR
Power supplies, regulated	18-PR
Power supplies, unregulated	18-PU
Power supplies, vibrator	29-VP
Preamplifiers	35-PRE
Precision capacitors	7-P
Precision resistors	34-PRE
Preforms, record	32-RP
Presses, plastic molding	19-PM
Presses, powdered metal	19-PP
Presses, punch	19-PP
Pressure controls	12-VC
Pressure measurements	20-PM
Pressure switch	37-PS
Pressure welding electrodes	19-PW
Print making machines	11-BM
Printing controls	12-PT
Projector horns	36-PH
Proximity indicators	30-PI
Public address amplifiers	35-PA
Pulse generators	18-PG
Pumps, vacuum	19-VP
Punch press	19-PP
Punches	15-PU
Push button switch	37-PB
Push button trimmer units (complete)	2-PT
Push button tuners (complete, motor driven)	2-PM
Pyrometers	20-T

Q

Q meter	20-QE
Quartz crystals	9-QC
Quartz cutting machines	19-QC
Quartz, fused parts	41-Q
Quartz, raw	9-Q

R

Racks	5-R
Racks, car-top speaker	35-CR
Radar, aircraft landing	30-ALC
Radar altimeters	30-AL
Radar, navigational	30-MN
Radar oscilloscopes	30-O
Radar receivers	30-R
Radar repeaters	30-RP
Radio dry batteries	4-R
Radio harness	42-H
Radio receivers, AM home	31-PR
Radio set analyzers	20-R
Radio set filters	24-S
Radio spectrum analyzers	18-RA
Radio-phono combinations	31-PR
Radiophoto receivers	31-FR
Radiophoto transmitters	39-FAC
Radio-recorder combinations	31-RC
Radios, AM-FM comb.	31-FM
Radios, farm	31-F
Radioteletype transmitters	39-RT
Radio-television comb.	31-TC
Railroad receivers	31-RR
Railroad antennas	1-RR
Rare gases	41-RG
Ratchet wrenches	15-RW
Raw quartz	9-Q
Razon receivers	30-R
RCM radar receivers	30-R
Reactors, fluorescent	38-R
Receiver-recorder combinations	31-RC
Receiver tuning capacitors	7-RT
Receivers, AM home	31-PR
Receivers, console home	31-PR
Receivers, direction finder	31-DF
Receivers, fixed frequency	31-FF
Receivers, marine	31-M
Receivers, panoramic	31-PN
Receivers, police	31-PL
Receivers, radio-phono comb.	31-PR
Receivers, railroad	31-RR
Receivers (RGM, rason, X band)	30-R

PRODUCT	CLASSIFICATION
Receivers, table AM	31-PR
Receiving tubes	40-R
Receptacles, plug	16-J
Record changers, auto	33-ARC
Record compounds	33-RC
Record players, coin	33-CM
Record players, hand-wound	33-HW
Record players, transcription	33-TR
Record preforms and molding compounds	32-RP
Record presses	33-RM
Recorder-radio combinations	31-RC
Recorders, code	32-CR
Recorders, dielectric const.	20-DC
Recorders, film	32-F
Recorders, frequency response	20-FR
Recorders, graphic	32-RT
Recorders, magnetic wire	32-MT
Recorders, sound level	20-S
Recording cutters	32-CN
Recording discs	32-D
Recording equalizers	32-E
Recording machine asm.	32-RA
Recording machines	32-RM
Recording motors	32-TT
Recording needles	32-CN
Recording services	33-RS
Recording turntables	32-TT
Records	33-R
Records, freq. test	33-FR
Records, sound effect	33-S
Rectifier power units	29-PU
Rectifier tubes, industrial	40-I
Rectifiers, battery electric	3-V
Rectifiers, electronic	29-V
Rectifiers, mercury arc	29-MA
Rectifiers, metallic	29-M
Reflection meters	20-RM
Regulated power supplies	18-PR
Regulating transformers	38-VR
Regulating tubes	40-B
Regulator tubes, voltage	40-VC
Relays	37-R
Relays, capacitor	37-CR
Relays, differential	37-DR
Relays, mercury	37-M
Relays, photo-cell	26-R
Relays, polarized	37-RP
Relays, stepping	37-SR
Relays, time delay	37-TD
Reliefs, strain	16-ST
Remote control motors	23-MM
Remote control tuners	2-R
Remote controllers	35-RC
Repairing, vacuum tube	41-TR
Repeaters, radar	30-RP
Resin	25-R
Resins, cast	27-RC
Resins, vinyl	27-V
Resistance cords	42-RC
Resistance decade boxes	18-RD
Resistance specialties	18-R
Resistance standards	34-PRE
Resistance wire	42-R
Resistors, fixed composition	34-FC
Resistors, fixed wirewound	34-FW
Resistors, high freq. slugs	34-HR
Resistors, neu. coeff.	34-N
Resistors, plug-in	34-PT
Resistors, precision	34-PRE
Resistors, variable	34-V
Resonators, UHF	41-C
Retaining rings	16-RR
R. F. chokes (receiving)	8-CH
R. F. chokes (transmitting)	8-RT
R. F. coils (receiving)	8-RF
R. F. coils (transmitting)	8-T
R. F. oscillators	18-SR
Rheostats, power	34-PR
Ribbon microphones	22-VEL
Rings, retaining	16-RR
Riveter, automatic	19-R
Rivets	16-R
Rochelle salt crystals	9-R
Rotary beam	1-RB
Rotary selector switches	37-SL
Rotatable transformers	38-RT
Rubber, dial drive	10-DR
Rubber insulation	17-RI
Rubber shielding	16-SR

S

Safety control, machine	12-MS
Safety interlocks	37-S
Safety terminals	16-S
Salt-spray cabinets	18-SC
Saw blades, crystal	19-C
Scales, dial	10-F
Scales & tapes	15-SA
Screen wire	21-WC
Screens, X-ray fluoroscope	13-F
Screw machine products	21-SP
Screwdrivers	15-SD
Screws	16-S
Screws, self-tapping	16-SS
Screws, set	16-ST
Sedative generator, electronic	13-EG
Selenium cells	26-PC
Self locking nuts	16-NL
Self-tapping screws	16-SS
Selsyns, etc.	23-S
Sensitized papers	11-SP

PRODUCT	CLASSIFICATION	PRODUCT	CLASSIFICATION	PRODUCT	CLASSIFICATION	PRODUCT	CLASSIFICATION
Servo amplifiers	12-SA	Starters, fluorescent lamp	37-FS	Transformers, plug in	38-PT	Varnished tubing	17-T
Servo control systems	12-SI	Starters, motor	23-MS	Transformers, power	38-P	Velocity microphones	22-VEL
Servo indicating systems	12-SI	Steel, metal coated	21-CS	Transformers, welding	38-WT	Velocity modulated tubes	40-VM
Set analyzers	20-R	Steel, stainless	21-ST	Translators, FM receiver	31-FV	Ventilators	19-B
Set screws	16-ST	Steel tubing	21-FT	Trans. measuring set	20-TR	Vest pocket receivers	19-B
Shaft locks	10-SL	Stepping relays	37-SR	Transcription record players	33-TR	Vibration analyzers	20-VM
Shafts, flexible	14-FS	Stethaphones	22-S	Transmission cable, antenna	42-AN	Vibration control equipment	19-VC
Shake tables	19-VC	Stethographs and stethophones	13-ST	Transmission monitor equip.	39-TM	Vibration measuring equip.	20-VM
Sheet metal	21-SH	Stimulators, cortical	13-C	Transmitter keys	39-K	Vibration testers	19-VC
Shielded ignition wire	42-SI	Stools	11-ST	Transmitter tuning capacitors	7-TT	Vibrator power packs	29-VF
Shielded wire	42-S	Storage batteries	4-S	Transmitters, amateur	39-A	Vibrator freq. changers	29-VF
Shielding, rubber	16-SR	Storage-non-spill batteries	4-SN	Transmitters, aviation	39-AV	Vibrator rectifier chargers	3-V
Shielding, wire	42-WS	Strain gauges	19-SG	Transmitters, broadcast	39-BC	Vibrators	29-V
Shields, coil	16-CS	Strain reliefs	16-ST	Transmitters, code	39-CW	Video pattern generators	18-VP
Shields, tube	16-TS	Straps, leather	5-L	Transmitters, direction finding	39-DF	Video-range oscillators	18-VO
Shims, speaker adjusting	36-S	Strippers, wire	15-WS	Transmitters, facsimile	39-FAC	Vinyl resins	27-V
Shock machines, electronic	13-S	Strips, terminal	16-T	Transmitters, F. M.	39-FM	Viscosimeters	20-VC
Shockproof mounts	16-SM	Strobescopes	18-ST	Transmitters, marine	39-M	Vises	15-V
Short wave antennas	1-HF	Studio control consoles	39-CC	Transmitters, police	39-P	Voltage amplifiers	35-PRE
Short wave diathermy	13-D	Studio equipment	39-SE	Transmitters, television	39-T	Voltage control tubes	40-VC
Side cutters	15-SC	Studios, recording	33-RS	Transmitting	6-T	Voltage regulating transformers	38-VR
Signal generators, A. F.	18-SA	Styli, recording	32-CN	Transmitting tubes	40-T	Voltage regulator tubes	40-VC
Signal generators, F. M.	18-SF	Sun lamps	13-GL	Trays & tote baskets	5-T	Voltage regulators	29-VR
Signal generators, R. F.	18-SR	Suppressor resistors	34-SU	Trimmer capacitors, air	7-A	Voltmeters	20-V
Signal generators, video pattern	18-VP	Surface analyzers	18-SM	Trimmer capacitors, ceramic	7-OT	Voltmeters, electrostatic	20-E
Signal generators, video-range	18-VO	SVEA metal	21-I	Trimmer capacitors, mica	7-M	Voltmeters, vacuum tube	20-VT
Signal lights, panel	10-S	Switch, pressure operated	37-PS	Trimmer condenser units	2-CU	Volume controls	34-VC
Signal tracers	20-SG	Switches, electronic	18-ES	Trimmer units, inductance	2-IT	Volume indicators	20-VI
Silicone compounds	27-S	Switches, float type	37-F	Tube base pins	41-BP	Vu meters	20-OM
Silicone materials	17-SM	Switches, key	37-SK	Tube bases	41-B		
Silver brazing alloys	21-SB	Switches, knife	37-SK	Tube cavities	41-C		
Silver & compounds	21-AG	Switches, mercury	37-MS	Tube clamps	16-TC		
Silvered mica	6-S	Switches, push-button	37-PB	Tube connectors	16-TB		
Slide switches	37-SL	Switches, receiver band	37-W	Tube grids	41-GS		
Slide-wire potentiometers	34-S	Switches, rotary	37-SL	Tube pin straightener	15-TS		
Smoke density controls	12-S	Switches, slide	37-SS	Tube pullers	15-TP		
Socket wrenches	15-SW	Switches, solenoid	37-SO	Tube repairing	41-TR		
Sockets, dial light	10-PL	Switches, thermal	37-T	Tube seal leads	41-TS		
Sockets, tube	16-SKT	Switches, time	37-TE	Tube shields	16-TS		
Solder	15-S	Switches, toggle	37-TO	Tube sockets	16-SKT		
Solder flux, liquid	15-SF	Switches, transmitter band	37-WT	Tube testers	20-TT		
Solder flux, paste	15-SF	Switches, tuning	2-S	Tubes, bases	41-B		
Solder pots	15-SP	Switches, vacuum	37-V	Tubes, glass bulbs	41-GB		
Soldering iron stands	15-SS			Tubes, television types	40-TT		
Soldering iron tips	15-SE			Tubes, transmitting	40-T		
Soldering irons (etc.)	15-SI			Tubing, aluminum	21-AT		
Soldering lugs	16-SL			Tubing, brass	21-BT		
Soldering machines	19-SM			Tubing, copper	21-CT		
Solderless links	16-LI			Tubing, glass	17-G		
Solderless lugs	16-L			Tubing, monel metal	21-ML		
Solderless pins	16-PS			Tubing, nickel	21-NT		
Solenoid valves	12-SV			Tubing, paper	17-PT		
Solenoids	37-SO			Tubing, steel	21-ST		
Solid dielectric-UHF wire	42-SD			Tubing, varnished	17-T		
Solvents	25-S			Tungsten	21-T		
Sorting controls, electronic	12-G			Tuning capacitors, receiver	7-FT		
Sound effect records	33-S			Tuning capacitors, transmitter	7-TT		
Sound level meters & recorders	20-S			Tuning for oscillators	18-TO		
Sound recording machines, prof.	32-RM			Tuning forks	20-TF		
Sound systems (complete)	35-SS			Tuning motors	2-M		
Spark plug suppressors	34-SU			Tuning units, geared	2-GC		
Speaker baffles	36-B			Tuning units, mechanical auto.	2-MS		
Speaker cabinets	36-C			Tuning units, remote	2-R		
Speaker cones	36-C			Turntable felt, phono.	33-F		
Speaker field coils	36-F			Turntable motors	23-T		
Speaker field exciters	36-FE			Turntables	33-TT		
Speaker grille cloths	36-GC			Turntables, recording	32-TT		
Speaker racks, car-top	35-CR			Twist drills	15-T		
Speaker shims, adjusting	36-S						
Speaker stands	36-ST						
Speakers, crystal	36-CS						
Speakers, electrodynamic	36-D						
Speakers, magnetic	36-M						
Speakers, PM dynamic	36-PM						
Special gaseous tubes	40-G						
Special lubricants	25-SL						
Special tubes	40-ST						
Spectrographic equipment	18-S						
Speech amplifiers	39-SA						
Speech input consoles	39-CC						
Spot welders	19-S						
Spring clips	16-SC						
Spring contact metals	21-SC						
Spring motors, phono.	33-HW						
Spring testing equip.	20-ST						
Springs	16-SP						
Springs, antenna grounding	1-GS						
Springs, knob	10-KS						
Square wave gen.	18-SW						
Stainless steel	21-ST						
Stamped parts, tube	41-S						
Stampings	21-S						
Standard capacitors	6-ST						
Standard cells	4-C						
Standard inductors	18-L						
Standard resistors	34-PRE						
Stand-off insulators	17-SO						
Stand-offs, antenna	1-I						
Stands, soldering iron	15-SS						
Stands, speaker	36-ST						
Staple driver	15-SH						
Starters, fluorescent lamp	6-FS						
Table model receivers	31-PR						
Tables, drafting	11-DT						
Tabs, call letter	10-CL						
Tachometer	20-TA						
Tachometer, stroboscopic	18-ST						
Tantalum	21-TA						
Tape, coil insulating	17-ST						
Tape, friction	17-FT						
Tapes, measuring	15-TS						
Telegraph keys	39-K						
Telephone dials	10-T						
Telephone handsets	22-T						
Teletype, radio	39-RT						
Television combinations	31-TC						
Television converters	31-TV						
Television & FM antennas	1-TL						
Television receivers	31-TC						
Television transmitters	39-T						
Television tubes	40-TT						
Temperature compens. cap.	6-TC						
Temperature controls	12-TC						
Temperature indicators	13-TI						
Temperature indicators, elect.	20-T						
Temperature test cabinets	18-TT						
Terminal strips	16-T						
Terminals	16-TE						
Terminals, hermetic	16-TH						
Terminals, safety	16-ST						
Test records, phono.	33-FR						
Testers, battery	20-BT						
Testers, insulation	20-IT						
Testers, tube	20-TT						
Thermal switches	37-T						
Thermistors	18-R						
Thermocouples	20-TH						
Thermometers & pyrometers	20-T						
Thermostatic metals	21-TM						
Time controls	12-TI						
Time delay relays	37-TD						
Time measurement	20-TM						
Timers	37-TE						
Tin alloys	21-LT						
Tin foil	21-FO						
Tips, soldering iron	15-SE						
Toggle switches	37-TO						
Tourmaline crystals	9-TO						
Towers & supports (home)	1-T						
Tracing cloth	11-TC						
Traffic controls	12-TR						
Transceivers, mobile	39-AU						
Transceivers, portable	39-CP						
Transcriptions, broadcast	33-BT						
Transformer coils & windings	38-CW						
Transformers, audio	38-A						
Transformers, auto	38-AU						
Transformers, current	38-T						
UHF antennas	1-RA						
UHF cable	42-SD						
UHF cavities	41-C						
UHF wave guides	42-W						
Ultrasonic oscillators	18-SO						
Ultra violet generators	13-GL						
Urea	27-U						
Vacuum capacitors	7-V						
Vacuum cond.	6-V						
Vacuum gauges	20-VG						
Vacuum greases	25-VG						
Vacuum pumps	19-VP						
Vacuum switches	37-V						
Vacuum tube bases	41-B						
Vacuum tube getters	41-G						
Vacuum tube grids	41-GS						
Vacuum tube machinery	19-VM						
Vacuum tube mica parts	41-M						
Vac. tube voltmeters	20-VT						
Vacuum tubes, miniature	40-MT						
Vacuum tubes, receiving	40-R						
Vacuum tubes, special	40-ST						
Vacuum tubes, television	40-TT						
Vacuum tubes, transmitting	40-TT						
Valves, solenoid	12-SV						
Variable resistors	34-V						
Varnish	25-V						
Varnished fabrics	17-VF						
Walkie-talkies	39-CR						
Washers, brass	16-WB						
Washers, felt	16-WF						
Washers, fibre	16-FW						
Washers, lock	16-WL						
Washers, plastic	16-WP						
Washers, rubber	16-WR						
Waterproofing comp.	25-WC						
Watt-hour meters	20-WH						

ELECTRONIC ENGINEERING DIRECTORY

Listings of all products and items entering into
radio, radar, and industrial electronic equipment

(1) Antennas & Accessories



Airplane antenna	AA
All-wave (home)	AW
Antenna reeling equipment	AR
Auto	A
Dummy antenna	DA
Feeder spreaders	FS
Ground clamps	G
Grounding springs	GS
HF assemblies	HF
Insulators	I
Kits	K
Lightning arresters	L
Loop antennas	LA
Master systems	MS
Outlets	O
Railroad	RR
Rotary beam	RB
Television & FM	TL
Towers & Supports (home)	T

Aeronautical Radio Mfg. Co., 155 First St., Mineola, L. I., N. Y.—AA, I, LA
 Air Communications, Inc., 2233 Grand Ave., Kansas City, Mo.—LA
 Aireon Mfg. Corp., Fairfax & Funston Rds., Kansas City 15, Kan.—AA, LA
 Airplane & Marine Instruments, Inc., Clearfield, Pa.—LA, RR
 Air-Track Mfg. Co., A Div. of Aerodynamic Research Corp., 5009 Calvert Road, College Park, Md.—AA, DA, HF
 Aironics Development Corp., 131-133 E. Third St., Dayton 2, Ohio—HF
 Alpha Wire Corp., 50 Howard St., New York 13, N. Y. G. I. K, L, MS, TL
 American Bridge Co., Frick Bldg., Pittsburgh, Pa.—TL, T
 American Communications Corp., 306 Broadway, New York, N. Y.—A, W, G, K, LA, MS, O
 American Radio Hardware Co., 152-4 MacQuessen Parkway, S., Mt. Vernon, N. Y.—I
 Amy, Aceves & King, Inc., 11 W. 42nd St., New York 18, N. Y.—“Multicoupler”—AW, MS, O, TL
 Andrew Co., 363 E. 75th St., Chicago 19, Ill.—HF
 Ansonia Electrical Co., 63 Main St., Ansonia, Conn.—TL
 Atlas Products Corp., 30 Rockefeller Plaza, New York 20, N. Y.—G
 Atlas Sound Corp., 1443 39th St., Brooklyn 18, N. Y. TL, T
 Barker & Williamson, Upper Darby, Pa.—DA, FS, HF, I, K, LA, MS, RB, TL
 Bassett, Rex, Inc., 307-11 N. W. 1st Ave., Ft. Lauderdale, Fla.—AA, LA
 Belden Mfg. Co., P. O. Box 5070A, Chicago 80, Ill.—AW, G, I, K, L
 Bendix Aviation Corp., Bendix Radio Div., E. Joppa Rd., Baltimore, Md.—RR
 Bircó—Birnback Radio Co.
 Bird Electronic Corp., 1800 E. 38th St., Cleveland 14, Ohio—HF
 Birnback Radio Co., Inc., 145 Hudson St., New York 13, N. Y.—“Bircó”—AW, FS, G, I, K, L, TL
 Bittermann Electric Co., 50 Henry St., Brooklyn 2, N. Y.—LA
 Blaw Knox Co., Blaw Knox Div., Box 1198, Pittsburgh 30, Pa.—TL, T
 Charles J. Bodnar Co., 68 Marbledale Rd., Tuckahoe 7, N. Y.—“BRL”—TL
 Brach Mfg. Corp., L. S., 55 Dickerson St., Newark 4, N. J.—AW, A, HF, TL, T
 BRL—Charles J. Bodnar Co.
 Bud Radio, Inc., 2118 E. 55th St., Cleveland 3, Ohio—FS, I
 Burton-Rogers Co., 857 Boylston St., Boston 16, Mass.—A

Carborundum Co., Global Div., Niagara Falls, N. Y.—DA, L
 Centralab Div. of Globe-Union, Inc., 900 E. Keefe Ave., Milwaukee 1, Wis.—I
 Clampie—Mueller Electric Co.
 Columbia Wire & Supply Co., 4106 N. Pulaski Rd., Chicago 41, Ill.—AW, K, TL
 Commercial Radio Sound Corp., 575 Lexington Ave., New York 23, N. Y.—AW, MS, TL
 Communications Co., Inc., 300 Greco Ave., Coral Gables 34, Fla.—AA, DA, LA, RR
 Continental-Diamond Fibre Co., Newark 50, Del.—I
 Copperweld Steel Co., Glassport, Pa.—AA, G
 Cook Ceramic Mfg. Co., 500 Prospect St., Trenton, N. J.—I
 Corning Glass Works, Corning, N. Y.—“Pyrex”—I
 Cornish Wire Co., Inc., 15 Park Row, New York 7, N. Y.—“Noise-Master”—AW, G, HF, K, L
 Dalmo Victor, Div. of Goldfield Consolidated Mines Co., 1414 El Camino Real, San Carlos, Calif.—AA
 Dayton Acme Co., 930 York St., Cincinnati 14, Ohio—AA, DA, HF
 DeMornay-Budd, Inc., 475 Grand Concourse, New York 51, N. Y.—HF
 Diamond Instrument Co., North Ave., Wakefield, Mass.—AA, DA
 Dielectric Products Co., Inc., 125 Virginia Ave., Jersey City 5, N. J.—RB, TL
 Dehler-Jarvis Corp., Robertson St., Batavia, N. Y.—A, FS, G, O
 Doolittle Radio, Inc., 7421 S. Loomis Blvd., Chicago 36, Ill.—AA, A, HF
 Drake Co., R. L., 11 Longworth St., Dayton 2, Ohio—LA
 D-X Radio Products Co., 1200 N. Claremont Ave., Chicago 22, Ill.—AW, LA
 Eagle Electric Mfg. Co., Inc., 23-10 Bridge Plaza, S., Long Island City 1, N. Y.—G, K
 Electrical Reactance Corp., Franklinville, N. Y.—AW, A, LA
 Electro-Marine Co., 274 Madison Ave., New York 16, N. Y.—HF, O
 Electronic Engineers, 611 E. Garfield Ave., Glendale 5, Calif.—AA
 Electronic Plumbing Corp., 311 Nepperhan Ave., Yonkers 2, N. Y.—HF, TL
 Electronic Research Corp., 2655 W. 19th St., Chicago 8, Ill.—TL
 Electronic Specialties Mfg. Co., 68 High St., Worcester 2, Mass.—HF
 Electronic Specialty Co., 3456 Glendale Blvd., Los Angeles 26, Calif.—AA
 Elkay Radio Products, 305-9 E. Walnut St., Oglesby, Ill.—K
 Erco Radio Laboratories, Inc., 231 Main St., Hempstead, L. I., N. Y.—AA, A, LA
 Essex Electronics, 1060 Broad St., Newark 2, N. J.—LA
 Fairchild Camera & Instrument Corp., 88-06 Van Wyck Blvd., Jamaica 1, L. I., N. Y.—LA
 Federal Telephone & Radio Corp., 200 Mt. Pleasant Ave., Newark 4, N. J.—A, HF, RB, TL
 Fleron, M. M., & Son, Inc., 113 N. Broad St., Trenton, N. J.—“Fleron”—AW, G, I, K, L, O, TL, T
 Franklin Airloop Corp., 175 Varick St., New York 14, N. Y.—LA

Franklin Mfg. Corp., A. W., 175 Varick St., New York 14, N. Y.—LA
 Gardiner Mfg. Co., 2711 Union St., Oakland 7, Calif.—I
 Garner Electronics Corp., 1100 W. Washington Blvd., Chicago 7, Ill.—A, K, LA
 General Ceramics & Steatite Corp., Clows Mill Rd., Keasbey, N. J.—I
 General Communication Co., 530 Commonwealth Ave., Boston 15, Mass.—AR, LA
 General Winding Co., 420 W. 45th St., New York 19, N. Y.—“Gen Win”—AW, HF, TL
 Gen-Win—General Winding Co.
 Gussack Machined Products Co., 10-20 45th Rd., Long Island City 1, N. Y.—AA, AW, LA
 Harco Tower, Inc., 1180 E. Broad St., Elizabeth 4, N. J.—TL, T
 Hardwick, Hindle, Inc., 40 Hermon St., Newark 5, N. J.—DA
 Harvey Machine Co., Inc., 6200 Avalon Blvd., Los Angeles 3, Calif.—AW, LA, TL
 Higgins Industries, Inc., 2221 Warwick Ave., Santa Monica, Calif.—HF
 Howard Pacific Corp., 932 N. Western Ave., Los Angeles 27, Calif.—HF
 ICA—Insuline Corp. of America
 Insuline Corp. of America, 36-02 35th Ave., Long Island City 10, N. Y.—“ICA”—AW, A, I, K, L, LA, TL
 International Derrick & Equipment Co., 875 Michigan Ave., Columbus 8, Ohio—TL, T
 International Products Corp., 2554 Greenmount Ave., Baltimore 18, Md.—AR, I
 Interstate Mfg. Corp., 125 Sussex Ave., Newark 4, N. J.—AW, A
 Intex Co., 303 W. 42nd St., New York 18, N. Y.—A
 Islip Radio Mfg. Corp., Islip, N. Y.—AA, AR, LA
 Isolantite, Inc., 343 Cortlandt St., Belleville 9, N. J.—FS, HF, I
 Jacksonville Metal Mfg. Co., 247 Riverside Ave., Jacksonville 4, Fla.—T
 Jefferson, Inc., Ray, 40 E. Merrick Rd., Freeport, L. I., N. Y.—HF
 J.F.D. Mfg. Co., 4117 Fort Hamilton Parkway, Brooklyn 19, N. Y.—“JFD”—AW, A, I, K, LA, TL
 Johnson Co., E. F., Waseca, Minn.—DA, FS, I, RB
 Kaar Engineering Co., 619 Emerson St., Palo Alto, Calif.—A
 Kelllogg Switchboard & Supply Co., 6650 S. Cicero Ave., Chicago 38, Ill.—G, L
 Kent, Walter A., Co., 2826 W. 55th St., Chicago, Ill.—TL
 Kings Electronics Co., 372 Classon Ave., Brooklyn 5, N. Y.—AA, DA, HF, I
 Kriseher Metal Products Co., 631-7 Kent Ave., Brooklyn 11, N. Y.—G
 Lapp Insulator Co., Inc., 24 Craigie St., Le Roy, N. Y.—DA, FS, I
 Lavoie Laboratories, Matawan-Freehold Rd., Morganville, N. J.—AA, AW, A, HF, TL
 Lehigh Structural Steel Co., 17 Battery Place, New York, N. Y.—T
 Lenoxite Division, Lenox, Inc., 65 Prince St., Trenton 5, N. J.—I
 Lewyt Corp., 60 Broadway, Brooklyn 11, N. Y.—HF

This Directory of radio-electronic-television sources of supply, is most complete and up-to-date, having been totally compiled and revised during 1946, with a final check-survey of manufacturers and their products completed as late as March and April of this year.

Lingo & Son, John E., Inc., 28th St. & Buren Ave., Camden, N. J.—TL
 Link, Fred M., 125 W. 17th St, New York 11, N. Y.—A, HF, TL
 Littelfuse, Inc., 4757 Ravenswood Ave., Chicago 40, Ill.—L
 Locke Insulator Corp., P. O. Box 57, Baltimore 3, Md.—I
 Lord Mfg. Co., 1635 W. 12th St., Erie, Pa.—I
 Maguire Industries, 1437 Railroad Ave., Bridgeport, Conn.—HF, RR
 McInerney Plastics Co., 25 Commerce Ave., S.W., Grand Rapids 2, Mich.—I
 Mec-Rad Division of Black Industries, 1400 E. 222nd St., Cleveland 17, Ohio—AA, HF, TL
 Megard Corp., 1601 S. Burlington Ave., Los Angeles 6, Calif.—LA
 Mendelsohn Speedgun Co., 457 Bloomfield Ave., Bloomfield, N. J.—O
 Millen Mfg. Co., James, Inc., 150 Exchange St., Malden 48, Mass.—DA, FS, HF, I
 Molded Insulation Co., Aircraft Control Div., 335 E. Price St., Philadelphia 44, Pa.—AA, AR
 Mueller Electric Co., 1583 E. 31st St., Cleveland 14, Ohio—"Clampipe"—"Universal"—G
 Multicoupler—Amy, Aceves & King Muter Co., 1255 S. Michigan Ave., Chicago 5, Ill.—LA
 Myalex Corp. of America, 60 Clifton Blvd., Clifton, N. J.—I
 M & Z Industrial Development Co., 32 W. 12th St., Bayonne, N. J.—TL
 National Ceramic Co., 400 Southard St., Trenton 2, N. J.—I
 New England Radiocrafters, 1156 Commonwealth Ave., Boston 34, Mass.—HF
 Noise-Master—Cornish Wire Co., Inc.
 Northern Communications Mfg. Co., 210 E. 40th St., New York 16, N. Y.—HF
 Ohmite Mfg. Co., 4835 W. Flournoy St., Chicago 44, Ill.—DA
 Pacific Clay Products, Steapactite Div., 306 W. Ave. 26, Los Angeles 31, Calif.—I
 Philson Mfg. Co., Inc., 156 Chambers St., New York 7, N. Y.—A, TL
 Pilot Radio Corp., 37-06 36th St., Long Island City 1, N. Y.—AW
 Pioneer Specialty Co., 5100 St. Jean Ave., Detroit 13, Mich.—A
 Plymold Corp., Lawrence, Mass.—T
 Porcelain Products, Inc., Findlay, Ohio—I
 Premax Products, Div. Chisholm-Ryder Co., Inc., 4612 Highland Ave., Niagara Falls, N. Y.—AW, RB
 Publix Metal Prod. Inc., 100 6th Ave., New York 13, N. Y.—RB
 Pyrex—Corning Glass Works
 Radiart Corp., 3571 W. 62nd St., Cleveland 2, Ohio—A, TL
 Radio Craftsman, 1341 S. Michigan Ave., Chicago 5, Ill.—LA
 Raytron, Inc., 407 N. Jackson St., Jackson, Mich.—HF, MS, O, TL, T
 Republic Steel Corp., Republic Bldg., Cleveland 1, Ohio—T
 Rice's Sons, Bernard, 325 Fifth Ave., New York 16, N. Y.—AA, DA, HF, TL
 Rogers Diesel & Aircraft Corp., 1120 Leggett Ave., New York 59, N. Y.—AR
 Sandee Mfg. Co., 3945 N. Western Ave., Chicago 18, Ill.—I
 Schott Co., Walter L., 9306 Santa Monica Blvd., Beverly Hills, Calif.—AR
 Schuttig & Co., Ninth & Kearny Sts., N.E., Washington 17, D. C.—HF
 Searle Aero Industries, Inc., P. O. Box 111, Orange, Calif.—AA
 Selector Mfg. Corp., 21-10 49th Ave., Long Island City 1, N. Y.—HF
 Shakespeare Products Co., 241 E. Kalamazoo Ave., Kalamazoo, Mich.—AA, AW, AR, A, TL, T
 Shur-Antenna-Mount, Inc., 272 Sea Cliff Ave., Sea Cliff, N. Y.—HF, MS, TL, T
 Small Motors, Inc., 1322 Elston Ave., Chicago 22, Ill.—DA, LA
 Snyder Mfg. Co., 22nd & Ontario Sts., Philadelphia 40, Pa.—A, G, T
 Special Products Co., 9115 Brookville Rd., Silver Spring, Md.—A, TL
 Sperry Gyroscope Co., Inc., Great Neck, L. I., N. Y.—LA
 Spiraling Products Co., 64 Grand St., New York 13, N. Y.—AA, AW, AR, A, DA, FS, G, GS, HF, I, K, L, LA, MS, TL
 Standard Engineering Laboratories, 40 S. Oak Knoll Ave., Pasadena 1, Calif.—HF, K, MS, TL
 Standard Winding Co., 44-62 Johnes St., Newburgh, N. Y.—LA
 States Co., 19 New Park Ave., Hartford 6, Conn.—DA
 Stoddart Aircraft Radio Co., 6644 Santa Monica Blvd., Hollywood 38, Calif.—HF
 Stupakoff Ceramic & Mfg. Co., Latrobe, Pa.—I
 Summerhill Tubing Co., Bridgeport, Pa.—AA, A
 Superior Tube Co., Norristown, Pa.—AW, A, RB, TL
 S-W Inductor Co., 1056 Wood St., Chicago 22, Ill.—AR, LA
 Taco—Technical Appliance Corp.
 Technical Appliance Corp., 46-06 De Long St., Flushing, N. Y.—"Taco"—AA, AW, DA, G, HF, I, K, L, MS, O, TL, T
 Technical Radio Co., 275 9th St., San Francisco, Calif.—HF

Telicon Corp., 851 Madison Ave., New York 21, N. Y.—MS, TL
 Thermionic Engineering Corp., 32 W. 12th St. Plant—631 Broadway, Bayonne, N. J.—HF, TL
 Thompson Co., John E., 1440 W. 47th St., Chicago 9, Ill.—AW, RB, TL
 Transmitter Equipment Mfg. Co., Inc., 345 Hudson St., New York 14, N. Y.—DA, TL, T
 Trico Fuse Mfg. Co., 2948 N. 5th St., Milwaukee 12, Wis.—G
 Triumph Mfg. Co., 913 W. Van Buren St., Chicago 7, Ill.—DA
 U. S. Rubber Co., 1230 Sixth Ave., New York 20, N. Y.—AW
 Universal—Mueller Electric Co.
 Universal Clay Products Co., 1528 First St., Sandusky, Ohio—I
 Van Huffel Tube Corp., Warren, Ohio—AA
 Vidal Research Corp., Central Airport, Camden 1, N. J.—T
 Ward Products Corp., 1523 E. 45th St., Cleveland 3, Ohio—AW, A, TL
 Wincharger Corp., E. 7th at Division, Sioux City 6, Iowa—HF, TL, T
 Wind Turbine Co., West Chester, Pa.—K, TL, T
 Winters & Crampton Corp., Grandville, Mich.—AA, A, HF, RB, TL
 Workshop Associates, 66 Needham St., Newton Highlands 61, Mass.—AA, AW, A, DA, HF, K, LA, TL, T

Diamond H—Hart Mfg. Co.
 Doehler-Jarvis Corp., Robertson St., Batavia, N. Y.—MS, R, S
 Doolittle Radio, Inc., 7421 S. Loomis Blvd., Chicago 36, Ill.—R
 Eagle Electric Mfg. Co., Inc., 23-10 Bridge Plaza, S., Long Island City 1, N. Y.—R
 Electrical Reactance Corp., Franklinville, N. Y.—MS, PM, PT, R, S, CU
 Electro Motive Mfg. Co., South Park & John St., Willimantic, Conn.—CU
 Espey Mfg. Co., Inc., 528 E. 72nd St., New York 21, N. Y.—PM, R
 Essex Electronics, 1060 Broad St., Newark 2, N. J.—IT
 Fairchild Camera & Instrument Corp., 88-06 Van Wyck Blvd., Jamaica 1, N. Y.—M
 Federal Telephone & Radio Corp., 200 Mt. Pleasant Ave., Newark 4, N. J.—R, S
 Fractional Motors Co., 1501 N. Halsted St., Chicago 22, Ill.—M
 General Cement Mfg. Co., 919 Raylor Ave., Rockford, Ill.—S
 General Winding Co., 420 W. 45th St., New York 19, N. Y.—"Gen-Win"—PT
 Gen-Win—General Winding Co.
 Globe Industries, Inc., 125 Sunrise Place, Dayton 7, Ohio—M
 Grayhill, I. N. Pulaski Rd., Chicago 24, Ill.—S
 Hart Mfg. Co., Hamilton St., Hartford 1, Conn.—R, S—"Diamond II" Switches
 Insuline Corp. of America, 36-02 35th Ave., Long Island City 10, N. Y.—CU
 J.F.D. Mfg. Co., 4111 Ft. Hamilton Pkwy., Brooklyn 19, N. Y.—"JFD"—S
 Kings Electronics Co., 372 Classon Ave., Brooklyn 5, N. Y.—CU
 Kellogg Switchboard & Supply Co., 6650 S. Cicero Ave., Chicago 38, Ill.—S
 Kollsman Instrument Division, Square D Co., 88-08 45th Ave., Elmhurst, L. I., N. Y.—R, M
 Kulka Electric Mfg. Co., 30 South St., Mt. Vernon, N. Y.—S
 Lawton Products Co., Inc., 624 Madison Ave., New York 22, N. Y.—MS
 Lewis Engineering Co., 52 Rubber Ave., Naugatuck, Conn.—S
 Madison Electrical Products Corp., 78 Main St., Madison, N. J.—"Mepco"—M
 Menco—Madison Electrical Products Corp.
 Maguire Industries, Inc., Electronics Div., 342 W. Putnam Ave., Greenwich, Conn.—CU
 Mallory, P. R., & Co., Inc., 3029 E. Washington St., Indianapolis 6, Ind.—"Yaxley"—"Mallory"—S
 Mica Products Mfg. Co., 69 Wooster St., New York 12, N. Y.—CU
 Monitor Controller Co., 51 S. Gay St., Baltimore 2, Md.—PM, S
 Muter Co., 1255 S. Michigan Ave., Chicago 5, Ill.—PT, S, CU
 National Co., Inc., 61 Sherman St., Malden 48, Mass.—CU
 New England Radiocrafters, 1156 Commonwealth Ave., Boston 34, Mass.—S
 Oak Mfg. Co., 1260 Clybourn Ave., Chicago 10, Ill.—"Oak"—GC, MS, PM, S
 Pilot Industries, Inc., 202 E. 44th St., New York 17, N. Y.—GC
 Precision Parts Co., 1200 N. Main St., Ann Arbor, Mich.—IT, CU
 Publix Metal Prod., Inc., 100 Sixth Ave., New York 13, N. Y.—GC
 Reeves Sound Laboratories, Div. Reeves-Ely Laboratories, Inc., 62 W. 47th St., New York, N. Y.—R
 Self Winding Clock Co., Inc., 475 Fifth Ave., New York 17, N. Y.—GC, MS, PM, R, M
 Shakespeare Products Co., 241 E. Kalamazoo Ave., Kalamazoo, Mich.—R
 Sickles, F. W., Co., 165 Front St., Chicopee, Mass.—IT, PT, CU
 Small Motors, Inc., 1322 Elston Ave., Chicago 22, Ill.—M
 Smith, F. A., Mfg. Co., Union & Augusta, Rochester 2, N. Y.—M
 Sorensen & Co., Inc., 375 Fairfield Ave., Stamford, Conn.—R
 Stackpole Carbon Co., P. O. Box 327, St. Marys, Pa.—"Stackpole"—S
 Stoddart Aircraft Radio Co., 6644 Santa Monica Blvd., Hollywood 38, Calif.—R
 Stow Mfg. Co., Inc., Binghamton, N. Y.—R
 S-W Inductor Co., 1056 Wood St., Chicago 22, Ill.—IT, PM
 Taller & Cooper, 75 Front St., Brooklyn 1, N. Y.—GC, MS, PM, PT, R, S
 Teleoptic Co., 1251 Mound Ave., Racine, Wis.—GC, S
 Western Condenser Co., E. Walnut St., Watseka, Ill.—MS
 Weymouth Instrument Co., 1440 Commercial St., East Weymouth 89, Mass.—S
 Wheelco Instruments Co., 847 W. Harrison St., Chicago 7, Ill.—R
 Wilson Mfg. Co., Inc., 600 N. Andrews Ave., Ft. Lauderdale, Fla.—MS
 Yardeny Laboratories, Inc., 105-107 Chambers St., New York 7, N. Y.—PM, R
 Yaxley—P. R. Mallory & Co., Inc.

USE THE INDEX

To find the manufacturer of any product, look first in the Index. For example, "Counters, electronic 12-C", means that under Section 12, "Electronic Control Equipment", the letter "C" after a manufacturer's name indicates his ability to supply electronic counting devices.

(2) Automatic Tuning Units & Parts



- Face platessee DIALS
- Geared tuning unitsGC
- Inductance trimmer unitsIT
- Mechanical automatic selectorsMS
- Push button motor operated units (complete)PM
- Push button trimmer units (complete)PT
- Remote controlsR
- SwitchesS
- Trimmer condenser unitsCU
- Tuning motorsM

Acro Electric Co., 1305 Superior Ave., Cleveland 14, Ohio—S
 Air Communications, Inc., 2233 Grand Ave., Kansas City, Mo.—R
 Aladdin Radio Industries, Inc., 225 W. Jackson Blvd., Chicago, Ill.—IT
 Alliance Mfg. Co., Alliance, Ohio—M
 American Radio Hardware Co., 152-4 MacQuesten Pkwy. S., Mt. Vernon, N. Y.—S
 Automatic Electric Co., 1033 W. Van Buren St., Chicago 7, Ill.—R
 Automatic Mfg. Corp., 909 Passaic Ave., East Newark, N. J.—IT, PT, CU
 Barker & Williamson, Upper Darby, Pa.—GC, MS, PM, R, S
 Bell Radio & Television, 125 E. 46th St., New York 17, N. Y.—IT
 Bendix Aviation Corp., Pacific Div., 11600 Sherman Way, N. Hollywood, Calif.—R
 Centralab Div. of Globe Union, Inc., 900 E. Keefe Ave., Milwaukee 1, Wis.—S, CU
 Cline Electric Mfg. Co., 4550 W. Lexington Ave., Chicago, Ill.—PM, R
 Communication Parts, 1101 N. Paulina St., Chicago 22, Ill.—IT, PT
 Croname, Inc., 3701 N. Ravenswood Ave., Chicago 13, Ill.—GC, MS, R

(3) Battery Chargers



- Electronic tube rectified ...VC
Gas engine driven ...G
Hand cranked ...HC
Metallic rectified ...MC
Motor generator ...MG
Vibrator rectified ...V
Wind driven ...W

Aarons Radio Corp., 125 E. 46th St., New York 17, N. Y.—V
Acme Electric & Mfg. Co., Cuba, N. Y.—MC
Acme Fire Alarm Co., Inc., 106 Seventh Ave., New York 11, N. Y.—MC
Allen Electric & Equipment Co., 2101-2117 N. Pitcher St., Kalamazoo 13-F, Mich.—VC, MC
Allis, Louis, Co., 427 E. Stewart St., Milwaukee 7, Wis.—MG
American Communications Corp., 306 Broadway, New York, N. Y.—VC, MC
American Radio Co., 611 E. Garfield Ave., Glendale 5, Calif.—VC
American Television & Radio Co., 300 E. 4th St., St. Paul 1, Minn.—ATL—MC, V
ATR—American Television & Radio Co.
Automatic Electric Co., 1033 W. Van Buren St., Chicago 7, Ill.—VC, MC
Automatic Electrical Devices Co., 324 E. 3rd St., Cincinnati 2, Ohio—MC
Barker & Williamson, Upper Darby, Pa.—VC, MC
Battery Boosters—Benwood Linze Co.
Benwood-Linze Co., 1815 Locust St., St. Louis 3, Mo.—Battery-Boosters, "B-L"—MC
Biltmore Radio Corp., 15 Ave. A, New York 3, N. Y.—VC, MC
B-L—Benwood Linze Co.
Bogue Electric Co., 27 Kentucky Ave., Paterson 3, N. J.—MG
Brelco Corp., 55 Van Dam St., New York 13, N. Y.—VC
Briggs & Stratton Corp., 2711 N. 13th St., Milwaukee, Wis.—G
Burke Electric Co., 12th & Cranberry, Erie, Pa.—HC
Carpenter Mfg. Co., Master Light Bldg., Boston 45, Mass.—MC
Carson Machine & Supply Co., 202 S. E. 29th St., Oklahoma City 9, Okla.—G, MC, MG
Carter Motor Co., 1608 Milwaukee Ave., Chicago 47, Ill.—HC
Climax Engineering Co., Clinton, Iowa—G, MC
Communication Equipment & Engineering Co., 5646 W. Race St., Chicago 44, Ill.—VC
Control Corp., 718 Central Ave., Minneapolis 14, Minn.—MC
Dayton Acme Co., 930 York St., Cincinnati 14, Ohio—HC
Delco Appliance Division, General Motors Corp., 391 Lyell Ave., Rochester 1, N. Y.—G
Eclipse-Pioneer Division, Bendix Aviation Corp., Teterboro, N. J.—G, MG
Eicor, Inc., 1501 W. Congress St., Chicago 7, Ill.—G, HC, MG
Electric Heat Control Co., 9123 Inman Ave., Cleveland 5, Ohio—VC, MC
Electric Products Co., 1725 Clarkstone Rd., Cleveland 12, Ohio—MG
Electrical Engrg. & Mfg. Corp., 4606 W. Jefferson Blvd., Los Angeles 16, Calif.—G
Electrical Facilities, Inc., 4224 Holden St., Oakland 8, Calif.—"Revselen"—MC
Electrical Windings, Inc., 2015 N. Kolmar Ave., Chicago 39, Ill.—MC
Electricoil Transformer Co., 421 Canal St., New York 13, N. Y.—VC, MC
Electronic Laboratories, Inc., 122 W. New York St., Indianapolis 4, Ind.—V
Fansteel Metallurgical Corp., 2200 Sheridan Rd., North Chicago, Ill.—MC
Federal Telephone & Radio Corp., 200 Mt. Pleasant Ave., Newark 4, N. J.—MC
Flotrol—Lorain Products Corp.
France Mfg. Co., 10325 Berea Rd., Cleveland 2, Ohio—VC, V
Franklin Transformer Mfg. Co., 65 22nd Ave., N. E., Minneapolis 13, Minn.—MC, VC
Gardiner Mfg. Co., 2711 Union St., Oakland 7, Calif.—W
Garner Electronics Corp., 1100 W. Washington Blvd., Chicago 7, Ill.—G, HC, MG
General Electric Co., 1285 Boston Ave., Bridgeport 2, Conn.—VC, MC
Goodall Electric Mfg. Co., 3rd & Main St., Osgallala, Nebr.—VC
Hannon Electric Co., 1605 Waynesburg Rd., S.E., Canton, Ohio—VC, G, HC, MG
Harnischfeger Corp., 4400 W. National Ave., Milwaukee 14, Wis.—MG
Hartman Corp. of America, 6417 Manchester, St. Louis 10, Mo.—G, MC, MG
Hercules Electric & Mfg. Co., Inc., 2500 Atlantic Ave., Brooklyn 7, N. Y.—VC, MC
Hertner Elec. Co., 12690 Elmwood Ave., Cleveland 11, Ohio—G, MG

Horni Signal Mfg. Corp., 421 W. 54th St., New York 19, N. Y.—MC
Jacksonville Metal Mfg. Co., 247 Riverside Ave., Jacksonville 4, Fla.—VC, MG
Jacobsen Mfg. Co., 747 Washington Ave., Racine, Wis.—G
Kellogg Switchboard & Supply Co., 6650 S. Cicero Ave., Chicago 38, Ill.—VC, G, MC, MG
Kohler Co., Kohler, Wis.—G
Laurelk Radio Mfg. Co., 3931 Monroe Ave., Wayne, Mich.—VC
Lorain Products Corp., 1122 F St., Lorain, Ohio—"Flotrol"—MC
Mallory, P. R., & Co., Inc., 3029 E. Washington St., Indianapolis 6, Ind.—MC
McColpin-Christie Corp., 4922 S. Figueroa St., Los Angeles 37, Calif.—VC, MC
Mellaphone Corp., 1462 E. Main St., Rochester 2, N. Y.—MC
Mohawk Electric Mfg. Co., 60 Howard St., Irvington 6, N. J.—VC, MC
North Electric Mfg. Co., Box 417, Galton, Ohio—MC
Onan, D. W., & Sons, 3216 Royalston Ave., Minneapolis 3, Minn.—G
Pincor—Pioneer Gen-E-Motor Corp.
Pioneer Gen-E-Motor Corp., 5841-49 Dickens Ave., Chicago 39, Ill.—"Pincor"—G
Print Mfg. Co., 5775 N. Ridge Ave., Chicago 26, Ill.—MC
Raytheon Mfg. Co., 55 Chapel St., Newton 58, Mass.—VC
Ready Power Co., 3826 Grand River Ave., Detroit, Mich.—G
Rectifier Engineering Co., 1809 E. 7th St., Los Angeles 21, Calif.—VC, MC, W
Reisen—Electrical Facilities, Inc.
Richardson-Allen Corp., 15 W. 20th St., New York, N. Y.—VC
Rogers Diesel & Aircraft Corp., 1120 Leggett Ave., New York 59, N. Y.—VC, G, MG
Schauer Machine Co., 2060 Reading Rd., Cincinnati 2, Ohio—VC, MC
Selenium Corp. of America, 1719 W. Pico Blvd., Los Angeles 15, Calif.—MC
Sheldon Electric Co., Inc., 76 Colt St., Irvington 11, N. J.—VC
Sorgel Electric Co., 838 W. National Ave., Milwaukee 4, Wis.—VC, MC
Stancor—Standard Transformer Corp.
Standard Transformer Corp., 1500 N. Halsted St., Chicago 22, Ill.—"Stancor"—VC, MC
Stevens Arnold Co., 22 Elkins St., South Boston, Mass.—MC
United Transformer Corp., 150 Varlek St., New York 13, N. Y.—MC
Universal Motor Co., 186 Harrison St., Oskosh, Wis.—G
Warwick Mfg. Corp., 4640 W. Harrison St., Chicago 44, Ill.—HC
Westinghouse Elec. Corp., East Pittsburgh, Pa.—VC, MC, MG
Willard Storage Battery Co., 246-286 E. 131st St., Cleveland 1, Ohio—"Willard"—VC, MC
Wincharger Corp., E. 7th at Division, Sioux City 6, Iowa—MG, W

(4) Batteries, Dry & Wet



- Air cell ...AC
Bias cell ...BC
Dry cell ...DC
Hearing aid ...HB
Radio dry batteries ...R
Standard cells ...C
Storage ...S
Storage—non-spill ...SN

Acme Battery Co., 59 Pearl St., Brooklyn 1, N. Y.—DC, R, C
Aeronautical Radio Mfg. Co., 155 First St., Mineola, L. I., N. Y.—S
Automatic Electrical Devices Co., 324 E. 3rd St., Cincinnati 2, Ohio—SN
Bell Radio & Television, 125 E. 46th St., New York 17, N. Y.—S
Bond Electric Corp., 275 Winchester Ave., New Haven 4, Conn.—DC, R
Bright Star Battery Co., 200 Crooks Ave., Clifton, N. J.—DC, HB, R
Bryant Mfg. Co., 401 N. Paulina St., Chicago, Ill.—S
Burgess Battery Co., Foot of Exchange, Freeport, Ill.—DC, HB, R, C
Carbone Corp., 400 Myrtle Ave., Boonton, N. J.—DC
Carpenter Mfg. Co., Master Light Bldg., Boston 45, Mass.—SN
Centralab, Div. of Globe-Union, Inc., 900 E. Keefe Ave., Milwaukee 1, Wis.—S, SN
Cinch Mfg. Corp., Div. United-Carr Fastener Co., 2335 W. Van Buren St., Chicago, Ill.—BC

Edison, Thomas A., Inc., Emark Div., Plant No. 1, Belleville Tpk, Kearny, N. J.—DC, R, S
Electric Storage Battery Co., 19th St. & Allegheny Ave., Philadelphia 32, Pa.—"Exide"—S, SN
Eppley Laboratory, Inc., 12 Sheffield Ave., Newport, R. I.—C
Exide—Electric Storage Battery Co.
Garner Electronics Corp., 1100 W. Washington Blvd., Chicago 7, Ill.—S
General Dry Batteries, Inc., 13000 Athens Ave., Cleveland, Ohio—HB, DC, R
Gould Storage Battery Corp., 35 Neoga St., Depew, N. Y.—S
Hartman Corp. of America, 6417 Manchester, St. Louis 10, Mo.—S
Ideal Industries, Inc., 5194 Park Ave., Sycamore, Ill.—SN
Kellogg Switchboard & Supply Co., 6650 S. Cicero Ave., Chicago 38, Ill.—DC, S, SN
Mallory, P. R., & Co., 3029 E. Washington St., Indianapolis 6, Ind.—DC
Marathon Battery Co., Wausau, Wis.—DC, HB, R, C
Monark Battery Co., Inc., 1240 N. Homan Ave., Chicago, Ill.—"Monark"—S
National Battery Co., 1723 Roblyn Ave., St. Paul, Minn.—S
National Carbon Co., Inc., 30 E. 42nd St., New York 17, N. Y.—AC, DC, HB, R, C
Philco Corp., Tioga & C Sts., Philadelphia 34, Pa.—R, S
Prest-O-Lite Battery Co., Inc., P. O. Box 1655, Indianapolis, Ind.—S, SN
Ray-O-Vac Co., 212 E. Washington Ave., Madison 3, Wis.—DC, HB, R
RCA Victor Division, Radio Corp. of America, Front & Cooper Sts., Camden, N. J.—BC, DC, HB, R
Sturges Battery Co., Inc., 260 W. Broadway, New York, N. Y.—C, S, SN
Ucinite Co., Div. United-Carr Fastener Corp., Newtonville, Mass.—BC
United States Electric Mfg. Corp., 222 W. 14th St., New York 11, N. Y.—DC, R, C
U. S. Rubber Co., 1230 Sixth Ave., New York 20, N. Y.—S
Universal Battery Co., 3410 S. LaSalle St., Chicago, Ill.—S, SN
Willard Storage Battery Co., 246-286 E. 131st St., Cleveland 1, Ohio—"Willard"—DC, R, S, SN
Wincharger Corp., E. 7th at Division, Sioux City 6, Iowa—S

(5) Cabinets, Racks & Panels



- Bins & racks ...B
Carrying bags ...CB
Chassis ...C
Leather handles—straps ...L
Metal cabinets ...M
Panels ...P
Plastic ...see PLASTIC MOLDERS
Portable set cases ...PC
Racks ...R
Trays & tote baskets ...T
Wood cabinets ...W

Aarons Radio Corp., 125 E. 46th St., New York 17, N. Y.—W
Abel & Bach, 1000 W. St. Paul Ave., Milwaukee, Wis.—PC
Acro Tool & Die Works, 4554 Broadway, Chicago 40, Ill.—C
Acromark Co., 9-13 Morrell St., Elizabeth 4, N. J.—P
Adler Mfg. Co., 2001 W. Chestnut St., Louisville 11, Ky.—W
Airplane & Marine Instruments, Inc., Clearfield, Pa.—C, M, P, R
All-Steel Equipment Co., 723 Griffith Ave., Aurora, Ill.—M
Aluminum Goods Mfg. Co., 1512 Washington St., Manitowoc, Wis.—C, M
American Central Mfg. Corp., 18th & Columbia Sts., Connersville, Ind.—M
American Communications Corp., 306 Broadway, New York, N. Y.—W
American Hard Rubber Co., 11 Mercer St., New York 13, N. Y.—P
American Radio Hardware Co., 152 MacQuisten Pkwy., S. Mt. Vernon, N. Y.—C, P
Arkay Laboratories, Inc., 1570 S. First St., Milwaukee 4, Wis.—C, M, P
Aro Equipment Corp., Enterprize & Trevitt, Bryan, Ohio—M, R
Beiber Trunk & Bag Co., Railroad Ave., Woodbury, N. J.—PC
Bitter, A., Construction Co., 721 E. 133rd St., New York, N. Y.—B, C, W
Bud Radio, Inc., 2118 E. 55th St., Cleveland 3, Ohio—C, M, P, R
Cardwood Products Corp., 201 S. Second Ave., Mt. Vernon, N. Y.—CB, W

Castlewood Mfg. Co., 12th & Burnett Sts., Louisville, Ky.—W
 Caswell-Runyan Co., Huntington, Ind.—W
 Chicago Sound Systems, Inc., 2124 S. Michigan Ave., Chicago, Ill.—W
 Churchill Cabinet Co., 2119 Churchill St., Chicago 47, Ill.—W
 Cole Steel Equipment Co., 349 Broadway, New York 13, N. Y.—M, P
 Collins Radio Co., Cedar Rapids, Iowa—M, R
 Columbia Associates, 141 W. 24th St., New York, N. Y.—P, R, W
 Columbia Metal Box Co., 260 E. 143rd St., New York 51, N. Y.—C, M, P, R
 Commercial Metal Products Co., 2251 W. St. Paul Ave., Chicago 47, Ill.—C
 Corry-Jamestown Mfg. Corp., 32 N. First Ave., Corry, Pa.—C, M, P
 Croname, Inc., 3701 N. Ravenswood Ave., Chicago 13, Ill.—M, P
 Custom Case Co., 104 Bleeker St., New York, N. Y.—PC
 Dahlstrom Metallic Door Co., Buffalo & E. 2nd, Jamestown, N. Y.—C, M, P, R
 Dayton Acme Co., 930 York St., Cincinnati 14, Ohio—C, P, T, W
 Doehler-Jarvis Corp., Robertson St., Batavia, N. Y.—B, C, L, M, P
 Doolittle Radio, Inc., 7421 S. Loomis Blvd., Chicago 36, Ill.—C, M
 Eastern Amplifier Corp., 794 E. 140th St., New York 54, N. Y.—C
 Edwards, T. J., Inc., 210 South St., Boston 5, Mass.—P
 Electrical Reactance Corp., Franklinville, N. Y.—P
 Electro-Marine Co., 274 Madison Ave., New York 16, N. Y.—C, M
 Electronic Specialties Mfg. Co., 68 High St., Worcester 2, Mass.—C, P
 Electronic Specialty Co., 3456 Glendale Blvd., Los Angeles 26, Calif.—C, M, P
 Electronic Supply Co., 207 Main St., Worcester 8, Mass.—C, P, R
 Emerson Radio & Phonograph Corp., 111 8th Ave., New York 11, N. Y.—W
 Erie Art Metal Co., 1602 E. 18th St., Erie, Pa.—C, P, M
 Etched Products Corp., 39-01 Queens Blvd., Long Island City, N. Y.—P
 Fairchild Camera & Instrument Corp., 88-06 Van Wyck Blvd., Jamaica 1, L. I., N. Y.—C
 Fairfield Lumber Co., 1700 Post Rd., Fairfield, Conn.—B, P, R, T, W
 Falstrom Co., Falstrom Ct., Passaic, N. J.—B, M, P
 Feick Mfg. Div., Detroit Aircraft Prod., Inc., 10225 Meech Ave., Cleveland 5, Ohio—C, M, P, R
 Flock Process Co., Velvete Div., 3 Quincy St., Norwalk, Conn.—W
 Gardiner Mfg. Co., 2711 Union St., Oakland 7, Calif.—C, M, R, T
 Goat Metal Stampings, Inc., 314 Dean St., Brooklyn 17, N. Y.—C
 Goodall Electric Mfg. Co., 3rd & Main St., Ogallala, Nebr.—B, M, P
 Grammes, L. F., & Sons, Inc., 392 Union St., Allentown, Pa.—M, P, R
 Graton & Knight Co., 356 Franklin St., Worcester 4, Mass.—PC
 Greenhut Insulation Co., 31 W. 21st St., New York, N. Y.—P
 Haddorff Piano Co., 630 S. Wabash Ave., Chicago 5, Ill.—W
 Hadley, Robert M., Co., 707 E. 61st St., Los Angeles 1, Calif.—C, M, P, R
 Hall Co., Gordan L., Old Lyme, Conn.—B
 Harvey Machine Co., Inc., 6200 Avalon Blvd., Los Angeles 3, Calif.—C, M, P, W
 Harvey Radio Laboratories, Inc., 447 Concord Ave., Cambridge 38, Mass.—C, M, P
 Heller, W. C., & Co., 1944 Caldwell St., Montpelier, Ohio—W
 Hoffman Radio Corp., 3761 S. Hill St., Los Angeles 7, Calif.—W
 Hofstatter's Sons, Inc., 42-53 24th St., Long Island City 1, N. Y.—P, PC, W
 Hudson American Corp., 25 W. 43rd St., New York 18, N. Y.—C, M, P, R
 ICA—Insuline Corp. of America
 Illinois Cabinet Co., 2525 11th St., Rockford, Ill.—W
 Illinois Wood Products Corp., 2512 S. Damen Ave., Chicago 8, Ill.—W
 Industrial Fabricators, Inc., 1890 Carter Rd., Cleveland 12, Ohio—P, T
 Insuline Corp. of America, 3602 35th Ave., Long Island City 10, N. Y.—"ICA"—C, M, P, R
 Islip Radio Mfg. Corp., Islip, N. Y.—L, M, P, R
 Jacksonville Metal Mfg. Co., 247 Riverside Ave., Jacksonville 4, Fla.—M, P, R
 J.F.D. Mfg. Co., 4111 Ft. Hamilton Pkwy., Brooklyn 19, N. Y.—W
 Johnson, E. F., Co., Waseca, Minn.—C, M, P, R
 Karp Metal Products, 129 30th St., Brooklyn 32, N. Y.—B, CB, C, L, M, P, R, T
 Kellogg Switchboard & Supply Co., 6650 S. Cicero Ave., Chicago 38, Ill.—M, P, R, W
 Keystone Electronics Co., 50 Franklin St., New York 13, N. Y.—P
 Klise Mfg. Co., 50 Cottage Grove St., S.W., Grand Rapids 2, Mich.—P, R, W

Korrol Mfg. Co., 350 Greenwich St., New York 13, N. Y.—C, M, P, R
 Kraus, Walter S., Co., 43-10 48th Ave., Woodside, L. I., N. Y.—M, W
 Langevin Co., Inc., 37 W. 65th St., New York 23, N. Y.—M
 Le Febure Corp., 716 Oakland Rd., N.E., Cedar Rapids, Iowa—M, W
 Lewisburg Chair & Furniture Co., Lewisburg, Pa.—P, R, W
 Lewyt Corp., 60 Broadway, Brooklyn 11, N. Y.—C, R
 Lindsay & Lindsay, 222 W. Adams St., Chicago 6, Ill.—M
 Lindsay & Thomas, Inc., 60 E. 42nd St., New York 17, N. Y.—M
 Link, Fred M., 125 W. 17th St., New York 11, N. Y.—C, M
 Long, L. J., Co., 186 Grand St., New York 13, N. Y.—C
 Lorentzen, H. K., Inc., 391 W. Broadway, New York 12, N. Y.—C, M, P, R
 Mayer Mfg. Corp., 45 Division Pl., Brooklyn 22, N. Y.—B, C, M, P
 McInerney Plastics Co., 25 Commerce Ave., S.W., Grand Rapids 2, Mich.—T, W
 Megard Corp., 1601 S. Burlington Ave., Los Angeles 6, Calif.—C, M, P, R
 Metallic Arts Co., 243 Broadway, Cambridge 39, Mass.—B, C, M, P, R
 Meyers Safety Switch Co., Inc., 423 Tehama St., San Francisco 3, Calif.—M, P, R
 Mica Products Mfg. Co., 69 Wooster St., New York 12, N. Y.—P
 Millen, James, Mfg. Co., Inc., 150 Exchange St., Malden 48, Mass.—C, L, M, P, R
 Milprint, Inc., 431 W. Florida St., Milwaukee 1, Wis.—CB
 National Co., Inc., 61 Sherman St., Malden 48, Mass.—C, M, P, R
 Nevel Mfg. Co., 1427 Chestnut St., Kansas City 1, Mo.—CB, PC, W
 New England Etching & Plating Co., 25 Spring St., Holyoke, Mass.—P
 New England Radiocrafters, 1156 Commonwealth Ave., Boston 34, Mass.—C, M, W
 Olympic Tool & Mfg. Co., Inc., 39 Chambers St., New York 7, N. Y.—C, M, P
 Paramount Radio Mfg. Co., 967 32nd St., Oakland 8, Calif.—P, R, W
 Par Metal Products Co., 32-62 49th St., Long Island City, N. Y.—"Par-Met"—C, M, P, R
 Paul & Beekman, Div. Portable Products Corp., 1801 Courtland St., Philadelphia 40, Pa.—C, M, P
 Penn Fibre & Specialty Co., 2024-30 E. Westmoreland St., Philadelphia 30, Pa.—P
 Philco Corp., Toga & "C" Sts., Philadelphia 34, Pa.—W
 Porter Metal Products, 121 Ingraham St., Brooklyn 6, N. Y.—B, C, M, P, R, T
 Premier Metal Etching Co., 2103 44th Ave., Long Island City 1, N. Y.—P
 Purves Mfg. Co., 31 W. 11th St., Indianapolis, Ind.—W
 Quality Hardware & Machine Corp., 5849 N. Ravenswood Ave., Chicago 26, Ill.—C
 Radio Merchandise Sales, 550 Westchester Ave., New York 55, N. Y.—CB, W
 Ra-Trom Corp., 78 W. 4th St., Boston 27, Mass.—C, M, P, R
 Redi-Rack Corp., 141 W. 24th St., New York, N. Y.—R
 Sanders Bros. Mfg. Co., 409 W. Main St., Ottawa, Ill.—P, R, W
 Schloss Bros., A., Corp., 801 E. 135th St., Bronx 54, N. Y.—W
 Scovill Mfg. Co., 99 Mill St., Waterbury 91, Conn.—R
 Screenmakers, Inc., 64 Fulton St., New York 7, N. Y.—C, M, P, W
 Searle Aero Industries, Inc., P. O. Box 111, Orange, Calif.—C, M, P, R, W
 Security Steel Equipment Co., Avenel St., Avenel, N. J.—P, R, W
 Silver Co., McMurdo, 1240 Main St., Hartford 3, Conn.—M, P
 Simpson, Mark. Mfg. Co., 188 W. 4th St., New York 14, N. Y.—W
 Skydyne, Inc., River Rd., Port Jervis, N. Y.—M, P, W
 Slater Corp., N. G., 3 W. 29th St., New York 1, N. Y.—P, R, W
 Sparks Mfg. Co., Ltd., 318 Jefferson St., Newark 5, N. J.—P, R, W
 Spencer Cardinal Corp., Box 751, Marion, Ind.—W
 Stamford Metal Specialty Co., 428 Broadway, New York 13, N. Y.—C, M, P
 Standard Electric Time Co., 89 Logan St., Springfield 2, Mass.—P
 Standard Engineering Laboratories, 40 S. Oak Knoll Ave., Pasadena 1, Calif.—C, M, P, R
 Standard Pressed Steel Co., Jenkintown, Pa.—T
 Steger Furniture Mfg. Co., Steger, Ill.—P, R, W
 Sun Shoe Mfg. Co., 617 N. Aberdeen St., Chicago 22, Ill.—CB, L
 Tonk Mfg. Co., 1910 N. Magnolia St., Chicago, Ill.—W

United Radio Mfg. Co., 191 Greenwich St., New York, N. Y.—C, F
 United States Trunk Co., Inc., 951 Broadway, Fall River, Mass.—PC, W
 Vaughan Cabinet Co., 3810 N. Clark St., Chicago 13, Ill.—W
 Vibraloc Mfg. Co., 3597 Mission St., San Francisco 10, Calif.—W
 Victory Mfg. Co., 1722 W. Arcade Pl., Chicago 12, Ill.—PC
 Wabash Cabinet Co., Wabash, Ind.—P, R, W
 Wallace, Wm. T., Mfg. Co., Chill & Madison Aves., Peru, Ind.—W
 Waterman Products Co., Inc., 1900 N. 6th St., Philadelphia 22, Pa.—P, R, W
 Watterson Radio Mfg. Co., 2700 Swiss Ave., Dallas 1, Tex.—W
 Wells Gardner & Co., 2701 N. Kildare Ave., Chicago 39, Ill.—W
 White Research Associates, 899 Boylston St., Boston 15, Mass.—P, R, W
 Woodcraft Corp., 501 Salzburg Ave., Bay City, Mich.—W
 Worcester Pressed Steel Co., Worcester, Mass.—C, P

(16) Capacitors, Fixed



- Air, fixedA
- Ceramic insulatedC
- Compressed gasG
- Electrolytic dryED
- Electrolytic wetEW
- Fluorescent lamp unitsFS
- GlassG
- IndustrialI
- MicaM
- OilO
- PaperP
- Plug-in condensersPF
- Polystyrene insulatedPO
- Silvered micaS
- StandardST
- Temperature compensatedTC
- TransmittingT
- Vacuum cond.V

Aerovox Corp., New Bedford, Mass.—C, ED, FS, I, M, P, PF, PO, S, TC, T, ST, O
 Aircraft-Marine Products, Inc., 1523 N. 4th St., Harrisburg, Pa.—T
 Aldine Paper Co., Inc., 535 Fifth Ave., New York 17, N. Y.—P
 American Condenser Co., 4410 N. Ravenswood Ave., Chicago 40, Ill.—A, ED, P, PF, T, O
 Arco Electronics Inc., 135 Liberty St., New York 6, N. Y.—M
 Atlas Condenser Products Co., 548 Westchester Ave., New York 55, N. Y.—ED, FS, P, O
 Automatic Mfg. Corp., 900 Passaic Ave., East Newark, N. J.—C, S
 Barker & Williamson, Upper Darby, Pa.—A, G, PF, T
 Berger Electronics, 109-01, 72nd Rd., Forest Hills, N. Y.—EW, TC
 Brown Engineering Co., 4635 S. E. Hawthorne Blvd., Portland 15, Ore.—ST
 Capacitron Co., 849 N. Kedzie Ave., Chicago 51, Ill.—ED, FS, I, P, PF, T, C, EW, M, O
 Cardwell, Allen D., Mfg. Corp., 81 Prospect St., Brooklyn 1, N. Y.—A, PF, T
 Centralab, Div. Globe-Union, Inc., 900 E. Keefe Ave., Milwaukee 1, Wis.—C, S, TC, T
 Chicago Condenser Corp., 3255 W. Armitage Ave., Chicago 47, Ill.—FS, I, P
 Collins Radio Co., Cedar Rapids, Iowa—T
 Condenser Products Co., 1375 N. Branch St., Chicago 22, Ill.—FS, I, PO, T
 Cornell-Dubilier Electric Corp., So. Plainfield, N. J.—ED, EW, FS, I, M, P, PF, S, ST, TC, T, O
 Corning Glass Works, Corning, N. Y.—G, I, T
 Cosmic Radio Corp., 699 E. 135th St., New York 54, N. Y.—ED, FS, P
 Crystal Research Laboratories, Inc., 29 Allyn St., Hartford 3, Conn.—C, S, TC
 Deuschmann, Toke Corp., Canton, Mass.—ED, EW, FS, I, M, P, PF, O
 Doehler-Jarvis Corp., Robertson St., Batavia, N. Y.—FS
 Dumont Electric Co., 34 Hubert St., New York 13, N. Y.—ED, FS, I, M, P, S, ST, O
 Eastern Electronics Corp., 41 Chestnut St., Newhaven, Conn.—ST
 Ecco High Frequency Corp., 7020 Hudson Blvd., N. Bergen, N. J.—T
 Eitel-McCullough, Inc., San Bruno, Calif.—V
 Electrical Reactance Corp., Franklinville, N. Y.—C, FS, P, S, O
 Electro Motive Mfg. Co., South Park & John St., Wilimantic, Conn.—M, P, S

Emerson Radio & Phonograph Corp., 111 Eighth Ave., New York 11, N. Y.—C, ED, M, P

Erie Resistor Corp., 640 W. 12th St., Erie, Pa.—C, S, TC

Fansteel Metallurgical Corp., 2200 Sheridan Rd., North Chicago, Ill.—RW

Fast, John E., & Co., 3129 N. Crawford Ave., Chicago 41, Ill.—FS, I, P, PO, T, O

General Electric Co., 1 River Rd., Schenectady 5, N. Y.—V

General Radio Co., 275 Massachusetts Ave., Cambridge 39, Mass.—ST

Girard-Hopkins, 1000 40th Ave., Oakland 1, Calif.—FS, I, P, PF, T, O

Glenn-Roberts Co., 3100 E. 10th St., Oakland 1, Calif.—I

Goodall Electric Mfg. Co., Ogallala, Nebr.—P

Gudeman Co., 361 W. Superior St., Chicago 10, Ill.—ED, I, P, PF, T, O

Guthman, Edwin I., & Co., Inc., 15 S. Throop St., Chicago 7, Ill.—P

Hammarlund Mfg. Co., Inc., 460 W. 34th St., New York 1, N. Y.—A, T

Hewlett-Packard Co., 395 Page Mill Rd., Palo Alto, Calif.—ST

H. R. S. Products, 5707 W. Lake St., Chicago 44, Ill.—ED, FS, I, P, O

Illinois Condenser Co., 1616 N. Throop St., Chicago 22, Ill.—ED, EW, FS, I, P, PF, O

Industrial & Commercial Electronics, Belmont, Calif.—V

Industrial Condenser Corp., 3243 N. California Ave., Chicago 18, Ill.—ED, FS, I, P, PF, PO, ST, T, O

Industrial Instruments, Inc., 17 Pollock Ave., Jersey City, N. J.—ST

International Products Corp., 2554 Greenmount Ave., Baltimore 18, Md.—M

Intex Co., 303 W. 42nd St., New York 18, N. Y.—ED, P

Islip Radio Mfg. Corp., Islip, N. Y.—T

Jeffers Electronics, Hoover St., DuBois, Pa.—C

Jennings Radio Mfg. Co., McLaughlin Rd., San Jose 12, Calif.—V

Johnson, E. F., Co., Waseca, Minn.—A, G, T

Kellogg Switchboard & Supply Co., 6650 S. Cicero, Chicago 38, Ill.—I, P, PF

Kidde, Walter & Co., Inc., 140 Cedar St., New York 6, N. Y.—G

Kilburn, J. R., Glass Co., Inc., 22 S. Worcester St., Charley, Mass.—C

Lapp Insulator Co., Inc., 24 Craigie St., Le Roy, N. Y.—G, T

Leeds & Northrup Co., 4970 Stenton Ave., Philadelphia 44, Pa.—ST

Lenoxite Division, Lenox, Inc., 65 Prince St., Trenton 5, N. J.—C

Macallen Co., Macallen St., Boston 27, Mass.—M

Magnavox Co., Ft. Wayne 4, Ind.—ED

Mallory, P. R., & Co., Inc., 3029 E. Washington St., Indianapolis 6, Ind.—ED, P, O

Mica Products Mfg. Co., 69 Wooster St., New York 12, N. Y.—M

Micamold Radio Corp., 1087 Flushing Ave., Brooklyn 6, N. Y.—C, ED, FS, I, M, P, PF, S, TC, T, O

Michigan Fluorescent Light Co., 71-77 S. Parke St., Pontiac, Mich.—FS

Millen, James, Mfg. Co., Inc., 150 Exchange St., Malden 48, Mass.—A, T

Milprint, Inc., 431 W. Florida St., Milwaukee 1, Wis.—P

Muter Co., 1255 S. Michigan Ave., Chicago 5, Ill.—C, TC

National Ceramic Co., 400 Southard St., Trenton 2, N. J.—C

Noma Electric Corp., 55 W. 13th St., New York 11, N. Y.—M

Nord Mfg. Co., 205 Spruce St., Bridgeport, Conn.—P

O'Donnell, J. P., & Sons, 316 Stuart St., Boston 16, Mass.—FS, P

Philco Corp., Tioga & "C" Sts., Philadelphia 34, Pa.—C, ED, EW, M, P, S, O

Polymet Condenser Co., 699 E. 135th St., New York, N. Y.—ED, P

Potter Co., 1950 Sheridan Rd., North Chicago 1, Ill.—FS, I, P, ST, T, V, ED, O

RCA Victor Division, Radio Corp. of America, Front & Cooper Sts., Camden, N. J.—I, T

Richardson-Allen Corp., 15 W. 20th St., New York 11, N. Y.—ST

Sanitee Mfg. Co., 3945 N. Western Ave., Chicago 18, Ill.—PO

Sangamo Electric Co., 11th & Converse Sts., Springfield, Ill.—M

Sickles Co., F. W., 165 Front St., Chicopee, Mass.—A, S

Silver Co., McMurdo, 1240 Main St., Hartford 3, Conn.—A, T

Solar Capacitor Sales Corp., 285 Madison Ave., New York 17, N. Y.—ED, EW, FS, I, M, P, PF, PO, S, TC, T, O

Sprague Electric Co., 189 Beaver St., North Adams, Mass.—ED, FS, I, P, PF, S, ST, TC, T, O

Sprague Products Co., 89 Marshall St., North Adams, Mass.—C, ED, EW, FS, I, M, P, PF, S, T

Stackpole Carbon Co., P. O. Box 327, St. Marys, Pa.—PO

Technical Radio Co., 275 9th St., San Francisco, Calif. A, T

Telecon Condenser Co., 3757 W. North Ave., Chicago 47, Ill.—FS, I, P, PF, ST, T, O

Westinghouse Elec. Corp., East Pittsburgh, Pa.—I, T

Winslow Co., 9 Liberty St., Newark, N. J.—S

Winters & Crampton Corp., Grandville, Mich.—A, ST

(7) Capacitors, Variable



- Air trimmerA
- Ceramic trimmerCT
- Compressed gas filledCG
- Mica trimmerM
- NeutralizingN
- PrecisionP
- Receiving tuningRT
- Transmitting tuningTT
- VacuumV

American Steel Package Co., Defiance, Ohio—A, RT

Arco Electronics, Inc., 135 Liberty St., New York 6, N. Y.—M

Automatic Mfg. Corp., 900 Passaic Ave., East Newark, N. J.—A, CT, M, N

Baldwin Instrument Co., Oceanside, N. Y.—RT

Barker & Williamson, Upper Darby, Pa.—A, CG, N, P, TT

Berger Electronics, 109-01 72nd Rd., Forest Hills, N. Y.—CT, RT

Bud Radio, Inc., 2118 E. 55th St., Cleveland 3, Ohio —"Bud"—A, N, P, RT, TT

Cardwell Mfg. Corp., Allen D., 81 Prospect St., Brooklyn 1, N. Y.—A, N, P, RT, TT

Centralab, Div. Globe-Union, Inc., 900 E. Keefe Ave., Milwaukee 1, Wis.—CT

Ceramicon—Erie Resistor Corp.

Collins Radio Co., Cedar Rapids, Iowa—TT

Crystal Research Laboratories, Inc., 29 Allyn St., Hartford 3, Conn.—CT, M

Doehler-Jarvis Corp., Robertson St., Bataria, N. Y.—CG

Eimac—Eitel-McCullough, Inc.

Eitel-McCullough, Inc., San Bruno, Calif.—"Eimac"—V

Electrical Reactance Corp., Franklinville, N. Y.—CT, M, P

Electro Motive Mfg. Co., South Park & John St., Willimantic, Conn.—"Elmenco"—M

Elmenco—Electro Motive Mfg. Co.

Emerson Radio & Phonograph Corp., 111 Eighth Ave., New York 11, N. Y.—RT

Erie Resistor Corp., 640 W. 12th St., Erie, Pa.—"Ceramicon"—CT

Fairchild Camera & Instrument Corp., 88-06 Van Wyck Blvd., Jamaica 1, L. I., N. Y.—P, RT, TT

Federal Mfg. & Engineering Corp., 199-217 Steuben St., Brooklyn 5, N. Y.—P

General Ceramics & Steatite Corp., Crows Mill Rd., Keasbey, N. J.—CT

General Electric Co., Specialty Division, 1001 Wolf St., Syracuse, N. Y.—A

General Instrument Corp., 829 Newark Ave., Elizabeth 3, N. J.—"G.I."—RT, TT

General Radio Co., 275 Massachusetts Ave., Cambridge 39, Mass.—"GR"—A, P

G. I.—General Instrument Corp.

G. R.—General Radio Co.

Hammarlund Mfg. Co., Inc., 460 W. 34th St., New York 1, N. Y.—A, N, P, RT, TT

Hudson American Corp., 25 W. 43rd St., New York 18, N. Y.—A, CT, N, P, RT, TT

ICA—Insuline Corp. of America

Industrial & Commercial Electronics, Belmont, Calif.—TT

Insuline Corp. of America, 3602 35th Ave., Long Island City 10, N. Y.—"ICA"—RT

International Products Corp., 2554 Greenmount Ave., Baltimore 18, Md.—M

Islip Radio Mfg. Corp., Islip, N. Y.—TT

Jennings Radio Mfg. Co., McLaughlin Rd., San Jose 12, Calif.—V

Johnson Co., E. F., Waseca, Minn.—"Johnson"—CG, N, TT

Kaar Engineering Co., 619 Emerson St., Palo Alto, Calif.—TT

Kidde, Walter & Co., Inc., 140 Cedar St., New York 6, N. Y.—CG

Lapp Insulator Co., Inc., 24 Craigie St., Le Roy, N. Y.—CG, N, TT

Macallen Co., Macallen St., Boston 27, Mass.—M

Maguire Industries, Inc., 1437 Railroad Ave., Bridgeport, Conn.—A, RT

Maguire Industries, Inc., Electronics Div., 342 W. Putnam Ave., Greenwich, Conn.—A, CT

Meissner Mfg. Div., Maguire Industries, Inc., Mt. Carmel, Ill.—A

Mica Products Mfg. Co., 69 Wooster St., New York 12, N. Y.—M

Millen Mfg. Co., Inc., James, 150 Exchange St., Malden 48, Mass.—A, M, N, P, RT, TT

National Ceramic Co., 400 Southard St., Trenton 2, N. J.—A, CT

National Co., Inc., 61 Sherman St., Malden 48, Mass.—"National"—A, CT, M, N, P, RT

North American Philips Co., Inc., 100 E. 42nd St., New York 17, N. Y.—A

Oak Mfg. Co., 1260 Clybourn Ave., Chicago 10, Ill.—A, RT, TT

Philco Corp., Tioga & "C" Sts., Philadelphia 34, Pa.—CT, M, N, RT, A

Precision Parts Co., 1200 N. Main St., Ann Arbor, Mich.—M

Radio Condenser Co., Copewood & David, Camden, N. J.—"R.C.C."—RT

RCA Victor Division, Radio Corp. of America, Front & Cooper Sts., Camden, N. J.—TT

R. C. C.—Radio Condenser Co.

Searle Aero Industries, Inc., P. O. Box 111, Orange Calif.—RT

Scovill Mfg. Co., 99 Mill St., Waterbury 91, Conn.—TT

Sickles, F. W., Co., 165 Front St., Chicopee, Mass.—A, M

Silver Co., McMurdo, 1240 Main St., Hartford 3, Conn.—M, P

Selar Mfg. Corp., 285 Madison Ave., New York 11, N. Y.—"Sol"—M

Special Products Co., 9115 Brookville Rd., Silver Spring, Md.—CT

Technical Radio Co., 275 9th St., San Francisco, Calif.—P, RT, TT

Teleradio Engineering Corp., 99 Wall St., New York 5, N. Y.—A, CT, M, P, TT

Vokar Corp., 7300 Huron River Drive, Dexter, Mich.—A, CT, M

Western Condenser Co., E. Walnut St., Watseka, Ill.—RT, TT

Westinghouse Elec. Corp., East Pittsburgh, Pa.—TT

Winters & Crampton Corp., Grandville, Mich.—P, RT, TT

(8) Coils, RF & IF



- Coil formsF
- I F coilsIF
- R F chokes (receiving)CH
- R F chokes (transmitting)RT
- R F coils (receiving)RF
- R F coils (transmitting)T

Aladdin Radio Industries, Inc., 225 W. Jackson Blvd., Chicago, Ill.—IF, CH, RF, T

Albion Coil Co., Albion, Ill.—IF, CH, RT, RF, T

Alden Products Co., 117 N. Main St., Brockton 64, Mass.—"Na-Ald"—F

American Coil & Engineering Co., 1271 N. Hermitage Ave., Chicago 22, Ill.—IF, CH, RT, RF, T

American Communications Corp., 306 Broadway, New York, N. Y.—CH, RT

Automatic Mfg. Corp., 900 Passaic Ave., East Newark, N. J.—F, IF, CH, RT, RF, T

Barker & Williamson, Upper Darby, Pa.—F, IF, CH, RT, RF, T

Bendix Radio, Div. of Bendix Aviation Corp., East Joppa Rd., Baltimore 4, Md.—IF, CH, RT, RF, T

Berger Electronics, 109-01 72nd Rd., Forest Hills, N. Y.—T

Bittermann Electric Co., 50 Henry St., Brooklyn 2, N. Y.—IF, CH, RT, RF, T

Bud Radio, Inc., 2118 E. 55th St., Cleveland 3, Ohio —CH, RT

Bunnell & Co., J. H., 81 Prospect St., Brooklyn 1, N. Y.—RT, T

Cambridge Thermionic Corp., 445 Concord Ave., Cambridge 38, Mass.—IF

Carron Mfg. Co., 415 S. Aberdeen St., Chicago 7, Ill.—"Carron"—IF, CH, RT, RF, T

Climax Engineering Co., Clinton, Iowa—CH, RT

Clippard Instrument Laboratory, 1440 Chase Ave., Cincinnati 23, Ohio—F, IF, CH, RF

Collins Radio Co., Cedar Rapids, Iowa—RT, T

Communication Parts, 1101 N. Paulina St., Chicago 22, Ill.—F, IF, CH, RT, RF, T

Continental-Diamond Fibre Co., Newark 50, Del.—F

Control Corp., 713 Central Ave., Minneapolis 14, Minn.—CH, RT, RF, T

Corning Glass Works, Corning, N. Y.—F, RF, T

Coto-Coil Co., Inc., 65 Pavilion Ave., Providence 6, R. I.—IF, CH, RT, RF, T

Crowley, Henry L. & Co., Inc., 1 Central Ave., West Orange, N. J.—F

Davis, Dean W. & Co., Inc., 549 Fulton St., Chicago, Ill.—F

Drake, R. L., Co., 11 Longworth St., Dayton 2, Ohio—F, CH, RT, RF, T

D-X Radio Products Co., 1200 N. Claremont Ave., Chicago 22, Ill.—F, IF, CH, RT, RF, T

Eastern Electronics Corp., 41 Chestnut St., New Haven, Conn.—IF, RF

Electrical Insulating Co., Inc., 12 Vestry St., New York 13, N. Y.—F

Electrical Reactance Corp., Franklinville, N. Y.—IF, CH, RF

Electrical Windings, Inc., 2015 N. Kolmar Ave., Chicago 39, Ill.—F

Electronic Specialty Co., 3456 Glendale Blvd., Los Angeles 26, Calif.—IF, CH, RF, T

Electronic Winding Co., 6227 Broadway, Chicago 40, Ill.—RF, T

Emerson Radio & Phonograph Corp., 111 Eighth Ave., New York 11, N. Y.—IF, CH, RF

Ensign Coil Co., 2516 S. Pulaski, Chicago 23, Ill.—RF

Erco Radio Laboratories, Inc., 231 Main St., Hempstead, N. Y.—F, IF, RT, RF, CH, T

Essex Electronics, 1060 Broad St., Newark 2, N. J.—F, IF, CH, RT, RF, T

Fairchild Camera & Instrument Corp., 88-06 Van Wyck Blvd., Jamaica 1, N. Y.—IF, CH, RT, RF, T

Fast, John E., & Co., 3129 N. Crawford Ave., Chicago 41, Ill.—CH

Federal Telephone & Radio Corp., 200 Mt. Pleasant Ave., Newark 4, N. J.—IF, CH, RT, RF, T

Fischer-Smith, Inc., 162 State St., West Englewood, N. J.—T

Garner Electronics Corp., 1100 W. Washington Blvd., Chicago 7, Ill.—IF, RF

General Electric Co., Specialty Division, 1001 Wolf St., Syracuse, N. Y.—IF

General Electric Co., Transmitter Division, Thompson Rd. Plant, Syracuse, N. Y.—RT, T

General Laminated Products, Inc., 2857 S. Halsted St., Chicago 8, Ill.—F

General Radio Co., 275 Massachusetts Ave., Cambridge 39, Mass.—G-R—CH

General Transformer Corp., 1250 W. Van Buren St., Chicago 7, Ill.—F

General Winding Co., 420 W. 45th St., New York 19, N. Y.—Gen-Win—F, IF, CH, RT, RF, T

Gen-Win—General Winding Co.

G-R—General Radio Co.

Guthman & Co., Edwin I., Inc., 15 S. Throop St., Chicago 7, Ill.—IF, CH, RF

Halicrafters Co., 2611 S. Indiana Ave., Chicago 16, Ill.—IF, RF

Hammarlund Mfg. Co., Inc., 460 W. 34th St., New York 1, N. Y.—F, IF, RT

Hardwick, Hindie, Inc., 40 Hermon St., Newark 5, N. J.—CH

Harvey Machine Co., Inc., 62 Avalon Blvd., Los Angeles 3, Calif.—RF, T

Harvey Radio Laboratories, Inc., 447 Concord Ave., Cambridge 38, Mass.—F, CH, RT, RF, T

Hercules Electric & Mfg. Co., Inc., 2500 Atlantic Ave., Brooklyn 7, N. Y.—F, IF, CH, RT, RF, T

Howard Pacific Corp., 932 N. Western Ave., Los Angeles 27, Calif.—IF, CH, RT

Hudson American Corp., 25 W. 43rd St., New York 18, N. Y.—IF, RF

Industrial Electronics Corp., 80 Bank St., Newark, N. J.—IF, CH, RT, RF, T

Insulating Tube Co., Inc., 26 Cottage St., Poughkeepsie, N. Y.—F

International Products Corp., 2254 Greenmount Ave., Baltimore 18, Md.—F

Islip Radio Mfg. Corp., Islip, N. Y.—IF, CH, RT, RF, T

Isolantite, Inc., 343 Cortlandt St., Belleville 9, N. J.—F

Jeffers Electronics, Hoover St., DuBois, Pa.—IF, CH, RT

Jennings Radio Mfg. Co., McLaughlin Rd., San Jose 12, Calif.—RF, T

Johnson Co., E. F., Waseca, Minn.—"Johnson"—F, RT, T

Lawton Products Co., Inc., 624 Madison Ave., New York 22, N. Y.—RF

Lectrom, Inc., 6125 W. 25th St., Cicero 50, Ill.—CH

Lenoxite Division, Lenox, Inc., 65 Prince St., Trenton 5, N. J.—F

Madison Electrical Products Corp., 78 Main St., Madison, N. J.—"Mepeco"—IF, CH, RT, RF, T

McInerney Plastics Co., 25 Commerce Ave., S. W., Grand Rapids 2, Mich.—F

Mayfair Molded Products Corp., 4440 N. Elston Ave., Chicago 30, Ill.—F

Megard Corp., 1601 S. Burlington Ave., Los Angeles 6, Calif.—F, IF, CH, RT, RF, T

Weissner Mfg. Div., Maguire Industries, Inc., Mt. Carmel, Ill.—IF, CH, RT, RF, T

Micarta Fabricators, Inc., 5324 Ravenswood Ave., Chicago 40, Ill.—F

Millen Mfg. Co., Inc., James, 150 Exchange St., Malden 48, Mass.—F, IF, CH, RT, RF, T

Miller Co., J. W., 5917 S. Main St., Los Angeles 3, Calif.—"Miller"—IF, CH, RF

Molded Insulation Co., Aircraft Control Div., 335 E. Priece St., Philadelphia 44, Pa.—IF, RF, T

Monarch Mfg. Co., 2014 N. Major Ave., Chicago 39, Ill.—F, IF, CH, RT, RF, T

Monroe Coil Co., 2659 W. 19th St., Chicago, Ill.—IF

Muter Co., 1255 S. Michigan Ave., Chicago 5, Ill.—F, IF, CH, RT, RF, T

Mycalex Corp. of America, 60 Clifton Blvd., Clifton, N. J.—F

Na-Ald—Alden Products Co.

National Co., Inc., 61 Sherman St., Malden 48, Mass.—"National"—"N-C"—F, IF, CH, RT, RF, T

N-C—National Company

New York Transformer Co., 62 William St., New York, N. Y.—CH, RT, RF, T

Ohmite Mfg. Co., 4835 W. Flournoy St., Chicago 44, Ill.—RT

Pacific Clay Products, SteaPACTite Div., 306 W. Ave. 26, Los Angeles 31, Calif.—F

Paramount Paper Tube Co., 801 Glasgow Ave., Ft. Wayne 4, Ind.—F

Peck Spring Co., 20 Grove St., Plainville, Conn.—F

Plastic Accessories, Inc., 460 Broome St., New York 13, N. Y.—F

Plax Corp., 133 Walnut St., Hartford 5, Conn.—F

Precision Paper Tube Co., 2035 W. Charleston St., Chicago 47, Ill.—F

Precision Parts Co., 1200 N. Main St., Ann Arbor, Mich.—IF, CH, RF

Printloid, Inc., 93 Mercer St., New York 12, N. Y.—F

Quad Mfg. Co., 462 N. Parkside Ave., Chicago 44, Ill.—F, IF, CH, RT, RF, T

Radex Corp., 2066 Elston Ave., Chicago 14, Ill.—IF, CH, RT, RF, T

RCA Victor Div., Radio Corp. of America, Front & Cooper Sts., Camden, N. J.—F, IF, CH, RF

Riggs & Jeffreys, Inc., 73 Winthrop St., Newark 4, N. J.—F

Sandee Mfg. Co., 3945 N. Western Ave., Chicago 18, Ill.—F

Santay Corp., 351 N. Crawford Ave., Chicago 24, Ill.—F

Saxonburg Potteries, Saxonburg, Pa.—F

Sickles Co., F. W., 165 Front St., Chicopee, Mass.—IF, CH, RF

Silver Co., McMurdo, 1240 Main St., Hartford 3, Conn.—F, IF, CH, RT, RF, T

Speer Resistor Corp., Theresa St., St. Marys, Pa.—F

Standard Winding Co., 44-62 Johnes St., Newburgh, N. Y.—F, IF, CH, RT, RF, T

Stanwick Winding Co., Newburgh, N. Y.—RF

Stockwell Transformer Corp., 295 N. State St., Concord, N. H.—IF, CH, RT, RF, T

Super Electric Products Corp., 1057 Summit Ave., Jersey City, N. J.—IF, RF

S-W Inductor Co., 1056 Wood St., Chicago 22, Ill.—F, IF, CH, RT, RF, T

Synthane Corp., Oaks, Pa.—F

Taylor Fibre Co., Norristown, Pa.—F

Technical Radio Co., 275—9th St., San Francisco, Calif.—RF

Thomas & Sons Co., R., Lisbon, Ohio—F

Utah Radio Products Co., 812-20 N. Orleans St., Chicago 10, Ill.—RT

Victory Mfg. Co., 1722-24 W. Arcade Pl., Chicago 12, Ill.—F

Vokar Corp., 7300 Huron River Drive, Dexter, Mich.—IF, CH, RF

Westinghouse Elec. Corp., East Pittsburgh, Pa.—F, CH, RT

Weymouth Instrument Co., 1440 Commercial St., East Weymouth 89, Mass.—CH, RT

American Time Products, Inc., 580 Fifth Ave., New York 19, N. Y.—F

Astatic Corp., Harbor & Jackson, Conneaut, Ohio—C, R

Atlas Products Corp., 30 Rockefeller Plaza, New York 20, N. Y.—C, F

Barker & Williamson, Upper Darby, Pa.—F

Bassett, Inc., Rex, 307-09-11 N.W. 1st Ave., Ft. Lauderdale, Fla.—F, QC

Billey Electric Co., Union Station Bldg., Erie, Pa.—F, H, S, T

Bodnar Co., Charles J., 68 Marbledale Rd., Tuckahoe 7, N. Y.—"BRL"—C

BRL-Bodnar Co., Charles J.

Browning Laboratories, Inc., 750 Main St., Winchester, Mass.—F

Brush Development Co., 3405 Perkins Ave., Cleveland 14, Ohio—R

Cadie Chemical Products, Inc., 621 Sixth Ave., New York 11, N. Y.—Q

Cambridge Thermionic Corp., 445 Concord Ave., Cambridge 38, Mass.—C

Commercial Crystal Co., 110-114 N. Water St., Lancaster, Pa.—C, H

Conn Ltd., C. G., 1101 E. Beardsley Ave., Elkhart, Ind.—F

Crowley & Co., Inc., Henry L., 1 Central Ave., West Orange, N. J.—C

Cryco, Inc., Box 269, South Pasadena, Calif.—H

Crystal Laboratories, 801 West Maple St., Wichita 12, Kansas—C, F

Crystal Products Co., 1519 McGee St., Kansas City 8, Mo.—C, S, Q

Crystal Research Laboratories, Inc., 29 Allyn St., Hartford 3, Conn.—C, F, H, S, Q, QC

Crystal Research Products, Dumont, N. J.—F, T

C. W. Mfg. Co., 3800 Brooklyn Ave., Los Angeles 33, Calif.—F, H, S, Q

Dallons Laboratories, 5066 Santa Monica Blvd., Los Angeles 27, Calif.—C, F, S

Diamond Drill Carbon Co., 53-63 Park Row, New York 7, N. Y.—Q

D-X Radio Products Co., 1200 N. Claremont Ave., Chicago 22, Ill.—H, S

Eastern Electronics Corp., 41 Chestnut St., New Haven, Conn.—F

"Edison's," 1309 N. Second St., Temple, Texas—CE, F

Electrical Products Corp., 920 30th St., Oakland, Calif.—QC

Electro Products Laboratories, 549 W. Randolph St., Chicago 6, Ill.—F

Electronic Measurements Co., Red Bank, N. J.—CP

Electronic Mechanics, Inc., 70 Clifton Blvd., Clifton, N. J.—H

Electronic Research Corp., 2655 W. 19th St., Chicago 8, Ill.—C, F, S, T

Electronic Specialties Mfg. Co., 68 High St., Worcester 2, Mass.—F

Elematic Equipment Corp., 6046 S. Wentworth Ave., Chicago 21, Ill.—CP, F, T

Elkay Radio Products, 305-309 E. Walnut St., Oglesby, Ill.—C, S

Emerson Radio & Phonograph Corp., 111 Eighth Ave., New York 11, N. Y.—C

Erco Radio Laboratories, Inc., 231 Main St., Hempstead, N. Y.—F

Espey Mfg. Co., Inc., 528 E. 72nd St., New York 21, N. Y.—F

Federal Engineering Co., 37 Murray St., New York 7, N. Y.—F

Federal Telephone and Radio Corp., 200 Mt. Pleasant Ave., Newark 4, N. J.—C, F, H, S, T

Ferris Instrument Co., 110 Cornelia St., Boonton, N. J.—F

Franklin Transformer Mfg. Co., 65 22nd Ave., N.E., Minneapolis 13, Minn.—F

Gaertner Scientific Corp., 1201 Wrightwood Ave., Chicago 14, Ill.—F

General Communication Co., 530 Commonwealth Ave., Boston 15, Mass.—F

General Crystal Corp., 1776 Foster Ave., Schenectady 8, N. Y.—F

General Electric Co.—Specialty Div., 1001 Wolf St., Syracuse, N. Y.—C, H

General Radio Co., 275 Massachusetts Ave., Cambridge 39, Mass.—F, T

Gentleman Products Div. of Henney Motor Co., 1702 Cuming St., Omaha, Neb.—F, S, Q

Gibbs & Co., Thomas B., Delavan, Wis.—F

Goodall Electric Mfg. Co., Third & Main St., Ogallala, Neb.—C, F, H, T, Q

Halicrafters Co., 2611 Indiana Ave., Chicago 16, Ill.—F

Henry Mfg. Co., 2213 Westwood Blvd., Los Angeles, Calif.—C, F, S

Hewlett-Packard Co., 395 Page Mill Rd., Palo Alto, Calif.—F

Higgins Industries, Inc., 2221 Warwick Ave., Santa Monica, Calif.—C, F, S

Hipower Crystal Co., 2033 W. Charleston St., Chicago 47, Ill.—"Hipower"—F, S

Hoffman Co., P. R., 321 Cherry St., Carlisle, Pa.—CE, H, Q

Hollister Crystal Co., 1617 Pearl St., Boulder, Colo.—F, H

Holtzer-Cabot Div., of First Industrial Corp., 125 Amory St., Roxbury 19, Mass.—C

Howard Mfg. Corp., 1401 S. Main St., Council Bluffs, Iowa—H

19) Crystals & Accessories



Crystal cartridges	C
Crystal electrodes	CE
Crystal production equipment	CF
Frequency standard	F
Holders	H
I F filter	S
Quartz crystals	QC
Rochelle salt crystals	R
Temp. control ovens	T
Tourmaline	TO
Raw quartz	Q

Aireon Mfg. Corp., Fairfax & Funston Rds., Kansas City 15, Kansas—F, H

Alden Products Co., 117 N. Main St., Brockton 64, Mass.—H

American Gem & Pearl Co., 6 West 48th St., New York 19, N. Y.—QC, TO, Q

American Jewels Corp., 94 County St., Attleboro, Mass.—C

Hunt & Sons, G. C., 133 N. Hanover St., Carlisle, Pa.—C
 Instrument Glass & Mirror Co., 383 Pearl St., Brooklyn 1, N. Y.—CE
 Isolantite, Inc., 343 Cortlandt St., Belleville 9, N. J.—H
 Jefferson, Ray, Inc., 40 E. Merrick Rd., Freeport, L. I., N. Y.—F
 Kaar Engineering Co., 619 Emerson St., Palo Alto, Calif.—C
 Kilburn Glass Co. Inc., J. R., 22 S. Worcester St., Chantley, Mass.—C
 Knights Co., James, Sandwich, Ill.—C, F, H, S, T, Q
 Lavoie Laboratories, Matawan-Freehold Rd., Morganville, N. J.—F
 Leeds & Northrup Co., 4901 Stenton Ave., Philadelphia 44, Pa.—F
 Lenoxite Division, Lenox Inc., 65 Prince St., Trenton 5, N. J.—H
 Leuck Crystal Laboratory, 245 S. 11th St., Lincoln 8, Nebr.—F
 Link, Fred M., 125 West 17th St., New York 11, N. Y.—C, T
 Mayfair Molded Products Corp., 4440 N. Elston Ave., Chicago 30, Ill.—H
 Megard Corp., 1601 S. Burlington St., Los Angeles 6, Calif.—F
 Millen Mfg. Co., Inc., James, 150 Exchange St., Malden 48, Mass.—F
 Miller, August E., 9226 Hudson Blvd., N. Bergen N. J.—QC
 Molded Insulation Co.—Aircraft Control Div., 335 E. Price St., Philadelphia 44, Pa.—H
 Monitor Piezo Products Co., 815 Fremont Ave., So. Pasadena, Calif.—C, F, H, S, T, Q
 Monawatt Electric Corp., 66 Bissell St., Providence, R. I.—H
 Mycalex Corp. of America, 60 Clifton Blvd., Clifton, N. J.—H
 NA-ALD—Alden Products Co.
 National Company, Inc., 61 Sherman St., Malden 48, Mass.—H, S
 National Electronic Mfg. Corp., 22-78 Steinway St., Long Island City, N. Y.—H
 National Gasket & Washer Mfg. Co., 122 E. 25th St., New York 10, N. Y.—H
 National Scientific Products Co., 5012 N. Kedzie Ave., Chicago, Ill.—H
 National Tile & Mfg. Co., 1200 E. 26th St., Anderson, Ind.—H
 North American Philips Co., Inc., 100 E. 42nd St., New York 17, N. Y.—C, F, S, Q, C
 Nurnberg Thermometer Co., Inc., 112 Broadway, Cambridge 42, Mass.—T
 Oguh, Inc., William B., 33 W. 60th St., New York 23, N. Y.—Q
 Pacific Electronics, W. 1011-1013 First Ave., Spokane, Wash.—F
 Pacific Radio Crystal Co., 1158 Sutter St., San Francisco, Calif.—QC
 Peterson Radio Co., 2800 W. Broadway, Council Bluffs, Iowa—"P. R. Crystals"—F, H
 Piezo Electric Products Co., 104 5th Ave., Baltimore 25, Maryland—F, S
 P. R. Crystals—Peterson Radio Co.
 Precision Piezo Service, 427 Mayflower St., Baton Rouge 10, La.—F, H, S, T
 Premier Crystal Laboratories, Inc., 63 Park Row, New York 7, N. Y.—C, F, H, S, T, Q
 Public Metal Prod. Inc., 100 Sixth Ave., New York 13, N. Y.—C, H
 Quartz Laboratories, Inc., 1513 Oak, Kansas City 8, Missouri—C, Q
 Radio Specialty Mfg. Co., 403 N.W. 9th St., Portland 9, Ore.—F, H, S
 R. E. C. Mfg. Corp., 1250 Highland St., Holliston, Mass.—H, T
 Reeves Sound Labs., Div. of Reeves-Ely Laboratories, Inc., 62 W. 47th St., New York, N. Y.—C, F, H, S, T
 Remier Co., Ltd., 2101 Bryant St., San Francisco 10, Calif.—H
 Ross Mfg. Co., 2241 S. Indiana Ave., Chicago, Ill.—H
 Scientific Radio Products Co., 738 W. Broadway, Council Bluffs, Iowa—C, F, S
 Shure Brothers, 225 W. Huron St., Chicago 10, Ill.—C
 Standard Piezo Co., 127 Cedar St., Carlisle, Pa.—C, F, H, S
 Stupakoff Ceramic & Mfg. Co., Latrobe, Pa.—H
 Sylvania Electric Products, Inc., 500 Fifth Ave., New York 18, N. Y.—C
 Telicon Corp., 851 Madison Ave., New York 21, N. Y.—F
 Trent Co., Harold E., 5005 Wilde St., Philadelphia 27, Pa.—T
 Union Piezo Corp., 701 McCarter Hwy., Newark 2, N. J.—C, F, H, S
 Universal Television System, 112-114 W. 18th St., Kansas City, Mo.—C
 Valpey Crystal Corp., Highland St., Holliston, Mass.—C, H, S, T
 V Precision Instrument Mfg. Co. Inc., 57-02 Hoffman Dr., Elmhurst, N. Y.—F
 Walker, Inc., Robert, 403 W. 8th St., Los Angeles, Calif.—F, H
 Westinghouse Elec. Corp., East Pittsburgh, Pa.—H
 Weymouth Instrument Co., 1440 Commercial St., East Weymouth 89, Mass.—C
 Willson Plastics Div., Willson Magazine Camera Co., 6022 Media St., Philadelphia 31, Pa.—H

(10) Dials, Name Plates and Knobs



Call letter tabs	CL
Complete dials	D
Crystals	C
Decalcomanias	DE
Dial cables & belts	DC
Dial lamps	L
Dial light assemblies	PL
Dial locks	DL
Dial pointers	P
Drive rubbers	DR
Escutcheons	E
Faces or scales	F
Jewel pilot lights	JL
Knobs—molded	KM
Knob springs	KS
Knobs—wooden	KW
Name plates	N
Panel signal lights	S
Shaff lock	SL
Telephone dials	T
Worm drives	WD

Ace Mfg. Corp., Erie Ave., at K St., Philadelphia 24, Pa.—WD
 Acme Fire Alarm Co. Inc., 106 Seventh Ave., New York 11, N. Y.—N
 Acromark Co., 9-13 Morrell St., Elizabeth 4, N. J.—D, F, N, T
 Aerolite Electronic Hardware Corp., 24 Cliff St., Jersey City 6, N. J.—L, PL, JL
 Alden Products Co., 117 N. Main St., Brockton 64, Mass.—D, L, PL, JL, KM, S
 Alpha Meter Service, 71 Nassau St., New York 7, N. Y.—F
 American Dial Co. Inc., 450 W. 45th St., New York, N. Y.—F
 American Emblem Co., Inc., Utica 1, N. Y.—E, N
 American Insulator Corp., New Freedom, Pa.—F, KM, N
 American Radio Hardware Co., 152-4 McQueston Pkwy., St. Mt. Vernon, N. Y.—"Arhco"—D, L, PL, P, DR, JL, S, SL
 Ansonia Clock Co. Inc., 103 Lafayette St., New York 13, N. Y.—D
 Arens Controls, Inc., 2253 S. Halsted St., Chicago 8, Ill.—KM
 Arhco—American Radio Hardware Co.
 Auburn Button Works, Inc., Auburn, N. Y.—KM
 Austin Co., 0., 335 Throop Ave., Brooklyn 21, N. Y.—D, DE, E, F, N
 Automatic Electric Co., 1033 W. Van Buren St., Chicago 7, Ill.—T
 Avery Adhesives, 453 E. 3rd St., Los Angeles 13, Calif.—N
 Bakelite Corp., 30 E. 42nd St., New York 17, N. Y.—C
 Barker & Williamson, Upper Darby, Pa.—D, DL, SL, WD
 Barnes Co., Wallace, P. O. Box 1521, Bristol, Conn.—KS
 Bastian Bros. Co., 1600 N. Clinton Ave., Rochester, N. Y.—DE, E, F
 Bend-A-Lite Plastics Div., 423 S. Honore St., Chicago 12, Ill.—E
 Berger Electronics, 109-01 72nd Rd., Forest Hills, N. Y.—DC, KM
 Birnbach Radio Co., Inc., 145 Hudson St., New York 13, N. Y.—DC, KM, KW
 Bostonian Process Co., 40 W. 13th St., New York 11, N. Y.—CL, F, N
 Browne Electric Co., J., 3774 Surf Ave., Brooklyn 24, N. Y.—PL, JL, S
 Bud Radio, Inc., 2118 E. 55th St., Cleveland 3, Ohio "BUD"—D, PL, JL, KM, N
 Cannon Electric Development Co., 3209 Humboldt St., Los Angeles 31, Calif.—S
 Cardy-Lundmark Co., 1801 W. Byron St., Chicago 13, Ill.—CL, PL
 Carlton Lamp Corp., 730 S. 13th St., Newark 3, N. J.—L
 Chicago Die Mold Corp., 4001 Wrightwood Ave., Chicago 39, Ill.—KM
 Cinch Mfg. Corp., Div. United-Carr Fastener Co., 2335 W. Van Buren St., Chicago, Ill.—KS
 Cleveland Plastics, Inc., 1611 E. 21st St., Cleveland 14, Ohio—KM
 Colonial Brass Co., 1900 Vine St., Middleboro, Mass.—N
 Control Corp., 718 Central Ave., Minneapolis 14, Minn.—N
 Croname Inc., 3701 N. Ravenswood Ave., Chicago 13, Ill.—D, C, E, F, KM, N
 Crystal Laboratories, 801 West Maple St., Wichita 12, Kan.—C
 Cutter-Hammer Inc., 315 N. 12th St., Milwaukee 1, Wis.—KM
 Davies Molding Co., Harry, 1428 N. Wells St., Chicago 10, Ill.—CL, KM
 Dial Light Co. of America, Inc., 900 Broadway, New York 3, N. Y.—PL

Diemolding Corp., Rashbach St., Canastota, N. Y.—KM
 Doehler-Jarvis Corp., Robertson St., Batavia, N. Y.—CL, D, P, F, KM, N
 Drake Mfg. Co., 1713 W. Hubbard St., Chicago 22, Ill.—L, PL, JL, S
 Dual Remote Control Co., 31776 Cowan Rd., Wayne, Mich.—KM
 Eby Inc., Hugh H., 18 W. Chelton Ave., Philadelphia 44, Pa.—KM
 Edwards, Inc., T. J., 210 South St., Boston 5, Mass.—N
 Electric Coding Machine Co., 57 Franklin St., New York 13, N. Y.—F, N
 Electrical Insulation Co., 12 Vestry St., New York 13, N. Y.—E, N
 Electro-Marine Co., 274 Madison Ave., New York 16, N. Y.—N
 Electronic Specialty Co., 3456 Glendale Blvd., Los Angeles 26, Calif.—DL, P
 Enameloid—Cloisonne—Gemold Corp.
 Erie Resistor Corp., 640 W. 12th St., Erie, Pa.—P, E, KM
 Etched Products Corp., 39-01 Queens Blvd., Long Island City 4, N. Y.—D, P, E, F, N
 Ever Ready Label Corp., 141-155 E. 25th St., New York 10, N. Y.—CL
 Federal Screw Products Co., 224 W. Huron St., Chicago 10, Ill.—PL, JL, S
 Federal Telephone & Radio Corp., 200 Mt. Pleasant Ave., Newark 4, N. J.—D, C, N, T
 G. Felsenthal & Sons, 4108 W. Grand, Chicago 51, Ill.—D, C, E, F, KM, N
 Flock Process Co.—Velvetone Div., 3 Quincy St., Norwalk, Conn.—D, E
 GC—General Cement Mfg. Co.
 Gemlite—Gemold Corp.
 Gemold Corp., 7910-7930 Albion Ave., Elmhurst, L. I., N. Y.—"Enameloid-Cloisonne," "Gemlite"—D, P, E, KM, N
 General Cement Mfg. Co., 919 Taylor Ave., Rockford, Ill.—"G-C"—CL, C, DC, DL, DR, KM, KS, KW
 General Electric Co., Lamp Dept., Nela Park, Cleveland 12, Ohio—L
 General Electric Co.—Specialty Div., 1001 Wolf St., Syracuse, N. Y.—C, KM, S
 General Electronics Mfg. Co., 2225 S. Hoover St., Los Angeles 7, Calif.—F
 General Radio Co., 275 Massachusetts Ave., Cambridge 39, Mass.—D, DL, KM, WD
 Goodall Electric Mfg. Co., Third & Main St., Ogallala, Neb.—C, KM, N
 Gordon Specialties Co., 823 S. Wabash Ave., Chicago 5, Ill.—D, KM, KW, N
 Gothard Mfg. Co., 2114 Clear Lake Ave., Springfield, Ill.—L, PL
 Grammes & Sons, Inc., L. F., 392 Union St., Allentown, Pa.—D, P, E, F, N
 Greenhut Insulation Co., 31 W. 21st St., New York, N. Y.—E, F, N
 Hart Mfg. Co., Hamilton St., Hartford 1, Conn.—JL, S
 Harvey Radio Laboratories, Inc., 447 Concord Ave., Cambridge 38, Mass.—SL
 Herzog Miniature Lamp Works, 12-23 Jackson Ave., Long Island City 1, N. Y.—JL
 Hopp Press, Inc., 460 W. 34th St., New York 1, N. Y.—CL, E, F, KM, N
 ICA—Insuline Corp. of America
 Imperial Molded Products Corp., 2925 W. Harrison St., Chicago 12, Ill.—KM
 Industrial Screw & Supply Co., 717 W. Lake St., Chicago 6, Ill.—KM, KW
 Insuline Corp. of America, 36-02 35th Ave., Long Island City 10, N. Y.—"TCA"—CL, KM, N
 International Merit Products Corp., 251 W. 54th St., New York 19, N. Y.—WD
 J.F.D. Mfg. Co., 4117 Fort Hamilton Parkway, Brooklyn 19, N. Y.—DC, KW
 Johnson Co., E. F., Waseca, Minn.—KM
 Kellogg Switchboard & Supply Co., 6650 S. Cicero Ave., Chicago 38, Ill.—E, JL, KM, KW, N, S, T
 Keystone Electronics Co., 50-52 Franklin St., New York 13, N. Y.—N
 Kilburn Glass Co., Inc., J. R., 22 S. Worcester St., Chantley, Mass.—C, JL
 Kirkland Co., H. R., 8-10 King St., Morristown, N. J.—L, PL, N
 Kopp Glass, Inc., Swissvale, Pittsburgh, Pa.—PL, JL
 Kulka Electric Mfg. Co., 30 South St., Mt. Vernon, N. Y.—PL
 Kurz Kasch, Inc., Dayton 1, Ohio—P, KM
 Long Island Engraving Co., 19 W. 21st St., New York 10, N. Y.—E, N
 McInerney Plastics Co., 25 Commerce Ave., S.W., Grand Rapids 2, Mich.—CL, D, E, N
 Maico Co., Inc., 21 N. Third St., Minneapolis, 1, Minn.—KM
 Mayfair Molded Products Corp., 4440 N. Elston Ave., Chicago 30, Ill.—E, KM
 Megard Corp., 1601 S. Burlington Ave., Los Angeles 6, Calif.—D, F
 Meyercood Co., 5323 W. Lake St., Chicago 44, Ill.—DE
 Micarta Fabricators, Inc., 5324 Ravenswood Ave., Chicago 40, Ill.—PL
 Millen Mfg. Co., Inc., James, 150 Exchange St., Malden 48, Mass.—DL, P, KM, SL, WD
 Molded Insulation Co.—Aircraft Control Div., 335 E. Price St., Philadelphia 44, Pa.—KM
 National Co. Inc., 61 Sherman St., Malden 48, Mass.—D, DL, F, KM, SL, WD
 National Lock Co., 1902 Seventh St., Rockford, Ill.—E, KM, KW, N
 National Molding Co., 2141 W. Washington Blvd., Los Angeles 7, Cal.—KM

New England Electrical Works, Inc., 365 Main St., Lisbon, N. H.—DC
 New Hernies Engravers, 821 Broadway, New York 3, N. Y.—E, S
 New England Etching & Plating Co., 25 Spring St., Holyoke, Mass.—E, F
 New England Radiocrafters, 1156 Commonwealth Ave., Boston 31, Mass.—D
 Norton Laboratories, Inc., 560 Mill St., Lockport, N. Y.—KM
 Pan Electronics Laboratories, Inc., 500 Spring St., N.W., Atlanta, Ga.—C
 Panelyte Div., St. Regis Paper Co., 230 Park Ave., New York 17, N. Y.—N
 Parisian Novelty Co., 3510 South Western Ave., Chicago 9, Ill.—CL, D, C, P, F
 Peck Spring Co., 20 Grove St., Plainville, Conn.—KS
 Peerless Roll Leaf Co., Inc., 4511 New York Ave., Union City, N. J.—N
 Philco Corp., Tioga & C Sts., Philadelphia 34, Pa.—PL
 Photox Silk Screen Supply Co., 30 Irving Pl., New York 3, N. Y.—CL, D, F, N
 Pilot Industries Inc., 202 E. 44th St., New York 17, N. Y.—D
 Plastic Accessories, Inc., 460 Broome St., New York 13, N. Y.—CL, D, C, P, F, N
 Plastic Fabricators Co., 440 Sansome St., San Francisco 11, Calif.—CL, E, F, N
 Point Mfg. Co., 5775 N. Ridge Ave., Chicago 26, Ill.—F, J, L, KM
 Ports Mfg. Co., 3265 E. Belmont Ave., Fresno 3, Calif.—CL, N
 Premier Crystal Laboratories, Inc., 63 Park Row, New York 7, N. Y.—CL, C, L, PL, F, J, L, KM, WD
 Printloid, Inc., 93 Mercer St., New York 12, N. Y.—CL, D, C, P, F, N
 Publix Metal Prod. Inc., 100 Sixth Ave., New York 13, N. Y.—D
 Radio Craftsmen, 1341 S. Michigan Ave., Chicago 6, Ill.—D, L
 Reiner Electronics Co., Inc., 152 W. 25th St., New York 1, N. Y.—KM
 Remler Co. Ltd., 2101 Bryant St., San Francisco 10, Calif.—KM
 Reynolds Metals Co., 2500 S. Third St., Louisville 1, Ky.—D
 Rhodes Mfg. Co., 1753 N. Honore St., Chicago, Ill.—KM, KW
 Richardson Co., 27th & Lake Sts., Melrose Park, Ill.—D, KM
 R-9 Crystal Co., Inc., 907 Penn Ave., Pittsburgh, Pa.—C
 Santay Corp., 351 N. Crawford Ave., Chicago 24, Ill.—E, KM, N
 Saxl Instrument Co., 38-40 James St., E. Providence 14, R. I.—N
 Schott Co., Walter L., 9306 Santa Monica Blvd., Beverly Hills, Calif.—"WALSCO"—DC, PL, DI, KS
 Screemakers, Inc., 64 Fulton St., New York 7, N. Y.—D, E, N
 Searle Aero Industries, Inc., P. O. Box 111, Orange, Calif.—PL, P, J, S
 Shakespear Products Co., 241 E. Kalamazoo Ave., Kalamazoo, Mich.—E, KM
 Signal Indicator Corp., 894 Broadway, New York, N. Y.—PL
 Silk Screen Supplies, Inc., 33 Lafayette St., Brooklyn, N. Y.—F, N, CL
 Siffcocks-Miller Co., 10 W. Parker Ave., Maplewood, N. J.—D, N
 Silver Co., McMurdo, 1240 Main St., Hartford, 3, Conn.—D
 Slater Corp., N. G., 3 W. 29th St., New York, N. Y.—D, C, N
 South Shore Radio & Electric Corp., 6815 Stony Island Ave., Chicago 49, Ill.—F, D
 Standard Molding Corp., 460 Bacon St., Dayton 1, Ohio—P, E, KM, N
 Standard Products Co., 505 Blvd. Bldg., Detroit 2, Mich.—CL, D, E, KM, N
 Synthane Corp., Oaks, Pa.—D
 Syracuse Ornamental Co., 581 S. Clinton St., Syracuse 2, N. Y.—"Syroco," "Syrocowood," "Woodite"—E, KW, N
 Syroco—Syracuse Ornamental Co.
 Syrocowood—Syracuse Ornamental Co.
 Tingstol Co., 1461 W. Grand Ave., Chicago 22, Ill.—PL
 Ton-Tex Corp., 245 Pearl St., N.W., Grand Rapids 2, Mich.—DC
 Tung-Sol Lamp Works, Inc., 95 Eighth Ave., Newark 4, N. J.—L
 Ucinite Co., Div. United-Carr Fastener Corp., Newtonville, Mass.—KS
 United Radio Mfg. Co., 191 Greenwich St., New York, N. Y.—N
 U. S. Radium Corp., 535 Pearl St., New York 7, N. Y.—P
 U. S. Rubber Co., 1230 Sixth Ave., New York 20, N. Y.—D
 Victory Mfg. Co., 1722-24 W. Arcade Place, Chicago 12, Ill.—P, E, KM
 Walco—Walter L. Schott Co.
 Waterbury Companies, Inc., 835 S. Main St., Waterbury 90, Conn.—D, P, E, KM
 Westinghouse Elec. Corp., East Pittsburgh, Pa.—L, J, L, KM, S, SL, WD
 Wickwire—Spencer Metallurgical Corp., 260 Sherman Ave., Newark 5, N. J.—KS
 Wilson Plastics Div., Willson Magazine Camera Co., 6022 Media St., Philadelphia 31, Pa.—CL, D, DE, E, F, KM, N

(111) Drafting Room Equipment



- Drafting instrumentsDI
- Drawing tablesDT
- Drawing papersD
- Electric erasersEE
- Lighting equipmentL
- Pencils and accessoriesP
- Print making machinesBM
- Sensitized papersSP
- StoolsST
- Tracing clothTC

American Photocopy Equipment Co., 2849 N. Clark, Chicago 14, Ill.—BM, SP
 Arkay Laboratories Inc., 1570 S. First St., Milwaukee 4, Wis.—BM
 Arkwright Finishing Co., 70 Westminster St., Providence, R. I.—TC
 Art Specialty Co., 3245 W. Lake St., Chicago, Ill.—"Flexo"—L
 Bell Radio & Television, 125 E. 46th St., New York 17, N. Y.—L
 Bruning Co., Inc., Charles, 4754 Montrose Ave., Chicago 41, Ill.—DI, DT, D, EE, L, P, BM, SP, ST, TC
 Cardinell Corp., 15 Label St., Montclair, N. J.—DI, D, TC
 Commercial Metal Products Co., 2251 W. St. Paul Ave., Chicago 47, Ill.—L
 Dazor Mfg. Co., 4483 Duncan Ave., St. Louis 10, Mo.—L
 Diehl Mfg. Co., Finnerne Plant, Somerville, N. J.—L
 Joseph Dixon Crucible Co., 167 Wayne St., Jersey City 3, N. J.—P
 Eagle Electric Mfg. Co., Inc., 23-10 Bridge Plaza So., Long Island City 1, N. Y.—L
 Eagle Pencil Co., 703 E. 13th St., New York 9, N. Y.—P
 Eastman Kodak Co., Rochester 4, N. Y.—SP
 Eraser Co., Inc., 231 W. Water St., Syracuse 2, N. Y.—P

Faber Co., Inc., A. W., 41 Dickerson St., Newark 4, N. J.—EE, P
 Faber, Eberhard, Pencil Co., 37 Greenpoint Ave., Brooklyn 22, N. Y.—P
 Flexo—Art Specialty Co.
 Fostoria Pressed Steel Corp., Fostoria, Ohio—L
 Gates & Co., Inc., Geo. W., Hempstead Turnpike & Lucille Ave., Franklin Square, L. I., N. Y.—L
 General Electric Co., Lamp Dept., Nela Park, Cleveland 12, Ohio—L
 General Pencil Co., 67 Fleet St., Jersey City 6, N. J.—P
 Hamilton Mfg. Co., Two Rivers, Wis.—DT
 Hampden Mfg. Co., Inc., 301 E. Fourth St., Plainfield, N. J.—P
 Holliston Mills, Inc., Norwood, Mass.—"Microweave"—TC
 Keuffel & Esser Co., 300 Adams St., Hoboken, N. J.—DI, DT, D, EE, SP, ST, TC
 Keystone Electronics Co., 50-52 Franklin St., New York 13, N. Y.—L
 Larrimore Sales Co., 311 Locust St., St. Louis 2, Mo.—L
 McInerney Plastics Co., 25 Commerce Ave., S.W., Grand Rapids 2, Mich.—DI
 Microweave—Holliston Mills, Inc.
 Ozalid Products Division, General Aniline & Film Corp., Johnson City, N. Y.—BM
 Peck & Harvey, 5736 N. Western Ave., Chicago 45, Ill.—BM
 Post Co., Frederick, 3650 N. Avondale, Chicago, Ill.—DT, D, EE, DI
 Radio Inventios, Inc., 155 Perry St., New York, N. Y.—SP
 Reliance Pencil Co., 22 S. 6th Ave., Mt. Vernon, N. Y.—P
 Standard Pressed Steel Co., Jenkintown, Pa.—ST
 Swivelier Co., 30 Irving Place, New York 3, N. Y.—L
 Ullman Products Co., 857-61 4th Ave., Brooklyn 32, N. Y.—L
 Wakefield Brass Co., F. W., Vermillion, Ohio—L
 Westinghouse Electric Corp., East Pittsburgh, Pa.—L
 Wheeler Reflector Co., 275 Congress St., Boston 10, Mass.—L
 Wickes Brothers, Saginaw, Mich.—BM
 Willson Plastics Division, Willson Magazine Camera Co., 6022 Media St., Philadelphia 31, Pa.—DI

(112) Electronic Control Equipment

(See also ELECTRONIC MEDICAL & INDUSTRIAL EQUIPMENT)



- Boiler level alarmsB
- CombustionIC
- Conductivity controlsCC
- Counting devicesC
- Dimension controlDC
- Door controlD
- Flow controlF
- Grading & sorting controlsG
- Heat treating controlsHC
- Humidity controlsH
- Intrusion alarmAS
- Level controlL
- Lighting controlsLC
- Machine safety controlMS
- Motor & generator controlMC
- Package wrapping controlP
- Position controlPC
- Pressure controlVC
- Printing controlsPT
- Servo amplifiersSA
- Servo control systemsSC
- Servo indicating systemsSI
- Smoke density controlsS
- Solenoid valvesSV
- Temperature controlsTC
- Time controlsTI
- TrafficTR
- Weight controlWC
- Welding controlWE

Adam Electric Co., Frank, 3650 Windsor Place, St. Louis 13, Mo.—LC
 Aerovox Corp., 740 Belleville Ave., New Bedford, Mass.—MC
 Agnew Electric Co., Milford, Mich.—WE
 AIC—Atomic Instruments Co.
 Air-Track Mfg. Co., A Div. of Aerodynamic Research Corp., 5009 Calvert Road, College Park, Md.—C, D, LC
 Alco Valve Co., 865 Kingsland, St. Louis 5, Mo.—L, SV
 Allied Control Co., Inc., 2 East End Ave., New York 21, N. Y.—SV
 Allis-Chalmers Mfg. Co., P. O. Box 512, Milwaukee 1, Wis.—MC
 American District Telegraph Co., 155 6th Avenue, New York 13, N. Y.—AS
 American Electronics Co., 1935 Whitman Ave., Butte, Mont.—TI
 American Radio Co., 811 E. Garfield Ave., Glendale, Calif.—C, D, MS, TC, TI
 American Time Products, Inc., 580 5th Ave., New York 19, N. Y.—MC, TI
 Amglo Corp., 4234 Lincoln Ave., Chicago 18, Ill.—AC, CC, D, LC, MC, TI, TR, WE
 Arrow-Hart & Hegeman Elec. Co., 103 Hawthorn St., Hartford 6, Conn.—MC
 Askania Regulator Co., 1603 So. Michigan Ave., Chicago 16, Ill.—IC, F, L, MC, VC, TC, WC
 ATC—Automatic Temperature Control Co., Inc.
 Atomic Instrument Co., 160 Charles St., Boston, Mass.—"AIC"—C
 Audio-Tone Oscillator Co., 237 John St., Bridgeport 3, Conn.—DC, G, L, TI
 Auth Electrical Specialty Co., Inc., 422 E. 53rd St., New York 22, N. Y.—C
 Automatic Electric Mfg. Co., 10 State St., Mankato 1, Minn.—AS, TI
 Automatic Products Co., 2450 N. 32nd St., Milwaukee, Wis.—SV
 Automatic Temperature Control Co., Inc., 34 E. Logan St., Philadelphia 44, Pa.—"ATC"—IC, F, HC, L, VC, TC, TI
 Avimeter Corp., 370 W. 35th St., New York 1, N. Y.—TI
 Bailey Meter Co., 1050 Ivanhoe Road, Cleveland 10, Ohio—B, IC, F, L, S, TC
 Barber-Colman Co., River & Loomis Sts., Rockford, Ill.—H, L, VC, SV, TC, TI
 Barker & Williamson, Upper Darby, Pa.—AS, C, DC, D, G, MS, TI
 Betts & Betts Corp., 551 W. 52nd St., New York 19, N. Y.—LC
 Breco Corp., 55 Van Dam St., New York 13, N. Y.—C, G, MS, S, TI, WC
 Bristol Co., Waterbury, Conn.—F, HC, H, L, VC, TC, TI
 Browne Electric Co., J., 3774 Surf Ave., Brooklyn 24, N. Y.—HC, MS, MC, TC, TI, WE
 Browning Laboratories, Inc., 750 Main St., Winchester, Mass.—AS
 Bruno-New York, Inc., Engineering Products Div., 351 4th Ave., New York 10, N. Y.—AS, C, MS, TI
 Burke & James, Inc., 321 S. Wabash Ave., Chicago 4, Ill.—LC
 Burling Instrument Co., 253 Springfield Ave., Newark 3, N. J.—TC
 Burlington Instrument Co., North 4th St., Burlington, Iowa—MC, TI
 Butte Electric & Mfg. Co., 124 Russ St., San Francisco, Calif.—AS, TR, C
 Carpenter Mfg. Co., Master Light Bldg., Boston 45, Mass.—LC, TR
 Carpenter Products, Inc., 85 Washburn St., Bridgeport, Conn.—WE
 Clark Controller Co., 1146 E. 152nd St., Cleveland 10, Ohio—MC, TI, WE
 Clark Radio Equipment Corp., 4313 N. Lincoln Ave., Chicago 18, Ill.—C, S
 Clarostat Mfg. Corp., 130 Clinton St., Brooklyn 2, N. Y.—MC
 Cline Electric Mfg. Co., 4550 W. Lexington Ave., Chicago, Ill.—MC
 Combustion Control Corp., 77 Broadway, Cambridge 42, Mass.—"Fireye"—B, IC
 Communications Co., Inc., 300 Greco Ave., Coral Gables 34, Fla.—TR
 Conn Ltd., C. G., 1101 E. Beardsley Ave., Elkhart, Ind.—S
 Conn. Tele. & Elec. Div., Great American Industries, Inc., Meriden 3, Conn.—AS

Cordox Western, Inc., 151 North Ave., Los Angeles 31, Calif.—IC
 Cutler-Hammer, Inc., 315 N. 12th St., Milwaukee 1, Wis.—HC, MC, PC, TI, WE
 Crystal Research Products, Dumont, N. J.—TC
 Dalmo Victor, Div. of Goldfield Consolidated Mines Co., 1414 El Camino Real, San Carlos, Calif.—TC
 Dayton Acme Co., 930 York St., Cincinnati 14, Ohio—IC, TI
 Dickson Co., 7420 Woodlawn Ave., Chicago 19, Ill.—HC, L, VC, TC
 Dielectric Products Co., Inc., 125 Virginia Ave., Jersey City 5, N. J.—H
 Dietz Mfg. Co., 2310 So. La Cienega Blvd., Los Angeles 34, Calif.—TC
 Distillation Products, Inc., Vacuum Equipment Div., 755 Ridge Road West, Rochester 13, N. Y.—VC
 Doehler-Jarvis Corp., Robertson St., Batavia, N. Y.—D, MS, PC, TR
 Doolittle Radio, Inc., 7421 S. Loomis Blvd., Chicago 36, Ill.—C
 Drake Co., R. L., 11 Longworth St., Dayton 2, Ohio—B, IC, CC, C, DC, D, F, G, HC, H, L, LC, MS, MC, P, VC, S, TC, TI, TR, WC
 Eclipse-Pioneer Division, Bendix Aviation Corp., Teterboro, N. J.—F, L, SA, SC, SI
 Electric Coding Machine Co., 57 Franklin St., New York 13, N. Y.—TI
 Electric Controller & Mfg. Co., 2700 E. 79th St., Cleveland 4, Ohio—WE
 Electric Eye Equipment Co., 6 West Fairchild St., Danville, Ill.—C, DC, F, G, PC
 Electric Furnace Co., West Wilson St., Salem, Ohio—HC
 Electric Products Co., 1725 Clarkstone Rd., Cleveland 12, Ohio—LC, MC
 Electrical Industries, Inc., 42 Summer Ave., Newark 4, N. J.—WE
 Electro-Tech Equipment Co., 117 Lafayette St., New York 13, N. Y.—HC, MC, TC, TI
 Electrocon Corp., 219 W. Sunrise Highway, Freeport, L. I., N. Y.—TI
 Electron Equipment Corp., 917 Meridian Ave., So. Pasadena, Calif.—C, MS, MC, PC, WC
 Electronic Apparatus, Inc., 347 Madison Ave., New York 17, N. Y.—IC, CC, C, DC, D, L, LC, S, TI, WC, WE
 Electronic Control Corp., 1573 E. Forest Ave., Detroit, Mich.—AS, IC, C, DC, D, G, MS, S, TC, TI
 Electronic Engineers, 611 E. Garfield Ave., Glendale 5, Calif.—CC, DC, F, G, H, LC, MC, BC, WC
 Electronic Processes Corp., 249 Richards Road, Ridge-wood, N. J.—P
 Electronic Radio Alarm, Inc., 1920 Lincoln-Liberty Bldg., Philadelphia 7, Pa.—AS
 Electronic Research Corp., 2655 W. 19th St., Chicago 8, Ill.—TC
 Electronic Research & Mfg. Corp., 5805 Hough Ave., Cleveland 3, Ohio—AS, L
 Electronic Specialties Mfg. Co., 68 High St., Worcester 2, Mass.—B, CC, C, G, HC, H, LC, MS, S, TI, WE
 Electronic Tube Corp., 1200 E. Mermaid Lane, Chestnut Hill, Philadelphia 18, Pa.—C, L
 Exact Weight Scale Co., 944 5th Ave., Columbus 8, Ohio—WC
 Export Industries, 53 Downing St., New York 14, N. Y.—P
 Fairchild Camera & Instrument Corp., 88-06 Van Wyck Blvd., Jamaica 1, N. Y.—F, MC
 Federal Instrument Co., 3609 Cernon St., Long Island City, N. Y.—B, CC, DC, MS
 Fireye-Combustion Control Corp.
 Fischer & Porter Co., Hatboro, Pa.—F
 Fischer-Smith, Inc., 162 State St., West Englewood, N. J.—IC, CC, C, H, L, S, TC, TI
 Fish-Schurman Corp., 230 East 45th St., New York 17, N. Y.—PC, TI
 Fisher Pierce Co., 74 Ceylon St., Boston 21, Mass.—CC, D, L, LC, P, TC, TI
 Fisher Research Laboratory, 1951 University Ave., Palo Alto, Calif.—L
 Foote Pierson & Co., Inc., 75 Hudson St., Newark 4, N. J.—DC
 Fractional Motors Co., 1501 N. Halsted St., Chicago 22, Ill.—MC
 Friez Instrument Div., Bendix Aviation Corp., Taylor Ave., near Loch Raven Blvd., Baltimore 4, Md.—H, TC
 Gem Radio & Television Co., 303 W. 42nd St., New York 18, N. Y.—AS, C, G, TI
 General Aviation Equipment Co., Inc., 2 East End Ave., New York 21, N. Y.—MC
 General Communication Co., 530 Commonwealth Ave., Boston 15, Mass.—C
 General Control Co., 1200 Soldiers Field Rd., Boston 34, Mass.—C, G, LC, MS, P, S, TI
 General Controls Co., 801 Allen Ave., Glendale 1, Calif.—SV, TC, TI
 General Electric Co., Transmitter Div., Thompson Road Plant, Syracuse, N. Y.—HC
 General Radio Co., 275 Massachusetts Ave., Cambridge 39, Mass.—C
 Geophysical Instrument Co., 1820 N. Nash St., Arlington, Va.—C, MC
 Glenn-Roberts Co., 3100 E. 10th St., Oakland 1, Calif.—WE
 G-M Laboratories, Inc., 4300 N. Knox Ave., Chicago 41, Ill.—LC
 Hansen Co., Wm., 165 Silverbrook Ave., Niles, Mich.—AS, C, D, MS, S
 Hansen Mfg. Co., R. R. No. 1, Princeton 14, Ind.—SA, SC, SI
 Haydon Mfg. Co. Inc. Forestville, Conn.—C, TI

Herbach & Rademan Co., Mfg. Div., 517 Ludlow, Philadelphia 6, Pa.—AS, C, DC, G, L, MS, TI
 Hercules Electric & Mfg. Co., Inc., 2500 Atlantic Ave., Brooklyn 7, N. Y.—F, IC, MS, VC, SV, TC, WE
 Hertzner Electric Co., 12690 Elmwood Ave., Cleveland 11, Ohio—MC
 Hetherington & Son, Inc., Robert, 1216 Elmwood Ave., Sharon Hill, Pa.—C, SC
 Hoffman Engineering Co., 458 Sexton Bldg., Minneapolis 4, Minn.—IC, C, DC, D, G, LC, MS, P, VC, PC, S, TI
 Huber Radio Co., 260 S. Center St., Casper, Wyo.—LC, TC
 Industrial Instruments, Inc., 17 Pollock Ave., Jersey City, N. J.—B, CC, F, H
 J-B-T Instruments, Inc., 441 Chapel St., New Haven 8, Conn.—TI
 Keeney & Co., Inc., J. H., 6610 S. Ashland Ave., Chicago 36, Ill.—C, TI
 Kidde & Co., Inc., Walter, 140 Cedar St., New York 6, N. Y.—VC, SV
 Kellogg Switchboard & Supply Co., 6650 S. Cicero Ave., Chicago 38, Ill.—C
 Kirkland Co., H. R., 8-10 King St., Morristown, N. J.—LC
 Lawton Products Co., Inc., 624 Madison Ave., New York 22, N. Y.—C, DC, LC, TC, TI
 Leeds & Northrup Co., 4901 Stenton Ave., Philadelphia 44, Pa.—IC, CC, HC, H, S, TC
 Lektra Labs., Inc., 30 E. 10th St., New York 3, N. Y.—TI
 Leupold & Stevens Instruments, 4445 N.E. Glisan St., Portland 13, Ore.—B, F, L, VC
 Lewis Engineering Co., 52 Rubber Ave., Naugatuck Conn.—TC
 Lewyt Corp., 60 Broadway, Brooklyn 11, N. Y.—C, F, VC, S
 Long Co., L. J., 186 Grand St., New York 13, N. Y.—TI
 Luminite Electronic Co., 407 S. Dearborn St., Chicago 5, Ill.—B, CC, C, D, F, L, LC, MS, TI
 Lyman Electronic Corp., 12 Cass St., Springfield, Mass.—C, HC, MS, MC, TI, WE
 Magnetic Gauge Co., High & Bartges Sts., Akron 11, Ohio—DC
 Martin-Holmes, Inc., 249 Wayne Ave., Dayton, Ohio
 McClintock Co., O. B., 139 Lyndale Ave., N., Minneapolis 3, Minn.—AS
 McDonnell & Miller, 400 N. Michigan Ave., Chicago, Ill.—B
 Maguire Industries, Inc., 1437 Railroad Ave., Bridgeport, Conn.—C, DC, G
 Megard Corp., 1601 S. Burlington Ave., Los Angeles 6, Calif.—AS, LC
 Mercoird Corp., 4201 Belmont Ave., Chicago 41, Ill.—B, L, VC, TC
 Merrifield & Son, J. D., 609 N. 9th St., Rocky Ford, Col.—P
 Mettler Co., Lee B., 406 S. Main St., Los Angeles 13, Calif.—IC
 Micro Switch Division of First Industrial Corp., Freeport, Ill.—TC
 Miles Reproducer Co., Inc., 812 Broadway, New York 3, N. Y.—C, DC, D, LC, MS, MC
 Minneapolis-Honeywell Regulator Co., 2712 4th Ave., Minneapolis, Minn.—HC, MC, TC
 Molded Insulation Co., Aircraft Control Div., 335 E. Price St., Philadelphia 44, Pa.—AS, MS
 Moulic Specialties Co., 1005-1007 W. Washington St., Bloomington, Ill.—TC, TI
 Nelson Automatic Gauge Co., 402 Oklahoma Bldg., Tulsa 3, Okla.—L
 Norton Electrical Instrument Co., 85 Hilliard St., Manchester, Conn.—HC
 Nurnberg Thermometer Co., Inc., 112 Broadway, Cambridge 42, Mass.—TC
 Offner Electronics Inc., 5320 N. Kedzie Ave., Chicago 25, Ill.—C, DC
 Operadio Mfg. Co., St. Charles, Ill.—B, TI
 Paragon Electric Co., 37 West Van Buren, Chicago 5, Ill.—TI
 Photoswitch, Inc., 77 Broadway, Cambridge 42, Mass.—CC, C, D, L, LC, MS, MC, P, PC, S, TI, WC
 Photovolt Corp., 35 Madison Ave., New York 16, N. Y.—PC, TI
 Plating Processes Corp., 109 Lyman St., Holyoke, Mass.—B, C, DC, F, HC, L, VC, SV, TC
 Point Mfg. Co., 5775 N. Ridge Ave., Chicago 26, Ill.—VC, TI
 Polytron Corp., 401 Broadway, New York 13, N. Y.—C, G, S, TI
 Portable Products Corp., C. J. Tagliabue Div., 550 Park Ave., Brooklyn 6, N. Y.—IC, HC, H, S, TC, TI
 Potter Instrument Co., 136-56 Roosevelt Ave., Flushing, N. Y.—C, P, WE
 Powers Electronic & Communication Co., New St., Glen Cove, N. Y.—TI
 Precision Electronics Co., 815 Washington St., Newtonville 60, Mass.—TI
 Process & Instruments, 60 Greenpoint Ave., Brooklyn 22, N. Y.—CC, F, L, VC, TC
 Production Instrument Co., 702-20 W. Jackson Blvd., Chicago 6, Ill.—C, TI
 Progressive Welder Co., 3050 E. Outer Drive, Detroit 12, Mich.—C
 Pyrometer Instrument Co., 103 Lafayette St., New York, N. Y.—HC
 Radio Frequency Laboratories, Inc., Boonton, N. J.—C, F, PC
 Rectifier Engineering Co., 1809 E. 7th St., Los Angeles 21, Calif.—AS, LC

Reeves Sound Labs. Div. of Reeves-Ely Lab., Inc., 62 W. 47th St., New York, N. Y.—DC, F, PC, SC, SI
 Rehtron Corp., 4313 Lincoln Ave., Chicago 18, Ill.—AS, B, IC, CC, C, D, G, HC, H, LC, MS, MC, P, PC, S, TC, TI, TR, WC
 Reliance Electric & Eng. Co., Ivanhoe Rd., Cleveland 10, Ohio—MC
 Rhodes, Inc., M. H., 30 Bartholomew Ave., Hartford, Conn.—TI
 Richardson-Allen Corp., 15 W. 20th St., New York, N. Y.—TI
 Rieber, Inc., Frank, 11916 West Pico Blvd., Los Angeles 34, Calif.—TI
 Riggs & Jeffrys, Inc., 73 Winthrop St., Newark 4, N. J.—TI
 Robinette Co., W. C., 802 Fair Oaks Ave., South Pasadena, Calif.—MC
 Rowe Radio Research Laboratory Co., 2422 N. Pulaski Rd., Chicago 39, Ill.—AS, CC, C, G, VC, TI
 Rubicon Co., Ridge Ave. at 35th St., Philadelphia 32, Pa.—CC
 Sarco Co., Inc., 475 Fifth Ave., New York 17, N. Y.—TC
 Schulmerich Electronics, Inc., 220-228 N. Main St., Sellersville, Pa.—AS
 Sciaky Bros., 4915 W. 67th St., Chicago 38, Ill.—SV, TI, WE
 Sherron Electronics Co., 1201 Flushing Ave., Brooklyn 6, N. Y.—CC, C, F, G, HC, L, TI, TR, WC, WE
 Signal Engineering & Mfg. Co., 154 W. 14th St., New York 11, N. Y.—TI
 Simonds Machine Co., Inc., 246-48 Worcester St., Southbridge, Mass.—MS
 Smith Mfg. Co., Nathan R., 105 Pasadena Ave., South Pasadena, Calif.—SV
 Special Electric Labs., 7657 S. Central Ave., Los Angeles 1, Calif.—TI
 Spencer Thermostat Co., 34 Forest St., Attleboro, Mass.—TC
 Sperry Gyroscope Co., Inc., Great Neck, L. I., N. Y.—SA, SC, SI
 Standard Electric Time Co., 89 Logan St., Springfield 2, Mass.—C, TI
 Stanley Works, New Britain, Conn.—D
 Stevenson, Jordan & Harrison, Inc. (Electronic Power Co.), 19 W. 44th St., New York 18, N. Y.—WE
 Stoelting Co., C. H., 424 N. Roman Ave., Chicago 24, Ill.—TI
 Struthers-Dunn Inc., 1321 Arch St., Philadelphia 7, Pa.—MS, MC
 Superior Electric Co., Laurel St., Bristol, Conn.—HC, LC
 Sylvania Electric Products, Inc., 500 Fifth Ave., New York 18, N. Y.—VC
 Synchro Start Products, Inc., 221 E. Cullerton St., Chicago 16, Ill.—MS, MC
 Tally & Cooper, 75 Front St., Brooklyn 1, N. Y.—C, PC, SA, SC, SI, S, TI, TR, WC
 Task Electronics Co., 245 W. 54th St., New York, N. Y.—IC, C, DC, D, F, MC, S
 Tech Laboratories, 337 Central Ave., Jersey City 7, N. J.—H
 Techno-Scientific Co., 901 Nepperhan Ave., Yonkers 3, N. Y.—TC
 Teleoptic Co., 1251 Mound Ave., Racine, Wis.—TI
 Teleregister Corp., 157 Chambers St., New York 7, N. Y.—C
 Televiso Products, Inc., 6533 Olmstead Ave., Chicago, Ill.—DC
 Tenney Engineering Inc., 26 Avenue B, Newark 5, N. J.—HC, H, TC
 Thwing Albert Instrument Co., Penn St. & Pulaski Ave., Philadelphia 44, Pa.—TC
 Tork Clock Co., Inc., 1 Grove St., Mt. Vernon, N. Y.—TC, TI
 Trimount Instrument Co., 37 W. Van Buren, Chicago 5, Ill.—B, CC, F, L, VC
 Ulanet Co., George, 413 Market St., Newark 5, N. J.—TC, TI
 United Cinephone Corp., 65 New Litchfield St., Torrington, Conn.—C, D, F, G, L, LC, MS, P, S, TC, TI
 United Transformer Corp., 150 Varick St., New York 13, N. Y.—LC
 Universal X-Ray Products, Inc., 1800 N. Francisco Ave., Chicago 47, Ill.—C
 Valverde Laboratories, 252 Lafayette St., New York 12, N. Y.—HC, TC
 Victoreen Instrument Co., 5806 Hough Ave., Cleveland 3, Ohio—C
 Walker, Inc., Robert, 403 W. 8th St., Los Angeles 14, Calif.—MC, S, TC
 Wallace & Tiernan Products, Inc., Main & Mill Sts., Belleville 9, N. J.—TI
 Ward Leonard Electric Co., 31 South Street, Mt. Vernon, N. Y.—LC, MC, TI
 Weksler Thermometer Corp., 52 W. Houston St., New York, N. Y.—TC
 Weltronic Co., 19500 W. 8 Mile Rd., Detroit 19, Mich.—MS, MC, TI, WE
 Westinghouse Elec. Corporation, East Pittsburgh, Pa.—AS, B, C, DC, D, F, HC, H, L, LC, MS, MC, P, PC, S, SV, TC, TI, VC, WC, WE
 Weston Electrical Instrument Corp., 614 Frelinghuysen Ave., Newark 5, N. J.—LC
 Wheelco Instruments Co., 847 W. Harrison St., Chicago 7, Ill.—B, MS, TC
 Wilson Mfg. Co., Inc., 600 N. Andrews Ave., Ft. Lauderdale, Fla.—LC, TI
 World Wide Electronics, Inc., 72 E. 13th St., New York 3, N. Y.—CC, DC, H, S
 Worner Electronic Devices, 609 W. Lake St., Chicago 6, Ill.—AS, IC, C, D, LC, MS, P, PC, S, WC

Wurlitzer Co., Rudolph, Niagara Falls Blvd., North Tonawanda, N. Y.—MC
Yardeny Laboratories, Inc., 105-107 Chambers St., New York 7, N. Y.—D, PC, TC
York Electric & Machine Co., Carillotone Div., 30-34 N. Penn St., York, Pa.—C

(13) Electronic Medical & Industrial Equipment & Accessories

(See also ELECTRONIC CONTROL EQUIPMENT)



- Anoxia photometersAP
AudiometersA
Cortical stimulatorC
DiathermyD
Dielectric heatingHD
Electro-cardiographEC
Electro-encephalographEE
Electro-sedative generatorEG
Electro-shock machinesS
Electron microscopesE
Fluoroscope screensF
Geophysical instrumentsGI
Insecticidal lampsGL
Induction heatingI
Infra-red drying equipmentID
Internal combustion analyzersIC
Lie detectorsL
Metal flaw detectionMF
Metal locatorML
Meteorological trans. & rec.M
Moisture metersMM
Stethographs and stethophonesST
Temperature indicatorsTI
Wind velocity meterWM
X-Ray diffraction equipmentXD
X-Ray inspection machinesX
X-Ray intensity metersXM
X-Ray screens & filtersXS

Aero Communications, Inc., 231 Main St., Hempstead, L. I., N. Y.—HD
Aircraft X-Ray Laboratories, 1600 E. 7th St., Los Angeles 21, Calif.—MF, XD, X
Air-Track Mfg. Co., A Div. of Aerodynamic Research Corp., 5009 Calvert Road, College Park, Md.—I
Aironics Mfg. Co., 5145 W. San Fernando Rd., Los Angeles 26, Calif.—HD
Ajax Electrothermic Corp., Ajax Park, Trenton 5, N. J.—I, HD
Allis Chalmers Mfg. Co., P. O. Box 512, Milwaukee 1, Wis.—I, HD
Alnor—Illinois Testing Laboratories, Inc.
American Coil & Engineering Co., 1271 N. Hermitage Ave., Chicago 22, Ill.—HD
American Electronics Co., 1935 Whittman Ave., Butte, Mont.—ML
American Instrument Co., 8030-8050 Georgia Ave., Silver Spring, Md.—XD
American Radio Co., 611 E. Garfield Ave., Glendale 5, Calif.—D, HD, GI, M, ST
Amplifier Co. of America, 398 Broadway, New York 13, N. Y.—EC, EE, ST
Annis, R. B. Co., 1101 N. Delaware St., Indianapolis 2, Ind.—I
Associated Research, Inc., 231 S. Green St., Chicago 7, Ill.—GI, L
Audio-Tone Oscillator Co., 237 John St., Bridgeport 3, Conn.—EG
Aurex Corp., 1117 N. Franklin St., Chicago, Ill.—A
Barker & Williamson, Upper Darby, Pa.—D, HD, I, GI
Bell Radio & Television, 125 E. 46th St., New York 17, N. Y.—HD
Bogen, David Co., Inc., 663 Broadway, New York 12, N. Y.—D
Branston Electric Mfg. Co., 61-65 Gill Pl., Buffalo 13, N. Y.—D
Brelco Corp., 55 Van Dam St., New York 13, N. Y.—I
Brush Development Co., 3405 Perkins Ave., Cleveland 14, Ohio—GI
Budd Induction Heating, Inc., 11811 Charlevoix St., Detroit, Mich.—HD, I
Bunnell, J. H. & Co., 81 Prospect St., Brooklyn 1, N. Y.—D, I
Burdick Corp., Milton, Wis.—D, HD, EC, EG, S, ML
Burton Mfg. Co., 3855 N. Lincoln Ave., Chicago 13, Ill.—GI, GL
Cambridge Instrument Co., Inc., 3005 Grand Central Terminal, New York 17, N. Y.—ST, GI
Campbell X-Ray Corp., 2 Overland St., Boston 15, Mass.—D, HD, XO, X
Chicago Novelty Co., Inc., 1348 Newport Ave., Chicago, Ill.—GL

Cleveland Tungsten, Inc., 10200 Meech Ave., Cleveland 5, Ohio—D
Cleveland Wire Cloth & Mfg. Co., 3573 E. 78th St., Cleveland 5, Ohio—XS
Coleman Electric Co., 318 Madison St., Maywood, Ill.—AP, XM
Colloid Equipment Co., Inc., 50 Church St., New York 7, N. Y.—MM
Commercial Enclosed Fuse Co. of N. J., 1317 Willow Ave., Hoboken, N. J.—ID
Continental X-Ray Corp., 1536 N. Clybourne, Chicago, Ill.—D, X
Love, Don Signal Systems, Inc., Div. of Electra Voice Corp., 5215-25 Ravenswood Ave., Chicago 40, Ill.—D
Crystal Research Products, Dumont, N. J.—D, S
Cutler-Hammer, Inc., 315 N. 12th St., Milwaukee 1, Wis.—HD
Cyclonics Mfg. Co., Inc., 3906 Hudson Blvd., Union City, N. J.—HD
Cyclotron Specialties Co., Moraga, Calif.—GI
Dallons Laboratories, 5066 Santa Monica Blvd., Los Angeles 27, Calif.—EG
Dewalt Radio Mfg. Corp., 440 Lafayette St., New York 3, N. Y.—M
Dillon, W. C. & Co., Inc., 5410 W. Harrison St., Chicago 44, Ill.—ML
Doehler-Jarvis Corp., Robertson St., Batavia, N. Y.—GL
Drake, E. L. Co., 11 Longworth St., Dayton 2, Ohio—A, D, HD, GI, J, L
Dumont, Allen B. Laboratories, Inc., 2 Main Ave., Passaic, N. J.—MF, ML
Eagle Electric Mfg. Co., Inc., 23-10 Bridge Plaza S., Long Island City 1, N. Y.—ID
Eastern Amplifier Corp., 704 E. 140th St., New York 54, N. Y.—A, D
Ecco High Frequency Electric Corp., 7020 Hudson Blvd., North Bergen, N. J.—HD, I
Edin Electronics Co., 207 Main St., Worcester, Mass.—D, EC, EE, GL, ST
Electric Heat Control Co., 9123 Inman Ave., Cleveland 5, Ohio—IC
Electro-Medical Laboratory, Inc., Holliston, Mass.—C, EC, EE, L, ST
Electro Physical Laboratories, 45 W. 18th St., New York 11, N. Y.—EC, EE, S
Electro Products Laboratories, 549 W. Randolph St., Chicago 6, Ill.—IC
Electron Equipment Corp., 917 Meridian Ave., South Pasadena, Calif.—HD
Electronic Corp. of America, 45 W. 18th St., New York 11, N. Y.—EC, EE, S
Electronic Engr. Service & Laboratories, 114-38 Farmers Blvd., St. Albans 12, N. Y.—A, D, ST
Electronic Engineers, 611 E. Garfield Ave., Glendale 5, Calif.—A, C, EC, I, ID, MF, ML
Electronic Measurements Co., Red Bank, N. J.—A
Electronic Processes Corp., 249 Richards Rd., Ridge-wood, N. J.—HD
Electronic Research & Mfg. Corp., 5805 Hough Ave., Cleveland 3, Ohio—HD, I, MF
Electronic Research Corp., 2655 W. 19th St., Chicago 8, Ill.—D, HD, GI, I
Electronic Sound Engineering Corp., 109 N. Dearborn St., Chicago 2, Ill.—GL
Electronic Specialties Mfg. Co., 68 High St., Worcester 2, Mass.—EC, I, ML, ST
Electronic Supply Co., 207 Main St., Worcester 8, Mass.—HD
Engineering Laboratories, Inc., 610-624 E. 4th St., Tulsa 3, Okla.—EC, GI
Eppley Laboratory, Inc., 12 Sheffield Ave., Newport, R. I.—TI
Farrand Optical Co., Inc., Bronx Blvd. & E. 238th St., New York 66, N. Y.—E
Federal Electric Co., Inc., 8700 S. State St., Chicago, Ill.—HD
Federal Telephone & Radio Corp., 200 Mt. Pleasant Ave., Newark 4, N. J.—HD, I
Ferranti Electric, Inc., 30 Rockefeller Plaza, New York 20, N. Y.—GI
Fairchild Camera & Instrument Corp., 88-06 Van Wyck Blvd., Jamaica 1, N. Y.—X
Fischer, Robert A., 1720 Hillcrest Ave., Glendale 2, Calif.—D, GL, HD
Fisher Research Laboratory, 1961 University Ave., Palo Alto, Calif.—GI, ML
Fisher Scientific Co., 711 Forbes St., Pittsburgh, Pa.—ID
Fostoria Pressed Steel Corp., Fostoria, Ohio—ID
Freed Transformer Co., 72 Spring St., New York 12, N. Y.—D
Friez Instrument Div., Bendix Aviation Corp., Taylor Ave., near Loch Raven Blvd., Baltimore 4, Md.—M, WM
Garfield Medical Apparatus Co., 147 W. 22nd St., New York 11, N. Y.—D
Gates, Geo. W. & Co., Inc., Hempstead Turnpike & Luella Ave., Franklin Sq., L. I., N. Y.—GL
Gem Radio & Television Co., 303 W. 42nd St., New York 18, N. Y.—EC, I
General Communication Co., 530 Commonwealth Ave., Boston 15, Mass.—WM
General Electric Co., 1 River Road, Schenectady 5, N. Y.—I, HD
General Electric Co., Lamp Dept., Nela Park, Cleveland 12, Ohio—GL, ID
General Electric Co., Specialty Div., 1001 Wolf St., Syracuse, N. Y.—A
General Electric Co., Transmitter Div., Thompson Road Plant, Syracuse, N. Y.—HD, I
General Electric X-Ray Corporation, 175 West Jackson Blvd., Chicago 4, Ill.—D, EC, XD, X, XS

Geophysical Instrument Co., 1820 N. Nash St., Arlington, Va.—GI, ML, XM
G & G Precision Works, Inc., 5-33 48th Ave., Long Island City 1, N. Y.—EC
Girler Corp., Thermex Div., 224 E. Broadway, Louisville 1, Ky.—HD
Globe Phone Mfg. Corp., 2 Linden St., Reading, Mass.—ML, ST
Gurley, W. & L. E., 514 Fulton St., Troy, N. Y.—M, WM
Han, C. M., Lamp Co., 1035 E. Hancock Ave., Detroit 7, Mich.—ID
Hanovia Chemical & Mfg. Equipment, 233 N. J. R. B. Ave., Newark 5, N. J.—D, GL
Hart Moisture Gauges, Inc., 126 Liberty St., New York 6, N. Y.—MM
Harvey Machine Co., Inc., 6200 Avalon Blvd., Los Angeles 3, Calif.—GI
Harvey-Wells Electronics, Inc., North St., South-bridge, Mass.—HD
Hathaway Instrument Co., 1315 S. Clarkson St., Denver 10, Col.—GI
H-B Instrument Co., 2524 N. Broad St., Philadelphia, Pa.—TI
Heiland Research Corp., 130 E. Fifth Ave., Denver 9, Col.—GI
Henry Mfg. Co., 2218 Westwood Blvd., Los Angeles, Calif.—HD
Herbach & Rademan Co., Mfg. Div., 517 Ludlow, Philadelphia 6, Pa.—D, GI, L, XD, XM
Hewlett-Packard Co., 395 Page Mill Rd., Palo Alto, Calif.—A
Higgins Industries, Inc., 2221 Warwick Ave., Santa Monica, Calif.—D
Hoffman Engineering Corp., 458 Sexton Bldg., Minneapolis 4, Minn.—HD, S, I, MF
Huber Radio Co., 260 S. Center St., Casper, Wyo.—GL
Hudson American Corp., 25 W. 43rd St., New York 18, N. Y.—HD, I
Hunt, G. C. & Sons, 133 N. Hanover St., Carlisle, Pa.—HD
Illinois Testing Laboratories, Inc., 420 N. La Salle St., Chicago 10, Ill.—Alnor—ML, GI
Illinois Tool Works, 2501 N. Keeler Ave., Chicago 39, Ill.—HD, I
Induction Heating Corp., 389 Lafayette St., New York 3, N. Y.—HD, I
Industrial Electronics Corp., 80 Bank St., Newark, N. J.—GL
Islip Radio Mfg. Corp., Islip, N. Y.—HD, I
Jarrell-Ash Co., 165 Newbury St., Boston 16, Mass.—XD
Johnson, E. F. Co., Waseca, Minn.—HD
Kahle Engineering Co., 1307 Seventh St., North Bergen, N. J.—HD
Kelley Koett Mfg. Co., 212 W. 4th St., Covington, Ky.—XD, X
Kluze Electronics Co., 1031 N. Alvarado St., Los Angeles 26, Calif.—HD, I
LaRose, W. T. & Associates, 635 Second Ave., Troy, N. Y.—HD
Laurehk Radio Mfg. Co., 3931 Monroe Ave., Wayne, Mich.—A, ST
Lavoie Laboratories, Matawan-Freehold Rd., Mor-ganville, N. J.—EE, X
Lawton Products Co., Inc., 624 Madison Ave., New York 22, N. Y.—D, ML
Lektra Labs, Inc., 30 E. 10th St., New York 3, N. Y.—C, D, S
Lepel High Frequency Laboratories, Inc., 39 W. 60th St., New York 23, N. Y.—HD, I
Leupold & Stevens Instruments, 4445 N. E. Glisan St., Portland, 13, Ore.—M
Liebel-Flarsheim Co., 303 W. Thrd St., Cincinnati 2, Ohio—D
Lincoln Electronics Corp., 653 11th Ave., New York 19, N. Y.—D, HD
Link, Fred M., 125 W. 17th St., New York 11, N. Y.—HD, I
Litton Engineering Laboratories, P. O. Box 749, Red-wood City, Calif.—I
Long, L. J., Co., 186 Grand St., New York 13, N. Y.—HD, I
Lyman Electronic Corp., 12 Cass St., Springfield, Mass.—I
Magnaflex Corp., 5900 Northwest Highway, Chicago 31, Ill.—MF, ML
Magnetic Analysis Corp., 42-44 Twelfth St., Long Island City 1, N. Y.—MF, ML
Maico Co., Inc., 21 N. Thrd St., Minneapolis 1, Minn.—AP, A, S, L, ML, ST
Mattern, F. Mfg. Co., 4647 N. Cleora Ave., Chicago 30, Ill.—XD, X
Megard Corp., 1601 S. Burlington Ave., Los Angeles 6, Calif.—HD, S, I
Merit Short Wave Diathermy Co., 2758 Whittier Blvd., Los Angeles 23, Calif.—D, HD
McKesson Appliance Co., 2228 Ashland Ave., Toledo, Ohio—EC
McNeill Engineering Co., 4057 W. Van Buren St., Chicago, Ill.—S
Michigan Fluorescent Light Co., 71-77 S. Parke St., Pontiac, Mich.—GI, ID, XS
Mico Instrument Co., 80 Trowbridge St., Cambridge 38, Mass.—GI
Miles Reproducer Co., Inc., 812 Broadway, New York 3, N. Y.—EC, ST, WM
Miller, J. W. Co., 5917 S. Main St., Los Angeles 3, Calif.—D
Miller, William Corp., 362 Colorado St., Pasadena 2, Calif.—GI
Mineralight—Ultra-Violet Products, Inc.
Miskella Infra-Red Co., East 73rd & Grand Ave., Cleve-land 4, Ohio—ID

Moisture Register Co., 133 N. Garfield, Alhambra, Calif.—AM

Molded Insulation Co., Aircraft Control Div., 335 E. Price St., Philadelphia 44, Pa., D, HD, I

Mooradian High Frequency Labs., 137 Park Pl., Bogota, N. J.—D

Moulis Specialties Co., 1005-1007 W. Washington St., Bloomington, Ill.—L

Nalco—North American Electric Lamp Co.

Newman X-Ray Corp., 518 Hanks Ave., Aurora, Ill.—X

North American Electric Lamp Co., 1014 Tyler St., St. Louis 6, Mo.—"Nalco"—HD

North American Philips Co., Inc., 100 E. 42nd St., New York 17, N. Y.—XD, X

Norton Electrical Instrument Co., 85 Hilliard St., Manchester, Conn.—FI

Northwest Syndicate, Inc., 711 St. Helens Ave., Tacoma 1, Wash.—D, HD

Offner Electronics, Inc., 5320 N. Kedzie Ave., Chicago 25, Ill.—EE, S

Ohio Crankshaft Co., Tocco Div., 3800 Harvard Ave., Cleveland 1, Ohio—L, HD

Operadio Mfg. Co., St. Charles, Ill.—HD

Parker Engineering Products Co., 16 W. 22nd St., New York, N. Y.—HD, L

Peerless Laboratories, 467 10th Ave., New York 18, N. Y.—D, X

Picker X-Ray Corp., 300 Fourth Ave., New York 10, N. Y.—XD, X, XM, XS

Polk Electronics, 119 Bleecker St., New York 12, N. Y.—D, HD, I

Professional Tool & Engineering Co., 615 S. Peoria St., Chicago 11, Ill.—XM, XS

Radio Craftsmen, 1341 S. Michigan Ave., Chicago 5, Ill.—HD

Radio Frequency Laboratories, Inc., Boonton, N. J.—GI, IC, MI

Radio Receptor Co., Inc., 251 W. 19th St., New York 11, N. Y.—HD

Rahm Instruments, Inc., 12 W. Broadway, New York 7, N. Y.—C, EC, EE, EG, S, ST

Raytheon Mfg. Co., 55 Chapel St., Newton 58, Mass.—D, HD, I, X

RCA Victor Division, Radio Corp. of America, Front & Cooper Sts., Camden, N. J.—HD, E, I, ML

Rehtron Corp., 4313 Lincoln Ave., Chicago 18, Ill.—MI

Remler Co., Ltd., 2101 Bryant St., San Francisco 10, Calif.—HD

Ritter Co., Inc., Rochester 3, N. Y.—X

Robinson-Houchin Optical Co., 79 Thurman Ave., Columbus 6, Ohio—A, ST

Rogers Diesel & Aircraft Corp., 1120 Leggett Ave., New York 59, N. Y.—I

Rowe Radio Research Laboratory Co., 2422 N. Pulaski Rd., Chicago 39, Ill.—GI, MF, ML, WM

Safety Electric Co., 110 S. Dearborn St., Chicago 3, Ill.—D, GL

St. John X-Ray Service, Inc., 30 20 Thomson Ave., Long Island City 1, N. Y.—XD, X, XS

Sanborn Co., 39 Osborn St., Cambridge 39, Mass.—EC

Saxi Instrument Co., 38-40 James St., East Providence 14, R. I.—GI, WM

"S" Corrugated Quenched Gap Co., Scientific Electric Div., 107 Monroe St., Garfield, N. J.—I, HD

Searle Aero Industries, Inc., P. O. Box 111, Orange, Calif.—HD, I

Shakenproof, Inc., 2501 N. Keeler Ave., Chicago 39, Ill.—HD

Sherron Electronics Co., 1201 Flushing Ave., Brooklyn 6, N. Y.—HD

Smith, Nathan R. Mfg. Co., 105 Pasadena Ave., South Pasadena, Calif.—D

Sonotone Corp., Saw Mill River Rd., Elmsford, N. Y.—A

Sperry Products, Inc., 15th & Willow Ave., Hoboken, N. J.—MF

Standard Engineering Laboratories, 40 S. Oak Knoll Ave., Pasadena 1, Calif.—D, HD, I

Sterilaire—Ultra-Violet Products, Inc.

Stevens Arnold Co., 22 Elkins St., South Boston, Mass.—HD, I

Stoelting, C. H. Co., 424 N. Homan Ave., Chicago 24, Ill.—L

Stokes, F. J. Machine Co., 6054 Tabor Rd., Philadelphia 20, Pa.—HD

Sylvania Electric Products, Inc., 500 Fifth Ave., New York 18, N. Y.—HD

Terma Electric Co., 20 W. 22nd St., New York, N. Y.—D, I

Thermionic Engineering Corp., 32 W. 12th St., Bayonne, N. J.—D, HD, EC, EE

Thompson, John E. Co., 1440 W. 47th St., Chicago 9, Ill.—D, HD, I

Transmitter Equipment Mfg. Co., Inc., 345 Hudson St., New York 14, N. Y.—D, EE, S, HD

Trimont Instrument Co., 37 W. Van Buren, Chicago 5, Ill.—GI

Trumbull Electric Mfg. Co., Woodford Ave., Plainville, Conn.—ID

Ultra-Violet Products, Inc., 5205 Santa Monica Blvd., Los Angeles 27, Calif.—"Sterilaire"—"Mineralight"—GI, MF

United Electronics Co., 42 Spring St., Newark 2, N. J.—D, HD, I

U. S. Television Mfg. Corp., 3 W. 61st St., New York 23, N. Y.—D

Universal X-Ray Products, Inc., 1800 N. Francisco Ave., Chicago 47, Ill.—L, X, HD

Vacolite Co., 3001-3003 N. Henderson, Dallas, Tex.—A

Victoreen Instrument Co., 5806 Hough Ave., Cleveland 3, Ohio—X, XM

Weltronic Co., 19500 W. Eight Mile Rd., Detroit 19, Mich.—I, HD

Western Geophysical Co., 601 W. 5th St., Los Angeles 11, Calif.—GI

Westinghouse Electric Corp., 300 W. Baltimore St., Baltimore 3, Md.—I, HD

Westinghouse Electric Corp., East Pittsburgh, Pa.—D, HD, F, GL, I, ID, MF, XD, X, XM, XS

White Research, 899 Boylston St., Boston, Mass.—GI

Wholesale Radio Laboratories, 782 Commonwealth Ave., Boston, Mass.—X

World Wide Electronics, Inc., 72 E. 13th St., New York 3, N. Y.—D, HD, EC, EE, S, GL, I, MF, ML

York Electric & Machine Co., Carillotone Div., 30-34 N. Penn St., York, Pa.—D, GL

(14) Flexible Shaft Controls



- Control units (complete)CU
- Control headsCH
- FittingsF
- Flexible shaftsFS

Aeronautical Radio Mfg. Co., 155 First St., Mineola, L. I., N. Y.—CU, CH, F, FS

Arens Controls, Inc., 2253 S. Halsted St., Chicago 8, Ill.—CU

(15) Hand Tools



- Alignment toolsAT
- Chassis holdersCH
- DemagnetizersDM
- Drills, electricD
- Electric etchersEE
- ElectroplaterE
- Flux, fluidSF
- Flux, pasteSP
- GagesG
- Hand micrometersHM
- Hacksaw bladesHB
- Hammers, plasticH
- Hand drillsHD
- Hole cuttersHC
- Inspection lensesL
- Inspection mirrorsM
- Knob pullerKP
- PliersP
- PunchesPU
- Ratchet wrenchesRW
- Scales & tapesSA
- ScrewdriversSD
- Side cuttersSC
- Socket wrenchesSW
- SolderS
- Soldering ironsSI
- Soldering iron standsSS
- Soldering iron tipsSE
- Solder nutsST
- Staple driverSH
- Twist drillsT
- Tube pin straightenerTS
- Tube pullersTP
- Wire strippersWS
- VisesV

Aarons Radio Corp., 125 E. 46th St., New York 17, N. Y.—CH, HM, ST

Ackermann, Steffan & Co., 4532 Palmer St., Chicago, Ill.—HR

Acromark Co., 9-13 Morrell St., Elizabeth 4, N. J.—PU

Acro Tool & Die Works, 4554 Broadway, Chicago 40, Ill.—CH

Aeroil Products Co., 5701 Park Ave., West New York, N. J.—ST

Aerolite Electronic Hardware Corp., 24 Cliff St., Jersey City 6, N. J.—AT

Alpha Metals, Inc., 363 Hudson Ave., Brooklyn 1, N. Y.—S

American Beauty—American Electrical Heater Co.

American Electrical Heater Co., 6110 Cass Ave., Detroit 2, Mich.—"American Beauty"—SI, SS, SE

American Radio Hardware Co., 152-4 MacQuisten Pkwy., S. Mt. Vernon, N. Y.—"Arhco"—AT, SD

Barco Mfg. Co., 1801 Winnemac, Chicago 40, Ill.—F

Bell Radio & Television, 125 E. 46th St., New York 17, N. Y.—FS

Bendix Aviation Corp., Pacific Div., 11600 Sherman Way, North Hollywood, Calif.—CH

Bud Radio, Inc., 2118 E. 55th St., Cleveland 3, Ohio—FS

Chicago Metal Hoes Corp., Maywood, Ill.—F

Croname, Inc., 3701 N. Ravenswood Ave., Chicago 13, Ill.—CU, CH, F, FS

Foote Bros. Gear & Machine Corp., 5225 S. Western Blvd., Chicago 9, Ill.—F

Fuchs, Charles A., 13-15 Mollineux Place, Roosevelt, L. I., N. Y.—F

Gussack Machined Products Co., 10-20 45th Rd., Long Island City 1, N. Y.—CU, F

J. F. D. Mfg. Co., 4111 Ft Hamilton Parkway, Brooklyn 19, N. Y.—FS

Lord Mfg. Co., 1635 W. 12th St., Erie, Pa.—FS

National Co., Inc., 61 Sherman St., Malden 48, Mass.—CU, CH, F, FS

Piezoelectric Corp., 110 E. 42nd St., New York 17, N. Y.—CH

Shakespeare Products Co., 241 E. Kalamazoo Ave., Kalamazoo, Mich.—CH, F, FS

Stewart Mfg. Corp., F. W., 4311-13 Ravenswood Ave., Chicago 13, Ill.—CU, CH, F, FS

Stow Mfg. Co., Binghamton, N. Y.—CU, CH, F, FS

Walker-Turner Co., Inc., 639 South Avenue, Plainfield, N. J.—CU, CH, F, FS

Waterproof Electric Co., 72 E. Verdugo Ave., Burbank, Calif.—F

White Dental Mfg. Co., S. S. Industrial Div., 10 E. 40th St., New York, N. Y.—FS

American Solder & Flux Co., 2152 E. Norris St., Philadelphia 25, Pa.—SF, SP, S

Annis Co., R. B., 1101 N. Delaware St., Indianapolis 2, Ind.—DM, EE

Arhco—American Radio Hardware Co.

Austin Co., M. B., 108-116 S. Desplaines St., Chicago 6, Ill.—HB, SD

Baker Electronic Mfg. Co., 2816 Aldrich Ave. S., Minneapolis 8, Minn.—"Flash"—SF, SD, SI, SE

Baker Phillips Co., 1624 Chicago Ave. S., Minneapolis, Minn.—SI, SE

Bausch & Lomb Optical Co., Rochester 2, N. Y.—L

Belmont Smelting & Refining Works, 330 Belmont, Brooklyn 7, N. Y.—S

Billings & Spencer Co., 1 Laurel, Hartford 6, Conn.—"Billings"—AT, P, RW, SW, V

Black & Decker Mfg. Co., E. Pennsylvania Ave., Towson 4, Md.—D, HC, SD

Bristol Co., Waterbury 91, Conn.—SW

Chase Brass & Copper Co., 236 Grand St., Waterbury 91, Conn.—SP, HB, S

Burgess Battery Co., Handicraft Div., Vibro Tool Dept., 180 N. Wabash Ave., Chicago 1, Ill.—EE

Chicago Tool & Engineering Co., 8383 S. Chicago Ave., Chicago 17, Ill.—V

Clark Electric Co., James Jr., 600 Bergman St., Louisville 2, Ky.—D, SD

Clark Co., Robert H., 9330 Santa Monica Blvd., Beverly Hills, Calif.—HC

Cole Radio Works, 86 Westville Ave., Caldwell, N. J.—SI, SS

Despatch Oven Co., 619 S. E. Eighth St., Minneapolis 14, Minn.—ST

Detroit Power Screw Driver Co., 2801 W. Fort St., Detroit, Mich.—SD

Disston & Sons, Inc., Henry, Tacony, Philadelphia 85, Pa.—HB, SD

Division Lead Co., 836 W. Kinzie St., Chicago 22, Ill.—SP, SP, S, WS

Doehler-Jarvis Corp., Robertson St., Batavia, N. Y.—D, HD, SH

Drake Electric Works, Inc., 3654 Lincoln Ave., Chicago 13, Ill.—SI, SS, SE, ST

Dual Remote Control Co., 31776 Cowan Rd., Wayne, Mich.—SI

Eagle Electric Mfg. Co., Inc., 23-10 Bridge Plaza S., Long Island City 1, N. Y.—SI

Electric Soldering Iron Co., Inc., W. Elm St., Deep River, Conn.—"Esleo"—SI, SS, SE, ST

Electro Mag. Mfg. Co., 610 N. Rockford Ave., Rockford, Ill.—EE

Eraser Co., Inc., 231 W. Water St., Syracuse 2, N. Y.—WS

Esico—Electric Soldering Iron Co. Inc.

Etched Products Corp., 39-01 Queens Blvd., Long Island City 4, N. Y.—SA

Fairmount Tool & Forging Co., 10611 Quinley Ave., Cleveland, Ohio—P, SD, SW

Farrelloy Co., 1243-45 N. 26th St., Philadelphia 21, Pa.—SF, SP, S

Federal Screw Products Co., 22 W. Huron St., Chicago 10, Ill.—SW, SE

Flash—Baker Electronic Mfg. Co.

Forsberg Mfg. Co., 85 Walker St., Bridgeport, Conn.—HB, HD, SD

Fuchs, Charles A., 13-15 Mollineux Pl., Roosevelt, L. I., N. Y.—PU

Gardiner Mfg. Co., 2711 Union St., Oakland 7, Calif.—AT, HC, PU, RW, SD, SW, SI, SS, SE, SH

Gardiner Metal Co., 4820 S. Campbell Ave., Chicago 32, Ill.—S

GC—General Cement Mfg. Co.

General Cement Mfg. Co., 919 Taylor Ave., Rockford, Ill.—AT, CH, SP, KP, SW, TP, WS

General Electric Co., Specialty Div., 1001 Wolf St., Syracuse, N. Y.—SI

Glaser Lead Co., Inc., 31 Wyckoff Ave., Brooklyn 27, N. Y.—SF, SP, S, SI
 Goodall Electric Mfg. Co., Thrd & Main St., Ogallala, Neb.—DM, EE, SI, ST
 Greenlee Tool Co., 12th St. & Columbia Ave., Rockford, Ill.—HC, PU, SD
 Groves Corp., 42 N. Sprigg St., Cape Girardeau, Mo.—S
 Handy & Harmon, 82 Fulton St., New York 7, N. Y.—SP
 Hercules Electric & Mfg. Co., Inc., 2500 Atlantic Ave., Brooklyn 7, N. Y.—DM
 Hexacon Electric Co., 161 W. Clay Ave., Roselle Park, N. J.—SI, SS, SE
 ICA—Insuline Corp. of America
 Ideal Industries, Inc., 5194 Park Ave., Sycamore, Ill.—DM, SI, WS
 Industrial Screw & Supply Co., 717 W. Lake St., Chicago 6, Ill.—HB, S
 Insuline Corp. of America, 36-02 35th Ave., Long Island City 10, N. Y.—AT, HC, PU, SD, SW, SI, SS, SE
 Intex Co., 303 W. 42nd St., New York 18, N. Y.—D, EF, HM, HB, HD, T, V
 Jones—Motrola Corp., 432 Fairfield Ave., Stamford, Conn.—D
 Kellams Co., Saugatuck, Conn.—TP
 Kellough Switchboard & Supply Co., 6650 S. Cicero Ave., Chicago 38, Ill.—SF, SP, P, SD, S, SI, SS, SE, ST, WS
 Kelnor Mfg. Co., 703 Market St., San Francisco 4, Calif.—SI
 Kester Solder Co., 4201 Wrightwood Ave., Chicago 39, Ill.—SF, SP, S, SS
 Keystone Electronics Co., 50-52 Franklin St., New York 13, N. Y.—AT
 Kollath Mfg. Co., 4601 W. Addison St., Chicago, Ill.—SI, SS, SE, ST
 Kraeuter & Co., Inc., 563 18th Ave., Newark, N. J.—P, PU
 Larimore Sales Co., 311 Locust St., St. Louis 2, Mo.—L, M
 Lead-All Products Co., 24 E. 21st St., New York 10, N. Y.—WS
 Lectrohm Inc., 5125 W. 25th St., Cicero 50, Ill.—“Lectrohm”—ST
 Linick, Leslie L., 29 E. Madison St., Chicago, Ill.—E, SF, SD, S
 Link, Fred M., 125 W. 17th St., New York, N. Y.—TP
 Lufkin Rule Co., 1730 Hess Ave., Saginaw, Mich.—HM, SA
 Luna Electric Equipment Co., P. O. Box 132, Toledo 1, Ohio—DM, EE, SI
 Magnaflex Corp., 5900 Northwest Highway, Chicago 31, Ill.—DM
 Martindale Electric Co., Box 617, Edgewater Br., Cleveland 7, Ohio—EF
 Morse Twist Drill & Machine Co., 163 Pleasant St., New Bedford, Mass.—T
 Muter Co., 1255 S. Michigan Ave., Chicago 5, Ill.—TP
 New England Etching & Plating Co., 25 Spring St., Holyoke, Mass.—SA
 N. J. Jewelers Supply, 280 Plane St., Newark 2, N. J.—P
 New York Solder Co., 15 Crosby St., New York, N. Y.—S
 Park Metalware Co., Inc., Bank St., Orchard Park, N. Y.—AT, H, P, SD, SC, SW
 Parker-Kalon Corp., 200 Varick St., New York 14, N. Y.—PU, S
 Philco Corp., Tloga & C Sts., Philadelphia 34, Pa.—AT
 Phonograph Needle Mfg. Co., Inc., 42-48 Dudley St., Providence 5, R. I.—SD
 Pratt & Whitney, Div. of Niles-Bement-Pond Co., West Hartford, Conn.—O
 Pyramid Products Co., 2224 S. State St. Chicago, Ill.—WS
 Rajah Co., 53 Locust Ave., Bloomfield, N. J.—P
 Rapid Electroplating Process, Inc., 1414 S. Wabash Ave., Chicago 5, Ill.—E
 Richmond, Inc., 2810 E. 11th St., Los Angeles 23, Calif.—SD
 Ruby Chemical Co., 68-70 McDowell St., Columbus 8, Ohio—“Rubyfluid”—SF, SP, S
 Rubyfluid—Ruby Chemical Co.
 George Scherr Co., Inc., 200 Lafayette St., New York 12, N. Y.—L
 Schott Co., Walter L., 9306 Santa Monica Blvd., Beverly Hills, Calif.—“Walsco”—AT, SW, SH
 Simonds Machine Co., Inc., 246-48 Worcester St., Southbridge, Mass.—SC
 Skyway Precision Tool Co., 3217 Casitas Ave., Los Angeles 26, Calif.—RW
 Small Motors, Inc., 1322 Elston Ave., Chicago 22, Ill.—D
 Smith Mfg. Co., Nathan R., 105 Pasadena Ave., S. Pasadena, Calif.—DM
 Sound Equipment Corp., 3903 San Fernando Rd., Glendale 4, Calif.—SI, SS, SE, ST
 Special Chemicals Co., 30 Irving Pl., New York 3, N. Y.—S
 Special Products Co., 9115 Brookville Rd., Silver Spring, Md.—P
 Speedway Mfg. Corp., 1834 S. 52nd Ave., Cicero 50, Ill.—D
 Sperman Metal Specialties, 2199 E. 21st St., Brooklyn 29, N. Y.—DM
 Standard Molding Corp., 460 Bacon St., Dayton 1, Ohio—SD
 Standard Pressed Steel Co., Jenkintown, Pa.—SW
 Stanley Works, New Britain, Conn.—D, H, HD, HC, PU, SD, SI, SS, SE, T
 Star Expansion Products Co., 147 Cedar St., New York 6, N. Y.—TS

Sta-Warm Electric Co., 333 N. Chestnut St., Ravenna, Ohio—ST
 Stedman, Robert L., E. Main St., Oyster Bay, N. Y.—CH, TS
 Stevens Walden, Inc., 475 Shrewsbury St., Worcester 4, Mass.—AT, HC, P, PU, RW, SD, SW
 Stow Mfg. Co. Inc., Binghamton, N. Y.—D
 Superior Flux Co., 913 Public Square Bldg., Cleveland 13, Ohio—SF, SP
 Technical Radio Co., 275 9th St., San Francisco, Calif.—SI
 Trent Co., Harold E., 5005 Wilde St., Philadelphia 27, Pa.—ST
 Tuck Mfg. Co., 74 Ames St., Brockton 39, Mass.—SD
 Tungsten Contact Mfg. Co., 7311 Cottage Ave., N. Bergen, N. J.—C, M
 Tweezer-Weld Corp., 280 Plane St., Newark 2, N. J.—SI
 Ullman Products Co., 857-61 Fourth Ave., Brooklyn 32, N. Y.—DM, L, M
 Ungar Electrical Tools, Inc., 611 Ducommon St., Los Angeles, Calif.—SI
 U. S. Electrical Tool Co., 1050 Findlay St., Cincinnati 41, Ohio—D
 Utica Drop Forge & Tool Corp., 2415 Whitesboro St., Utica 4, N. Y.—RW, SC
 Vaco Products Co., 317 E. Ontario St., Chicago, Ill.—SD, SW
 Volynsky Mfg. Co., Inc., Boris M., 311 W. 66th St., New York 23, N. Y.—AT
 Vulcan Electric Co., Danvers 10, Mass.—SI
 Walsco—Walter L. Schott Co.
 Weaver Specialty Co., 6344 Aurella St., Pittsburgh 6, Pa.—SP
 Weller Mfg. Co., 516 Northampton St., Easton, Pa.—SI
 Westinghouse Elec. Corp., E. Pittsburgh, Pa.—SF, S, ST
 World Wide Electronics, Inc., 72 E. 13th St., New York 3, N. Y.—DM
 Wynn Mfg. Div., Hudson Supply Co., 401 N. 27th St., Richmond 23, Va.—AT, SE

Aero Electric Corp., 6916 Romaine St., Los Angeles 38, Calif.—CC, C, CF
 Aerolite Electronic Hardware Corp., 24 Cliff St., Jersey City 6, N. J.—CC, FH, GC, G, J, MB, P, STE, S, SS, SL, TE, T, FW
 Aircraft-Marine Products, Inc., 1523 N. 4th St., Harrisburg, Pa.—L, PS, TE, T, CT, TB
 Aircraft Screw Products Co., Inc., 47-23 35th St., Long Island City 1, N. Y.—STE, S
 Air-Shields, Inc., County Line Road, Hatboro, Pa.—CS, CM
 Alden Products Co., 117 N. Main St., Brockton 64, Mass.—C, FH, P, SR, ST, SKT
 Allegheny Ludlum Steel Corp., Brackenridge, Pa.—CS, TS
 Allmetal Screw Products Co., 33 Greene St., New York 13, N. Y.—NL, N, R, SS, S, WL
 All-Steel Equipment Co., 723 Griffith Ave., Aurora, Ill.—CC, C, CP
 All Weather Springs, 140 Cedar St., New York, N. Y.—SP
 Aluminum Goods Mfg. Co., 1512 Washington St., Manitowoc, Wis.—CS, TS
 Amalgamated Radio Television Corp., 476 Broadway, New York 13, N. Y.—J, P, T, SKT
 American Brass Co., 414 Meadow St., Waterbury 88, Conn.—C, SC, GC, G, SL, TE, TS, WB
 American Communications Corp., 306 Broadway, New York, N. Y.—BP
 American Electronics Co., 216 Centre St., New York 13, N. Y.—CC, C, SC, CM, CP, FH, GA, GC, H, J, MB, P, RR, SL, L, LI, PS, SP, TE, T, TC, SKT, WB, FW, WP
 American Materials Co., 150 Nassau St., New York 7, N. Y.—R
 American Nut & Bolt Fastener Co., 2029 Doerr St., Pittsburgh 12, Pa.—WB, WL
 American Phenolic Corp., 1830 S. 54th St., Cicero, Ill.—“Amphenol”—C, CF
 American Radio Hardware Co., 152-4 Macqueston Pkwy. S., Mt. Vernon, N. Y.—BP, CC, C, SC, CP, GC, G, J, N, MB, NL, P, RR, R, STE, S, SS, SL, L, SP, TE, T, TC, SKT, WB, WF, FW, WL, WP, WR
 American Screw Co., 21 Stevens St., Providence, R. I.—S, SS
 American Steel & Wire Co., Rockefeller Bldg., Cleveland 13, Ohio—SP
 Amphenol—American Phenolic Corp.
 Arens Controls, Inc., 2253 S. Halsted St., Chicago 8, Ill.—CC, G
 Arkay Diecutting Co., 73 James St., New York 2, N. Y.—GA
 Armstrong Cork Co., Lancaster, Pa.—GA
 Aro Equipment Corp., Enterprise & Trevitt, Bryan, Ohio—WR
 Arrow-Hart & Hegeman Elec. Co., 103 Hawthorn St., Hartford 6, Conn.—P, T
 Art Wire & Stamping Co., 227 High St., Newark 2, N. J.—SP
 Astatic Corp., Cor. Harbor & Jackson Sts., Conneaut, Ohio—CF
 Atlantic Screw Works, Inc., Hartford, Conn.—S
 Atlas Products Corp., 30 Rockefeller Plaza, New York 20, N. Y.—CC, C, P, SL, L, TE
 Austin Co., M. B., 108-116 S. Desplaines St., Chicago 6, Ill.—CC, C, NI
 Baer Co., N. S., 9-11 Montgomery St., Hillside, N. J.—GA, T, FW, WP
 Baker & Co., Inc., 113 Astor St., Newark 5, N. J.—CM
 Barker & Williamson, Upper Darby, Pa.—C, CF, CP, GC, J, N, P, SL, TC, SKT
 Barnes Co., Wallace, P. O. Box 1521, Bristol, Conn.—SP
 Bead Chain Mfg. Co., 110 Mt. Grove St., Bridgeport 5, Conn.—J, PS, TE
 Beaver Gear Works, Inc., 1025 Parmele St., Rockford, Ill.—GF
 Bendix Radio Div., of Bendix Aviation Corp., E. Joppa Rd., Baltimore 4, Md.—SM
 Birnbach Radio Co., Inc., 145 Hudson St., New York 13, N. Y.—CC, C, SC, CP, J, NL, N, P, S, SS, SL, PS, TE, T, TC, SKT, WB, WL
 Birtcher Corp., 5087 Huntington Dr., Los Angeles 32, Calif.—TC
 Boots Aircraft Nut Corp., New Canaan, Conn.—NI
 Bowser, Inc., Terrville, Conn.—S
 Brainin Co., C. S., 233 Spring St., New York 13, N. Y.—CM
 Bristol Co., Waterbury 91, Conn.—S, ST
 Brown Engineering Co., 4635 S. E. Hawthorne Blvd., Portland 15, Ore.—BP, CM, G
 Browne Electric Co., J., 3774 Surf Ave., Brooklyn 24, N. Y.—F, FH
 Buchmann Spark-Wheel Corp., 4-20 47th Ave., Long Island City 1, N. Y.—BP, C, CF, CM, CP, NL, N, P, STE, S, TE, WB
 Bud Radio, Inc., 2118 E. 55th St., Cleveland 3, Ohio—BP, GC, J, P, SL, L, TE, T, TS, SKT
 Bunnie & Co., H. H., 2141 Madison Ave., Toledo 1, Ohio—CC, C, CP, CM, GA, G, WR
 Burke Electric Co., 12th & Cranberry, Erie, Pa.—TE, T
 Burndy Engineering Co., Inc., 107 Bruckner Blvd., New York 54, N. Y.—L, LI, TE, T
 Bussmann Mfg. Co., University at Jefferson, St. Louis 7, Mo.—“Buss”—F, FH
 Callite Tungsten Corp., 540 39th St., Union City, N. J.—CM
 Cambridge Thermionic Corp., 445 Concord Ave., Cambridge 38, Mass.—SL, T
 Camloc Fastener Corp., 420 Lexington Ave., New York 17, N. Y.—NI
 Cannon Co., C. F., Springwater, N. Y.—CP

(116) Hardware—Connectors and Miscellaneous Parts



Binding posts	BP
Cable clamps	CC
Cable connectors	C
Clips, spring	SC
Coaxial cable fittings	CF
Coil shields	CS
Contact points	CM
Couplings	CP
Fasteners	FA
Fuses	F
Fuse holders	FH
Gaskets	GA
Gears	GE
Grid clips	GC
Grommets	G
Hinges, cabinet hdwe.	H
Jacks	J
Mounting brackets	MB
Nuts	N
Nuts, lock and self-locking	NL
Pilot light assemblies	PL
Plugs	P
Retaining rings	RR
Rivets	R
Safety terminals	STE
Screws	S
Self-tapping screws	ST
Set screws	SS
Shielding, rubber	SR
Shockproof mounts	SM
Soldering lugs	SL
Solderless lugs	L
Solderless links	LI
Solderless pins	PS
Springs	SP
Strain reliefs	ST
Terminals	TE
Terminals, hermetic	TH
Terminal strips	T
Tube shields	TS
Tube clamps	TC
Tube connectors	TB
Tube sockets	SKT
Washers, brass	WB
Washers, felt	WF
Washers, fibre	FW
Washers, lock	WL
Washers, plastic	WP
Washers, rubber	WR

Aarons Radio Corp., 125 E. 46th St., New York 17, N. Y.—J, SM
 A.B.C. Products, Inc., 2131 Stoner Ave., W. Los Angeles 25, Calif.—C, J, P
 Accurate Spring Mfg. Co., 3811 W. Lake St., Chicago 24, Ill.—SP
 Ace Mfg. Corp., Erie Ave. at K St., Philadelphia 24, Pa.—BP, SC, CS, J, MB, STE, TE, T, TS, WB, GF
 Adaptol Co., 260 Utica Ave., Brooklyn 13, N. Y.—TB

Cannon Electric Development Co., 3209 Humboldt St., Los Angeles 31, Calif.—CC, C, CF, TE, T
 Cardwell Mfg. Corp., Allen D., 81 Prospect St., Brooklyn 1, N. Y.—CP, MB
 Carter Radio Division, Precision Parts Co., 213 Institute Place, Chicago 10, Ill.—J, P
 Central Screw Co., 3501 Shields Ave., Chicago 9, Ill.—N, R, S, SS
 Chancellor Products Corp., 1475 Chardon Road, Cleveland, Ohio—S
 Chase Brass & Copper Co., 236 Grand St., Waterbury 91, Conn.—BP, C, SC, FH, G, N, R, S, WB
 Cherry Rivet Co., 231 Winston St., Los Angeles 13, Calif.—R
 Chicago Rivet & Machine Co., 9600 W. Jackson Blvd., Bellwood, Ill.—R
 Chicago Tool & Engineering Co., 8383 S. Chicago Ave., Chicago 17, Ill.—C
 Cinch Mfg. Corp., Div. United Carr Fastener Co., 2335 W. Van Buren St., Chicago, Ill.—GC, J, MB, SM, SL, L, TE, T, TS, TC, SKT
 Cincinnati Electric Products, Carthage at Hannaford, Newwood, Cincinnati 12, Ohio—T
 Cleveland Tungsten, Inc., 10200 Meech Ave., Cleveland 5, Ohio—CM
 Cline Electric Mfg. Co., 4550 W. Lexington Ave., Chicago, Ill.—T
 Columbia Nut & Bolt Co., Inc., Bridgeport, Conn.—N
 Columbia Wire & Supply Co., 4106 N. Pulaski Rd., Chicago 41, Ill.—P
 Commercial Enclosed Fuse Co. of N. J., 1317 Willow Ave., Hoboken, N. J.—F
 Communication Products, Inc., Route 36, Palmer Ave., Keansburg, N. J.—CF
 Conn. Ltd., C. G., 1101 E. Beardsley Ave., Elkhart, Ind.—NL
 Connecticut Telephone & Electric, Div. of Great American Industries, Inc., Meriden, Conn.—J, T
 Connector Div., International Resistance Co., 401 N. Broad St., Philadelphia, Pa.—C, CF, P
 Continental Screw Co., 459 Mt. Pleasant St., New Bedford, Mass.—BP, N, S, SS
 Cook Electric Co., 2700 Southport Ave., Chicago 14, Ill.—J, TE, T
 Corbin Screw Division, American Hardware Corp., High Myrtle & Grove Sts., New Britain, Conn.—N, S, SS, WB
 Cordis Ltd., Inc., 26 Camp St., Newark 5, N. J.—CC, C, CF, P, SR, ST
 Corning Glass Works, Corning, N. Y.—SKT
 Creative Plastics Corp., 963 Kent Ave., Brooklyn 5, N. Y.—G, T, WP
 Crowley & Co., Inc., Henry L., 1 Central Ave., West Orange, N. J.—CF, T, SKT
 Curtis Development & Mfg. Co., 3266 N. 33rd St., Milwaukee 10, Wis.—TE, T
 De Mornay-Budd, Inc., 475 Grand Concourse, New York 51, N. Y.—CF
 Diamond Instrument Co., North Avenue, Wakefield, Mass.—C, CF, CM
 Doehler-Jarvis Corp., Robertson St., Batavia, N. Y.—CC, C, II
 Duxflex—Harris Products Co.
 Dzus Fastener Co., Inc., John St., Babylon, N. Y.—NL
 Eagle Electric Mfg. Co., Inc., 23-10 Bridge Plaza S., Long Island City 1, N. Y.—F
 Eastern Specialty Co., 3617 N. 8th St., Philadelphia 40, Pa.—BP, C, SL, L, TE
 Eby Inc., Hugh H., 18 W. Chelton Ave., Philadelphia 41, Pa.—C, J, P, T, SKT
 Eitel-McCullough, Inc., San Bruno, Calif.—CP
 Elastic Stop Nut Corp. of America, 2330 Vauxhall Road, Union, N. J.—NL
 Electrical Industries, Inc., 42 Summer Ave., Newark 4, N. J.—TH
 Electrix Corp., 150 Middle St., Pawtucket, R. I.—P
 Electro-Marine Co., 274 Madison Ave., New York 16, N. Y.—CC, CF, GA, SL
 Electronic Mfg. Co., 339-347 W. 8th Ave., Dubuque, Iowa—TE, T, SKT
 Electronic Plumbing Corp., 311 Nepperhan Ave., Yonkers 2, N. Y.—CF
 Electronic Supply Co., 207 Main St., Worcester 8, Mass.—MB
 Englewood Electrical Supply Co., 5801 S. Halsted St., Chicago, Ill.—C
 Ericsson Screw Machine Products Co., Inc., 25 Lafayette St., Brooklyn 1, N. Y.—N, P, RR, R, S
 Everlock—Thompson Bremer & Co.
 Faber—Merle F., 35 Stillman St., San Francisco, Calif.—TB, GC
 Fansteel Metallurgical Corp., 2200 Sheridan Rd., North Chicago, Ill.—CM
 Federal Screw Products Co., 224 W. Huron St., Chicago 10, Ill.—CC, CM, FH, GC, G, NL, MB, N, R, S, SS, SM, SL, TE, T, WB, FW, WL, WR
 Federal Telephone & Radio Corp., 200 Mt. Pleasant Ave., Newark 4, N. J.—J, MB
 Felsenthal, G., & Sons, 4108 W. Grand, Chicago 51, Ill.—WP
 Felt Products Mfg. Co., 1504 W. Carroll Ave., Chicago 7, Ill.—GA, WF, FW, WR
 Fordham Mfg. Co., 2736 Creston Ave., New York 58, N. Y.—CM
 Franklin Mfg. Corp., A. W., 175 Varick St., New York 14, N. Y.—BP, SC, GC, G, MB, SL, ST, TE, T, TS, TC, SKT, WB, FW, WP
 Fuchs, Charles A., 13-15 Mollineux Pl., Roosevelt, L. I., N. Y.—BP, C, CP, NL, N
 Gardner Mfg. Co., 2711 Union St., Oakland 7, Calif.—CC, H, NL, N, WB, WF, FW, WL, WP, WR

Garrett, George K., Co., Inc., D & Tioga Sts., Philadelphia 34, Pa.—CC, RR, SP, WL
 Gear Specialties Co., 2635 W. Medill Ave., Chicago 47, Ill.—GE
 G-C—General Cement Mfg. Co.
 Gemloid Corp., 7910-30 Albion Ave., Elmhurst, L. I., N. Y.—WP
 General Cement Mfg. Co., 919 Taylor Ave., Rockford, Ill.—G-C—BP, CC, FH, GC, G, J, NL, MB, N, P, R, S, SS, SM, SL, L, SP, TE, SKT, WB, WF, FW, WL, WP, WR
 General Electric Co., 1285 Boston Ave., Bridgeport 2, Conn.—G-E—CC, C, F, FH, NL, L
 General Electric Co., Specialty Div., 1001 Wolf St., Syracuse, N. Y.—C, TC, SKT
 General Electronics, Inc., 101 Hazel St., Paterson, N. J. J, SKT
 General Electronics Mfg. Co., 2225 S. Hoover St., Los Angeles 7, Calif.—P
 General Laminated Products, Inc., 2857 S. Halsted St., Chicago 8, Ill.—SL, TE, T
 General Plate Div., Metals & Controls Corp., Attleboro, Mass.—CM
 General Radio Co., 275 Massachusetts Ave., Cambridge 39, Mass.—BP, C, CF, CM, J, P
 General Screw & Mfg. Co., 1228 W. Monroe St., Chicago 7, Ill.—S
 General Tire & Rubber Co., Garfield, Wabash, Ind.—SR, SM, WR
 Geophysical Instrument Co., 1820 N. Nash St., Arlington, Va.—C, CF
 Gibsily—Gibson Electric Co.
 Gibson Electric Co., 8350 Frankstown Ave., Pittsburgh 21, Pa.—Gibsily—CM
 Goat-Form-Fitting—Goat Metal Stampings, Inc.
 Goat Metal Stampings, Inc., 314 Dean St., Brooklyn 17, N. Y.—Goat-Form-Fitting—TS
 Gordon Specialties Co., 823 S. Wabash Ave., Chicago 5, Ill.—G
 Grammes, L. F. & Sons, Inc., 392 Union St., Allentown, Pa.—CC, SC, G, H, RR, STE, SL, TE, WB
 Graton & Knight Co., 356 Franklin St., Worcester 4, Mass.—WR
 Gray Mfg. Co., 16 Arbor St., Hartford, Conn.—GE
 Graybar Electric Co., Inc., 420 Lexington Ave., New York 17, N. Y.—CF, J
 Great Metal Mfg. Corp., 5-13 Wyckoff Ave., Brooklyn 6, N. Y.—MR
 Greenhut Insulation Co., 31 W. 21st St., New York, N. Y.—T, FW, WP
 Gregory Mfg. Co., 67 Franklin St., New Haven 11, Conn.—C, FH, SL, L
 Guided Radio Corp., 161 Sixth Ave., New York 13, N. Y.—T
 Gussack Machined Products Co., 10-20 45th Rd., Long Island City 1, N. Y.—BP, CC, C, CF, CP, NL, MR, N, P
 Harper Co., H. M., 2620 Fletcher St., Chicago 18, Ill.—N, R, S, WB
 Harris Products Co., 5105 Cowan Ave., Cleveland, Ohio—CP "Torflex," SM "Duxflex"
 Hartford Machine Screw Co., 476 Capitol Ave., Hartford 2, Conn.—BP, CP, NL, N, S, ST, WB, WL
 Harwood Co., Div. Los Angeles Corp., 540 N. LaBrea St., Los Angeles, Calif.—C
 Haskell Mfg. Co., William H., 24 Commerce St., Pawtucket, R. I.—N, S
 Hassall, John, Inc., Clay & Oakland Sts., Brooklyn 22, N. Y.—R, S, WB
 Heyman Mfg. Co., Michigan Ave., Kenilworth, N. J.—SL, ST, TE, WB, FW
 Hermasol Co., Riverside Dr., Elkhart, Ind.—TH
 High Tension Co., Inc., 36 N. Main St., Phillipsburg, N. J.—CC, C, SL, TE
 Hunter Pressed Steel Co., Lansdale, Pa.—SP
 Hubbell Harvey, Inc., State St., Bridgeport, Conn.—C, SKT
 Hy-Pro Tool Co., New Bedford, Mass.—N, S, SS
 ICA—Insuline Corp. of America
 Industrial Screw & Supply Co., 717 W. Lake St., Chicago 6, Ill.—BP, SC, FH, GA, G, NL, N, R, S, SS, SR, SL, L, LI, PS, SP, TE, WB, WF, FW, WL, WP, WR
 Industrial Synthetic Corp., 60 Woolsey St., Irvington 11, N. J.—Synflex—G, WP, WR
 Instrument Specialties Co., Inc., Little Falls, N. J.—SP
 Insuline Corp. of America, 36-02 35th Ave., Long Island City 10, N. Y.—ICA—BP, CC, C, SC, CS, CP, FH, GC, G, J, NL, MB, N, P, R, STE, S, SS, SL, L, PS, TE, T, TS, SKT, WB, FW, WL, WR
 Insurok—Richardson Co.
 International Merit Products Corp., 254 W. 54th St., New York 19, N. Y.—NL, R, S
 International Screw Co., 9444 Roselawn Ave., Detroit, Mich.—S
 Irvington Varnish & Insulator Co., 6 Argyle Terrace, Irvington 11, N. J.—WP
 J.F.D. Mfg. Co., 4111 Ft. Hamilton Parkway, Brooklyn 19, N. Y.—C, P, TS, TC
 Johns-Manville Sales Corp., 22 E. 40th St., New York 16, N. Y.—GA
 Johnson Co., E. F., Waseca, Minn.—"Johnson"—CS, CP, FH, GC, J, P, STE, SL, TE, T, TS, TC, SKT, C, PL
 Jones Co., Howard B., 2460 W. George St., Chicago 18, Ill.—C, FH, J, P
 Kellong Switchboard & Supply Co., 6650 S. Cicero Ave., Chicago 38, Ill.—BP, CC, C, SC, CM, J, NL, MB, N, P, SL, L, TE, T, WB, WF, FW, WL, WP
 Keystone Carbon Co., Inc., 1935 State St., St. Marys, Pa.—CM
 Keystone Electronics Co., 50 Franklin St., New York 13, N. Y.—J, TE, T, WP

Kings Electronics Co., 372 Classon Ave., Brooklyn 5, N. Y.—CF
 Kirkman Engineering Corp., 121 6th Ave., New York 13, N. Y.—F, FH
 Kleigl Bros. Universal Electric Stage Lighting Co., Inc., 321 W. 50th St., New York 19, N. Y.—C, L
 Kohata Mfg. Co., 4601 W. Addison St., Chicago, Ill.—BP, CC, C, SC, FH, MB, P, SL, WB, FW
 Kolton Electric Mfg. Co., 123 New Jersey Railroad Ave., Newark 5, N. J.—C, FH, SL, L, TE, T
 Krementz & Co., 49 Chestnut St., Newark 5, N. J.—TB
 Kriscner Metal Products Co., 631-637 Kent Ave., Brooklyn 11, N. Y.—BP, CC, C, SC, GC, H, WB
 Kukka Electric Mfg. Co., Inc., 30 South St., Mount Vernon, N. Y.—CC, GC, SL, T, TC
 Lamson & Sessions Co., 1971 W. 85th St., Cleveland, Ohio—S
 Lapp Insulator Co., Inc., 24 Craigie St., Le Roy, N. Y.—CF
 Lear, Inc., Plaqu, Ohio—GE
 Lee Spring Co., Inc., 30 Main St., Brooklyn, N. Y.—SP
 Lewis Engineering Co., 52 Rubber Ave., Naugatuck, Conn.—C, SL, TE
 Liffefuse, Inc., 4757 Ravenswood Ave., Chicago 40, Ill.—C, F, FH, TE
 Lord Mfg. Co., 1635 W. 12th St., Erie, Pa.—CP, SM, WR
 Manross, F. N. & Sons, Div. Associated Spring Corp., 76 South St., Bristol, Conn.—S
 Manufacturers Screw Products, 216 W. Hubbard St., Chicago, Ill.—G, N, R, S, SS, TE, WR, WL
 Martindale Electric Co., Box 617, Edgewater Branch, Cleveland 7, Ohio—FW
 Mayfair Molded Products Corp., 4440 N. Elston Ave., Chicago 30, Ill.—TE, T, SKT, WP
 McInerney Plastics Co., 25 Commerce Ave., S.W. Grand Rapids 2, Mich.—CS, GA, J, MB, RR, STE, T, FW, WP
 Meirath Supply & Gasket Co., Tioga St. & Aramingo Ave., Philadelphia, Pa.—GA
 Mendelsohn Speedgun Co., 457 Bloomfield Ave., Bloomfield, N. J.—C, CF, GA, J, N, P
 Metallite Arts Co., 243 Broadway, Cambridge 39, Mass.—TS
 Mica Products Mfg. Co., 69 Wooster St., New York 12, N. Y.—FW
 Micarta Fabricators, Inc., 5324 Ravenswood Ave., Chicago 40, Ill.—T, WP
 Milford Rivet & Machine Co., Eastern Div., Milford, Conn.—BP, C, G, J, R, S, SS
 Millen, James, Mfg. Co., Inc., 155 Exchange St., Malden 48, Mass.—BP, CS, CP, GC, NL, STE, TE, T, TS, TC, SKT
 Miller Co., J. W., 5917 S. Main St., Los Angeles 3, Calif.—"Miller"—T
 Mines Equipment Co., 4215 Clayton Ave., St. Louis 10, Mo.—C
 Molded Insulation Co., Aircraft Control Div., 335 E. Price St., Philadelphia 44, Pa.—BP, CC, C, CF, CP, J, NL, PL, MB, P, RR, TE, T, WR
 Monitor Controller Co., 51 S. Gay St., Baltimore 2, Md.—GC
 Monowatt Electric Corp., 66 Bissell St., Providence, R. I.—C
 Morse Co., Frank W., 301 Congress St., Boston 10, Mass.—CC, C, SC, PL
 Mossman, Donald P., Inc., 612 N. Michigan Ave., Chicago 11, Ill.—J
 Mueller Electric Co., 1583 E. 31st St., Cleveland 14, Ohio—"Universal"—SC
 Multi Electrical Mfg. Co., 4223 W. Lake St., Chicago, Ill.—SC, FH, SL
 National Co., Inc., 61 Sherman St., Malden 48, Mass.—BP, SC, CS, CM, CP, GC, J, NL, MR, P, STE, TS, SKT
 National Fabricated Products, 2650 W. Belden Ave., Chicago 47, Ill.—C, CF, J, TE, T, SKT
 National Gasket & Washer Mfg. Co., 122 E. 25th St., New York 10, N. Y.—GA, SR, WF, FW, WP, WR
 National Lock Co., 1902 Seventh St., Rockford, Ill.—H, N, S, SS
 National Lock Washer Co., 40 Hermon St., Newark, N. J.—WL, RR
 National Molding Co., 2141 W. Washington Blvd., Los Angeles 7, Calif.—GA, SM, WP, WR
 National Screw & Mfg. Co., 2440 E. 75th St., Cleveland 4, Ohio—NL, N, R, S, SS
 National Vulcanized Fibre Co., Maryland Ave. & Beech St., Wilmington 99, Del.—T, FW, WP
 New Britain Spring Co., 696 W. Main St., New Britain, Conn.—SP
 New England Screw Co., Emerald St., Keene, New Hampshire—S
 Ney, J. M. Co., 71 Elm St., Hartford 1, Conn.—CM
 Northam Warren Corp., Barry Pl., Stamford, Conn.—CC, C, P
 North Electric Mfg. Co., Box 417, Gallon, Ohio—J, T
 Oak Mfg. Co., 1260 Clybourn Ave., Chicago 10, Ill.—GE, CP
 Ocrum Corp., Auburn Rd., Seneca Falls, N. Y.—SM
 Olympic Tool & Mfg. Co., Inc., 39 Chambers St., New York 7, N. Y.—T, TS
 Palnut Co., 83 Corder St., Irvington 11, N. J.—FA, N, WL
 Parker-Kalon Corp., 200 Varick St., New York 14, N. Y.—N, S, SS, ST
 Pass & Seymour, Inc., Syracuse 9, N. Y.—P
 Patton-MacGuer Co., 17 Virginia Ave., Providence 5, R. I.—SL, L, TE
 Paul & Beekman, Div. Portable Products Corp., 1801 Courland St., Philadelphia 40, Pa.—CS, MR, TS, TC
 Pawtucket Screw Co., Pawtucket, R. I.—S
 Peck Spring Co., 20 Grove St., Plainville, Conn.—SC, G, SP

Peerless Laboratories, 467 Tenth Ave., New York 18, N. Y.—J, P
Penn Engineering & Mfg. Corp., Box 311, Doylestown, Pa.—NL
Penn Fibre & Specialty Co., 2024-2030 E. Westmoreland St., Philadelphia 34, Pa.—GA, G, T, WB, WF, FW, WL, WP, WR, GE
Penn-Union Electric Corp., 315 State St., Erie, Pa.—C, SC, CP, FH, GC, N, SL, T, WL
Pheoll Mfg. Co., 5700 Roosevelt Rd., Chicago 50, Ill.—NL, N, S, SS, WB
Phonograph Needle Mfg. Co., Inc., 42-46 Dudley St., Providence 5, R. I.—S
Piezo Mfg. Corp., 110 E. 42nd St., New York 17, N. Y.—CP
Pilot Industries, Inc., 202 E. 44th St., New York 17, N. Y.—BP, C, CF, CP, N, S, WB, FW
Plastic Accessories, Inc., 460 Broome St., New York 13, N. Y.—WP
Plax Corp., 133 Walnut St., Hartford 5, Conn.—WP
Plume & Atwood Mfg. Co., 470 Bank St., Waterbury 88, Conn.—FA, G, R
Porcelain Products, Inc., Findlay, Ohio—CC
Precision Radio Co., 210-220 N. Western Ave., Los Angeles 4, Calif.—I, T
Presto Electric Co., 4511 New York Ave., Union City, N. J.—J
Prestole Division, Detroit Harvester Co., 4500 Detroit Ave., Toledo 12, Ohio—CC, SC, FH, NL, MB, RR, SP
Printloid, Inc., 93 Mercer St., New York 12, N. Y.—WP
Progressive Mfg. Co., 52 Norwood St., Torrington, Conn.—N, R, S
Publix Metal Prod., Inc., 100 Sixth Ave., New York 13, N. Y.—SC, CS, TE
Pyle-National Co., 1334 N. Kostner Ave., Chicago 51, Ill.—C, P
Quadriga Mfg. Co., 213 W. Grand Ave., Chicago 10, Ill.—MB, TE, WB, FW
Quaker City Gear Works, 1910 N. Front St., Philadelphia, Pa.—GE
Radex Corp., 2006 Elston Ave., Chicago 14, Ill.—BP
Radio Frequency Laboratories, Inc., Boonton, N. J.—MB, N
Rajah Co., 53 Locust Ave., Bloomfield, N. J.—C
Rattan Mfg. Co., P. O. Box 1745, New Haven, Conn.—LI
Raymond Mfg. Co., Div. Associated Spring Corp., Corry, Pa.—SP
Reading Screw Co., Norristown, Pa.—S
Reeder, J. L., 3047 N. Downer Ave., Milwaukee 11, Wis.—ST
Reliable Spring & Wire Forms Co., 3167 Fulton Rd., Cleveland 9, Ohio—SC, SP
Remler Co., Ltd., 2101 Bryant St., San Francisco 10, Calif.—Remler—BP, C, P, TE, SKT
Richardson Co., Melrose Park, Ill.—Insurok—WP
Robinson Aviation, Inc., Teterboro Air Terminal, Teterboro, N. J.—SM
Rupp's Assembling & Mfg. Works, 2341 N. Seminary Ave., Chicago 14, Ill.—P, TE
Rusgreen Mfg. Co., 14262 Birwood Ave., Detroit 4, Mich.—C, SL, TE, T
Russell-Burdall & Ward Bolt & Nut Co., 100 Midland Ave., Port Chester, N. Y.—N, S
Russell & Stoll Co., 125 Barclay St., New York 7, N. Y.—J, P
St. Regis Paper Co., 230 Park Ave., New York 17, N. Y.—WP
Sandee Mfg. Co., 3945 N. Western Ave., Chicago 18, Ill.—TS
Saxenburg Potteries, Saxenburg, Pa.—CF
Schott, Walter L., Co., 9306 Santa Monica Blvd., Beverly Hills, Calif.—BP, CC, C, G, J, LN, NB, NL, P, RR, S, SS, SR, SM, SL, L, SP, ST, WB, WF, FW, WL, WP, WR
Scovill Mfg. Co., 89 Mill St., Waterbury 91 Conn.—G, P, RR, S, SS, TE, TS, WB
Sealor Corp., 45 Willard Ave., Providence 5, R. I.—CP
Selectar Mfg. Corp., 21-10 49th Ave., Long Island City 1, N. Y.—C, CF
Sexton Can Co., Inc., 31 Cross St., Everett 49, Mass.—CS, MR, TS
Shakeproof, Inc., 2501 N. Keeler Ave., Chicago 39, Ill.—SS, TE, WL, OE
Sherman Mfg. Co., H. B., 18 Barney St., Battle Creek, Mich.—C, SC, SL, L, TE
Shur-Antenna-Mount, Inc., 272 Sea Cliff Ave., Sea Cliff, N. Y.—MB
Shure Bros., 225 W. Huron St., Chicago 10, Ill.—C
Sickles, F. W. Co., 165 Front St., Chicopee, Mass.—CP
Silver Co., McMurdo, 1240 Main St., Hartford 3, Conn.—SKT
Simmons Fastener Corp., N. Broadway, Albany 1, N. Y.—FA, N
Skydne, Inc., River Rd., Port Jervis, N. Y.—SM
Sonotone Corp., Saw Mill River Rd., Elmsford, N. Y.—J
S. O. S. Cinema Supply Corp., 449 W. 42nd St., New York 18, N. Y.—SC
Southington Hardware Mfg. Co., Southington, Conn.—S
Spaulding Fibre Co., Inc., 310 Wheeler St., Tonawanda, N. Y.—GA, G, FW, WP
Sperman Metal Specialties, 2199 E. 21st St., Brooklyn 29, N. Y.—WB, FW, WP
Sperti, Inc., Beech & Kenilworth, Norwood Sta., Cincinnati 12, Ohio—TH
Stamford Metal Specialty Co., 428 Broadway, New York 13, N. Y.—CC
Standard Electric Time Co., 89 Logan St., Springfield 2, Mass.—SC, J, P, L

Standard Locknut & Lockwasher, Inc., 33-35 St. Clair St., Indianapolis 4, Ind.—NL, WL
Standard Molding Corp., 460 Bacon St., Dayton 1, Ohio—G, WF
Standard Pressed Steel Co., Jenkintown, Pa.—N, NL, S
Stanley Works, New Britain, Conn.—H
States Co., 19 New Park Ave., Hartford 6, Conn.—BP, CC, C, SC, P, PS, T, TE
Stephens Mfg. Co., 10416 National Blvd., Los Angeles 34, Calif.—SL
Sterling Bolt Co., 209 W. Jackson Blvd., Chicago 6, Ill.—N, R, S, SS, WB, WL
Stewart Stamping Co., 630 Central Park Ave., Yonkers 4, N. Y.—CC, C, SC, MB, SL, L, TE, WB
Stimpson, Edwin B., Co., Inc., 70 Franklin Ave., Brooklyn 5, N. Y.—R, TE, WB
Stover Lock Nut & Machinery Corp., 101 Park Ave., New York 17, N. Y.—NL
Stupakoff Ceramic & Mfg. Co., Latrobe, Pa.—TH
Sundt Engineering Co., 4763 Ravenswood Ave., Chicago, Ill.—TE
Superior Carbon Products, Inc., 9117 George Ave., Cleveland 5, Ohio—CM
Synflex—Industrial Synthetics Corp.
Taller & Cooper, 75 Front St., Brooklyn 1, N. Y.—CF
Taylor Fibre Co., Norristown, Pa.—T, FW, WP
Telegraph Apparatus Co., 412 S. Green St., Chicago, Ill.—C, J, P
Teleoptic Co., 1251 Mound Ave., Racine, Wis.—BP, FH, MB, WB, GE
Thomas & Betts Co., 30-36 Butler St., Elizabeth 1, N. J.—CC, C, CP, CP, NL, L, ST, TE, T, WL
Thompson Bremer & Co., 1640 W. Hubbard St., Chicago, Ill.—Everlock—WL
Thompson, George S. Corp., 5240 Huntington Drive, Los Angeles 32, Calif.—TC
Thwing Albert Instrument Co., Penn St. & Pulaski Ave., Philadelphia 44, Pa.—BP
Tinnerman Products, Inc., 2111 Fulton Rd., Cleveland 13, Ohio—CC, SC, NL, MB, N
Torflex—Harris Products Co.
Trico Fuse Mfg. Co., 2948 N. Fifth, Milwaukee 12, Wis.—F, FH
Triumph Mfg. Co., 913 W. Van Buren St., Chicago 7, Ill.—J
Tubular Rivet & Stud Co., Wollaston 70, Mass.—R, TE
Tyer Rubber Co., Andover, Mass.—GA, SR, SM
Ucinite Co., Div. United-Carr Fastener Corp., Newtonville, Mass.—GC, J, MB, SM, SL, L, TE, T, TS, TC, SKT
Union Aircraft Products Corp., 245 E. 23rd St., New York 10, N. Y.—CP
United Radio Mfg. Co., 191 Greenwich St., New York, N. Y.—WP
United Screw & Bolt Corp., 2513 W. Cullerton St., Chicago 8, Ill.—N, S, SS, WB
Universal—Mueller Electric Co.
U. S. Rubber Co., 1230 Sixth Ave., New York 20, N. Y.—C, CF, WR
Utah Radio Products Co., 812-20 N. Orleans St., Chicago 10, Ill.—J, P
Vitrosal Corp., 342 Crescent Ave., Wyoming, Cincinnati 15, Ohio—TH, T
Volynsky, Boris M., Mfg. Co., Inc., 311 W. 66th St., New York 23, N. Y.—C
Waldes Koh-I-Noor, Inc., 47-10 Austel Pl., Long Island City 1, N. Y.—RR
Waltham Screw Co., 77 Rumford Ave., Waltham, Mass.—BP, CC, CF, CM, NL, N, P, RR, R, S
Waterbury Companies, Inc., 835 S. Main St., Waterbury 90, Conn.—G, P, STE, SL, L, TE, T, SKT, WB, WP
Westinghouse Elec. Corp., East Pittsburgh, Pa.—CF, CM, SM, SL, T, SKT
Weymouth Instrument Co., 1440 Commercial St., East Weymouth 89, Mass.—CF
Whitaker Cable Corp., N. Kansas City Sta., Kansas City 16, Mo.—TE
Whitehead Stamping Co., 1661 W. Lafayette Blvd., Detroit 16, Mich.—WB, FW
Wickwire Spencer, Metallurgical Corp., 260 Sherman Ave., Newark 5, N. J.—SC, GC, RR, SP
Willson Plastics Division, Willson Magazine Camera Co., 6022 Media St., Philadelphia 31, Pa.—T, WP
Wilmington Fibre Specialty Co., P. O. Drawer 1028, Wilmington 99, Del.—FW
Winters & Crampton Corp., Grandville, Mich.—H
Wisconsin Screw Co., 21st & Clark Sts., Racine, Wis.—BP, CM, CP, NL, N, P, RR, STE, S
Wolverine Bolt Co., 9685 Grinnell, Detroit, Mich.—S
Wood, C. D., Electric Co., Inc., 826 Broadway, New York 3, N. Y.—C
Wrought Washer Mfg. Co., 2100 S. Bay St., Milwaukee 7, Wis.—WB, FW, WL
Wynn Mfg. Division, Hudson Supply Co., 401 N. 27th St., Richmond 23, Va.—J, P
Zierick Mfg. Corp., 385 Gerard Ave., New York 51, N. Y.—CC, SC, GC, SL, L, TE, WB

(171) Insulation & Insulators

(See also PAINTS, CEMENT & INSULATING COMPOUNDS)



Table listing various insulation materials and their abbreviations: Alundum grain (AG), Bonded mica (BM), Can liners (CL), Ceramic parts (C), Capacitor paper (CP), Coil insulation tape (ST), Glass tubing (GT), Glass bonded mica (GM), Fibre (F), Insulating beads (IB), Insulating coatings (IC), Fibre-glass (FG), Friction tape (FT), Metallized bushings (MB), Mica (M), Paper (P), Paper tubing (PT), Plastics (PL), Rubber insulation (RI), Silicone materials (SM), Stand-off insulators (SO), Tubing (varnished) (T), Varnished fabrics (VF).

Acme Folding Box Co., Inc., 141 E. 25th St., New York 10, N. Y.—CL
Acme Wire Co., New Haven 14, Conn.—FG, P, VF
Akron Porcelain Co., Cory Ave., Akron 14, Ohio—IC, SO
Aldine Paper Co., Inc., 535 Fifth Ave., New York 17, N. Y.—P
Alpha Wire Corp., 50 Howard St., New York 13, N. Y.—T
Aisimag—American Lava Corp.
American Hard Rubber Co., 11 Mercer St., New York 13, N. Y.—RI
American Lava Corp., Chattanooga 5, Tenn.—Aisimag—C, IB, SO, MB
American Phenolic Corp., 1830 S. 54th St., Cicero, Ill.—Amphenol—C, IB, PL
American Products Mfg. Co., Oleander & Dublin Sts., New Orleans 18, La.—PI
American Radio Hardware Co., 152-4 MacQuesten Parkway S., Mt. Vernon, N. Y.—C, SO
Amphenol—American Phenolic Corp.
Arens Controls, Inc., 2253 S. Halsted St., Chicago 8, Ill.—RI, T
Armité—Spaulding Fibre Co., Inc.
Armstrong Cork Co., Lancaster, Pa.—RI
Asheville Mica Co., Biltmore, N. C.—BM, GM, M
Atlas Products Corp., 30 Rockefeller Plaza, New York 20, N. Y.—FG, T, VF
Auburn Button Works, Inc., Auburn, N. Y.—PL
Ault & Wiborg Div. of Interchemical Corp., 350 Fifth Ave., New York 1, N. Y.—CL
Baer Co., N. S., 9-11 Montgomery St., Hillside, N. J.—F, PL
Bakelite Corp., 30 E. 42nd St., New York 17, N. Y.—Bakelite, Fenox, Vinylite, Vinyon, Vinylseal, Zerox—ST, IC, PL
B & C Insulation Products, Inc., 261 Fifth Ave., New York, N. Y.—PL, T, VF
Bend-A-Lite Plastics Div., 423 S. Honore St., Chicago 12, Ill.—PL
Bentley-Harris Mfg. Co., Conshohocken, Pa.—B-H—G, T, VF
Berger Electronics, 109-01 72nd Rd. Forest Hills, N. Y.—BM, IB, PL
B-H—Bentley-Harris Mfg. Co.
Birnback Radio Co., Inc., 145 Hudson St., New York 13, N. Y.—C, F, SO, T
Brand & Co., Wm., 278 Fourth Ave., New York 10, N. Y.—Turbo—BM, G, F, FG, M, P, T, VF
Brandywine Fibre Products Co., 14th & Walnut Sts., Wilmington, Del.—F
Brown Co., 500 Fifth Ave., New York 18, N. Y.—F
Burdny Engineering Co., Inc., 107 Bruckner Blvd., New York 54, N. Y.—PL
Carter Products Corp., 6921 Carnegie Ave., Cleveland 3, Ohio—PL
Celanese Plastics Corp., 180 Madison Ave., New York 16, N. Y.—ST, FT, PL
Central Paper Co., Inc., 2400 Lakeshore Drive, Muskegon, Mich.—P
Centralab Div. of Globe-Union Co., 900 E. Keefe Ave., Milwaukee 1, Wis.—C, IB, SO
Clifton Products, Inc., Blackbrook Road, Palmsville, Ohio—C
Colonial Kolonite Co., 2214 Armitage Ave., Chicago 47, Ill.—BM, F, FG, PL, T
Condenser Products Co., 1375 N. Branch St., Chicago 22, Ill.—SM
Continental-Diamond Fibre Co., Newark 50, Del.—Dilecto—BM, ST, F, FG, M, PL
Cook Ceramic Mfg. Co., 500 Prospect St., Trenton, N. J.—C, SO
Cords Ltd., Inc., 28 Camp St., Newark 5, N. J.—RI
Corning Glass Works, Corning, N. Y.—G, SO
Crotite—Henry L. Crowley & Co.

USE THE INDEX

To find the manufacturer of any product, look first in the Index. For example, "Counters, electronic 12-C", means that under Section 12, "Electronic Control Equipment", the letter "C" after a manufacturer's name indicates his ability to supply electronic counting devices.

Crowley & Co., Inc., Henry L., 1 Central Ave., West Orange, N. J.—C, IB, SO, MB
 Cutler-Hammer, Inc., 315 N. 12th St., Milwaukee 1, Wis.—PL
 Davies Molding Co., Harry, 1428 N. Wells St., Chicago 10, Ill.—PL
 Die molding Corp., Itasbach St., Canastota, N. Y.—PL
 Diecto—Continental-Diamond Fibre Co.
 Dobeckmun Co., 2301 Monroe Ave., Cleveland 13, Ohio—ST, F, P
 Dow Corning Corp., Midland, Mich.—ST, FG, RI, T
 Drakenfeld & Co., Inc., B. F., 45 Park Place, New York 7, N. Y.—C
 Durez Plastics & Chemicals, Inc., 1926 Walck Rd., North Tonawanda, N. Y.—Durez—PL
 Durite Plastics, 5000 Summerdale Ave., Philadelphia 24, Pa.—PL
 Eclipse Moulded Products Co., 5150 N. 32nd St., Milwaukee 9, Wis.—PL
 Edwards, Inc., T. J., 210 South St., Boston 5, Mass.—FG, PL
 Electrical Insulation Co., 12 Vestry St., New York 13, N. Y.—PL, T
 Electrical Reactance Corp., Franklinville, N. Y.—SO
 Electronic Mfg. Co., 339-347 W. Eighth Ave., Dubuque, Iowa—F
 Electronic Mechanics, Inc., 70 Clifton Blvd., Clifton, N. J.—GM
 Electro-Technical Products, Inc., 115 Center St., Nutley 10, N. J.—ST, FG, P, VF
 Empire—Mica Insulator Co.
 Endurette Corp. of America, 45 W. 45th St., New York 19, N. Y.—VF
 Erie Resistor Corp., 640 W. 12th St., Erie, Pa.—PL
 Federal Telephone & Radio Corp., 200 Mt. Pleasant Ave., Newark 4, N. J.—C
 Felsenthal & Sons, G., 4108 W. Grand, Chicago 51, Ill.—PL
 Felt Products Mfg. Co., 1504 W. Carroll Ave., Chicago 7, Ill.—F, VF
 Fenox—Bakelite Corp.
 Ford Radio & Mica Corp., 536 63rd St., Brooklyn 20, N. Y.—M
 Franklin Fibre-Lamitex Corp., Wilmington, Del.—F, PL
 Fredericks Co., George E., Bethayres, Pa.—G
 General Cement Mfg. Co., 919 Taylor Ave., Rockford, Ill.—G-C—ST, G, F, FG, FT, P, PL, RI, T, VF
 General Ceramics & Steatite Corp., Crows Mill Rd., Keasbey, N. J.—C, IB, SO
 General Electronics, Inc., 101 Hazel St., Paterson, N. J.—GM, SO
 General Laminated Products, Inc., 2857 S. Halsted St., Chicago 8, Ill.—PL
 Goodrich Chemical Co., B. F., Rose Bldg., Cleveland 15, Ohio—PL
 Greenhut Insulation Co., 31 W. 21st St., New York, N. Y.—F, PL
 Hartford Machine Screw Co., 476 Capital Ave., Hartford 2, Conn.—PL
 Hodgman Rubber Co., Framingham, Mass.—RI
 ICA—Insuline Corp. of America
 Imperial Molded Products Corp., 2925 W. Harrison St., Chicago 12, Ill.—PL
 Imperial Porcelain Works, N. Y. Ave. & Mulberry St., Trenton, N. J.—C
 Industrial Fabricators, Inc., 1890 Carter Rd., Cleveland 13, Ohio—F
 Industrial Molded Products Co., 2035 Charleston St., Chicago, Ill.—PL
 Industrial Screw & Supply Co., 717 W. Lake St., Chicago 6, Ill.—FT, PT, RI, T, VF, MB
 Industrial Synthetics Corp., 60 Woolsey St., Irvington 11, N. J.—Synflex—PL, RI
 Industrial Tape Corp., Highway No. 1, New Brunswick, N. J.—FT
 Insi-X Co., Inc., 857 Meeker Ave., Brooklyn 22, N. Y.—PL
 Insulating Fabricators of New England, Inc., 69 Grove St., Watertown, Mass.—F, PL
 Insulating Tube Co., Inc., 26 Cottage St., Poughkeepsie, N. Y.—PT, PL
 Insulation Manufacturers Corp., 565 W. Washington Blvd., Chicago 6, Ill.—BM, F, FG, FT, G, M, P, PT, RI, ST, T, VF
 Insulation Products Co., 504 N. Richland St., Pittsburgh 8, Pa.—PL
 Insuline Corp. of America, 36-02 35th Ave., Long Island City 10, N. Y.—ICA—F, IB, FG, T, VF
 Insurok—Richardson Co.
 International Products Corp., 2254 Greenmount Ave., Baltimore 18, Md.—BM, GM, PL
 Irvington Varnish & Insulator Co., 6 Argyle Terrace, Irvington 11, N. J.—Irr-O-Volt—CL, CP, ST, G, F, FG, P, PL, T, VF
 Irr-O-Volt—Irvington Varnish & Insulator Co.
 Isolantite, Inc., 343 Cortlandt St., Belleville 9, N. J.—C, IB, SO, MB
 Johns-Manville Sales Corp., 22 E. 40th St., New York 16, N. Y.—F, P
 Johnson Co., E. F., Waseca, Minn.—C, GM, SO
 Kellogg Switchboard & Supply Co., 6650 S. Cicero Ave., Chicago 38, Ill.—FT
 Kilburn Glass Co., Inc., J. R., 22 S. Worcester St., Chartley, Mass.—C, IB
 Kirchberger & Co., Inc., M., 1425 37th St., Brooklyn 18, N. Y.—C
 Knox Porcelain Corp., Knoxville, Tenn.—C, SO
 Kuhn & Jacob Molding & Tool Co., 1200 Southard St., Trenton, N. J.—PL
 Lamlicord—Mica Insulator Co.
 Lapp Insulator Co., Inc., 24 Craigie St., LeRoy, N. Y.—C, SO
 Lavite—D. M. Steward Mfg. Co.

Lenoxite Div., Lenox, Inc., 65 Prince St., Trenton 5, N. J.—C, IB, SO, MB
 Locke Insulator Corp., P. O. Box 57, Baltimore 3, Md.—C, SO
 Lord Mfg. Co., 1635 W. 12th St., Erie, Pa.—RI
 Macallen Co., Macallen St., Boston 27, Mass.—ST, GM, FG, M, T
 Maico Co., Inc., 21 N. Third St., Minneapolis 1, Minn.—PL
 Manning, John A., Paper Co., Troy, N. Y.—F, P
 Marblette Corp., 37-21 Thirtieth St., Long Island City Mayfair Moulded Products Corp., 4440 N. Elston Ave., Chicago 30, Ill.—PL
 Metson Refractories, E. Liverpool, Ohio—C
 Mica Insulator Co., 200 Varick St., New York 14, N. Y.—Micanite, "Empire," "Munsell," "Lamlicord"—BM, CP, ST, GM, F, FG, FT, M, PL, T, VF
 Mica Products Mfg. Co., 69 Wooster St., New York 12, N. Y.—BM, C, GM, F, FG, FT, M, P, PT, PL, T, VF
 Micanite—Mica Insulator Co.
 Micarta Fabricators, Inc., 5324 Ravenswood Ave., Chicago 40, Ill.—PL
 Milham—Union Electrical Porcelain Works, Inc.
 Millen Mfg. Co., Inc., James, 150 Exchange St., Malden 48, Mass.—C, SO
 Milprint, Inc., 431 W. Florida St., Milwaukee 1, Wis.—PL
 Minn. Mining & Mfg. Co., 900 Faquier Ave., St. Paul 6, Minn.—ST
 Mitchell Rand Insulation Co., 51 Murray St., New York 7, N. Y.—RM, ST, GM, F, FG, FT, M, P, PT, T, VF
 Mueller Electric Co., 1583 E. 31st St., Cleveland 14, Ohio—RI
 Munsell—Mica Insulator Co.
 Munsell & Co., Eugene, 200 Varick St., New York 14, N. Y.—BM, M
 Mycalex Corp. of America, 60 Clifton Blvd., Clifton, N. J.—C, GM, SO
 Mykroy, Inc., 1917 N. Springfield Ave., Chicago 47, Ill.—SO, BM
 National Ceramic Co., 400 Southard St., Trenton 2, N. J.—C, IB, SO
 National Company, Inc., 61 Sherman St., Malden 48, Mass.—N C—C, SO
 National Fabricated Products, 2650 W. Belden Ave., Chicago 47, Ill.—C
 National Molding Co., 2141 W. Washington Blvd., Los Angeles 7, Calif.—PL
 National Porcelain Co., 400 Southard St., Trenton, N. J.—C, IB, SO
 National Tile & Mfg. Co., 1200 E. 26th St., Anderson, Ind.—C, IB, SO
 National Varished Products Corp., 211 Randolph Ave., Woodbridge, N. J.—T, VF
 National Vulcanized Fibre Co., Maryland Ave. & Beech St., Wilmington 99, Del.—Phenolite—F, PL
 N-C—National Company, Inc.
 New England Mica Co., Waltham, Mass.—M
 Norton Co., 1 New Bond St., Worcester 6, Mass.—AG
 Norton Laboratories, Inc., 560 Mill St., Lockport, N. Y.—PL
 Ogush, Wm. B., Inc., 33 W. 60th St., New York 23, N. Y.—BM, IB
 Okonite Co., Passaic, N. J.—FT, RI
 Owens-Corning Fiberglass Corp., Nicholas Bldg., Toledo 1, Ohio—ST, G, GM, F, IB, FG, FT, PL, SO, T, VF
 Pacific Clay Products, SteaPACTite Div., 306 W. Ave. 26, Los Angeles 31, Calif.—SteaPACTite—C
 Paper Manufacturers Co., 5th & Willow Sts., Philadelphia 23, Pa.—P
 Parisian Novelty Co., 3510 S. Western Ave., Chicago 9, Ill.—PL
 Pass & Seymour, Inc., Syracuse 9, N. Y.—C
 Pemco Corp., 5601 Eastern Ave., Baltimore 24, Md.—C
 Penn Fibre & Specialty Co., 2024 to 2030 E. Westmoreland St., Philadelphia 34, Pa.—F, P, PL
 Phenolite—National Vulcanized Fibre Co.
 Philadelphia Mica Corp., 3451 N. 10th St., Philadelphia 10, Pa.—M
 Pierce Laboratory, Inc., Summit, N. J.—"Pierceway"—PL
 Plastic Accessories, Inc., 460 Broome St., New York 13, N. Y.—PL
 Plating Processes Corp., 109 Lyman St., Holyoke, Mass.—MB
 Plax Corporation, 133 Walnut St., Hartford 5, Conn.—PL
 Porcelain Products, Inc., Findlay, Ohio—C, SO
 Precision Paper Tube Co., 2035 W. Charleston St., Chicago 47, Ill.—CL, PT
 Premax Products, Div., Chisholm-Ryder Co., Inc. 4612 Highland Ave., Niagara Falls, N. Y.—SO
 Printloid, Inc., 93 Mercer St., New York 12, N. Y.—PL
 RCA Victor Division, Radio Corp. of America, Front & Cooper Sts., Camden, N. J.—C, IB, M
 Richardson Co., Melrose Park, Melrose Park, Ill.—"Insurok"—PL, RI
 Rogan Bros., 2001 S. Michigan Ave., Chicago, Ill.—PL
 Rogers Corp., Mill & Oakland Sts., Manchester, Conn.—CL, F, P, PL
 Rohm & Haas Co., Washington Sq., Philadelphia 5, Pa.—PL
 Ruberoid Co., 500 Fifth Ave., New York 17, N. Y.—ST, P
 St. Regis Paper Co., 230 Park Ave., New York 17, N. Y.—PL
 Sandee Mfg. Co., 3945 N. Western Ave., Chicago 18, Ill.—PL, T
 Santay Corp., 351 N. Crawford Ave., Chicago 24, Ill.—PL
 Saxenburg Potteries, Saxenburg, Pa.—C, IB, SO
 Schweitzer Paper Co., 405 Lexington Ave., New York 17, N. Y.—CP, P

Southern Mica Co., Fairview & Steel Sts., Johnson City, Tenn.—M
 Spaulding Fibre Co., Inc., 310 Wheeler St., Tonawanda, N. Y.—Armitite—F, PL, T, VF
 Special Chemicals Co., 1545 E. 16th St., Cleveland 14, Ohio—PL
 Sperti, Inc., Beech & Kenilworth, Norwood Sta., Cincinnati 12, Ohio—G, IB
 Sponge Rubber Products Co., Shelton, Conn.—RI
 Square D Co., 6060 Rivard St., Detroit, Mich.—P
 Standard Insulation Co., 75 Paterson Ave., East Rutherford, N. J.—P, VF
 Standard Molding Corp., 460 Bacon St., Dayton 1, Ohio—PL
 Star Porcelain Co., Mulrhead Ave., Trenton 9, N. J.—C, SO
 Steward Mfg. Co., D. M., E. 36th St., Chattanooga, Tenn.—Lavite—C
 StePACTite—Pacific Clay Co.
 Stupakoff Ceramic & Mfg. Co., Latrobe, Pa.—C, IB, SO
 Synflex—Industrial Synthetics Corp.
 Synthane Corp., Oaks, Pa.—"Synthane"—PL
 Tar Heel Mica Co., Plumtree, N. C.—BM, M
 Taylor Fibre Co., Norristown, Pa.—F, P, PT, PL, T
 Thomas & Sons Co., R., Lisbon, Ohio—C
 Tingstol Co., 1461 W. Grand Ave., Chicago 22, Ill.—FG, PL
 Traver Corp., 358-368 W. Ontario St., Chicago 10, Ill.—PL
 Turbo—Wm. Brand & Co.
 Tyer Rubber Co., Andover, Mass.—RI
 Union Elec. Porcelain Works, Inc., Vam St., Trenton 5, N. J.—"Milham"—C
 United Mineral & Chemical Co., 16 Hudson St., New York 13, N. Y.—M
 U. S. Rubber Co., 1230 Sixth Ave., New York 20, N. Y.—FT, RI
 Varflex Corp., N. Jay St., Rome, N. Y.—FG, PL, T, VF
 Vinylite—Bakelite Corp.
 Vinyon—Bakelite Corp.
 Vinylseal—Bakelite Corp.
 Washington Porcelain Co., Washington, N. J.—SO
 Waterbury Companies, Inc., 835 S. Main St., Waterbury 90, Conn.—IB, PL, MB
 Westinghouse Elec. Corp., East Pittsburgh, Pa.—BM, C, ST, GM, F, FG, FT, M, P, PL, SM, SO, VF, MB
 Wilmington Fibre Specialty Co., P. O. Drawer 1028, Wilmington 99, Del.—F, P, PL
 Wind Turbine Co., West Chester, Pa.—SO
 Wright & Sons Co., Wm. E., Industrial Textile Div., West Warren, Mass.—ST
 Zyrox—Bakelite Corp.

(18) Laboratory Equipment

(See also MEASURING INSTRUMENTS)



Calibrators	CA
Capacitor specialties	C
Decade boxes, capacity	DC
Decade boxes, inductance	DI
Decade boxes, resistance	RD
Electric wave filters	E
Electronic balances	EB
Electronic switches	ES
Equalizing filters	EF
Gas analyzers	GA
Geiger-Mueller counter	GM
Inductance specialties	L
Lenses	LE
Multivibrators	MV
Optical equipment	OE
Oscillographs, direct-writing	OD
Oscillographs, cathode ray	O
Power supplies, regulated	PR
Power supplies, unregulated	PU
Pulse generators	PG
Radio spectrum analyzers	RA
Resistance specialties	R
Salt-spray cabinets	SC
Signal generators, AF	SA
Signal generators, FM	SF
Signal generators, RF	SR
Spectrographic equipment	S
Square wave generators	SW
Stroboscopes	ST
Surface analyzers	SM
Temperature test cabinets	TT
Tuning fork oscillators	TO
Ultrasonic oscillators	SO
Video pattern generators	VP
Video-range oscillators	VO

Advance Research Corp., 214 W. 42nd St., New York, N. Y.—E, EF, RA
 Aerovox Corp., 740 Belleville Ave., New Bedford, Mass.—C, DC, R
 AIC—Atomic Instruments Co.

- Air Communications, Inc., 2233 Grand Ave., Kansas City, Mo.—SA
- Airadio, Inc., Melrose Ave. & Barry Place, Stamford, Conn.—SA
- Aircraft-Marine Products, Inc., 1523 N. 4th St., Harrisburg, Pa.—E
- Airdesign, Inc., 241 Fairfield Ave., Upper Darby, Pa.—E
- Air-Track Mfg. Corp., A Div. of Aerodynamic Research Corp., 5009 Calvert Road, College Park, Md.—PR, PU, SW
- Airtrons Development Corp., 131-133 E. Third St., Dayton 2, Ohio—SR
- Alden Products Co., 117 N. Main St., Brockton 64, Mass.—MV, TO
- All American Tool & Mfg. Co., 1014 W. Fullerton Ave., Chicago 14, Ill.—MV
- American Instrument Co., 8030-8050 Georgia Ave., Silver Spring, Md.—DC, RD, TT, SC, TO
- American Lens Co., Inc., 45 Lispenard St., New York 13, N. Y.—OE
- American Optical Co., Scientific Instrument Div., 19 Boat St., Buffalo 11, N. Y.—LE, OE
- American Radio Co., 611 E. Garfield Ave., Glendale 5, Calif.—SW, SA
- American Television Laboratories, Inc., 433 E. Erie St., Chicago 11, Ill.—O
- American Time Products, Inc., 580 Fifth Ave., New York 19, N. Y.—MV, SA, TO
- Amplifier Co. of America, 398 Broadway, New York 13, N. Y.—E, EF, SO
- Annis, R. B. Co., 1101 N. Delaware St., Indianapolis 2, Ind.—O
- Applied Research Laboratories, 4336 San Fernando Rd., Glendale 4, Calif.—S
- Associated Research, Inc., 231 S. Green St., Chicago 7, Ill.—Vibrotest—R, ST
- Atomic Instrument Co., 160 Charles St., Boston, Mass.—MI, GM
- Audio Development Co., 2833 13th Ave. S., Minneapolis 7, Minn.—EF
- Audio-Tone Oscillator Co., 237 John St., Bridgeport 3, Conn.—EF, MV, SW, SA
- Baker & Co., Inc., 113 Astor St., Newark 5, N. J.—GA
- Baker Instrument Co., 310 Main St., Orange, N. J.—OE, TT, S
- Ballantine Laboratories, Inc., Boonton, N. J.—R
- Barker & Williamson, Upper Darby, Pa.—EB, ES, EF, GA, L, MV, SW, SA, SR, SO
- Bausch & Lomb Optical Co., Rochester 2, N. Y.—LE, OE, S
- Belmont Radio Corp., 5921 W. Dickens Ave., Chicago 39, Ill.—O, SR
- Bend-A-Lite Plastics Division, 423 S. Honore St., Chicago 12, Ill.—GA
- Bludworth Marine, Div. National-Simplex-Bludworth, Inc., 100 Gold St., New York 7, N. Y.—SO
- Boonton Radio Corp., 518 Main St., Boonton, N. J.—"Q-Meter"—"QX Checker"—SF, VO
- Boulin Instrument Corp., 65 Madison Ave., New York 16, N. Y.—ST
- Bowser, Inc., Terryville, Conn.—TT
- Browning Laboratories, Inc., 750 Main St., Winchester, Mass.—CA
- Brush Development Co., 3405 Perkins Ave., Cleveland 14, Ohio—OD, SM
- Burke & James, Inc., 321 S. Wabash Ave., Chicago 4, Ill.—OE
- Cambridge Instrument Co., Inc., 3005 Grand Central Terminal, New York 17, N. Y.—RD, GA, OD, TO
- Carborundum Co., Global Div., Buffalo Ave., Niagara Falls, N. Y.—R
- Cardwell, Allen D. Mfg. Corp., 81 Prospect St., Brooklyn 1, N. Y.—C
- Carrier Corp., S. Geddes St., Syracuse, N. Y.—TT
- Centralab, Division Globe-Union, Inc., 900 E. Keefe Ave., Milwaukee 1, Wis.—C
- Central Scientific Co., 1700 Irving Park Rd., Chicago 13, Ill.—GA
- Cinema Engineering Co., 1510 W. Verdugo Ave., Burbank, Calif.—RD
- ClaroStat Mfg. Corp., 130 Clinton St., Brooklyn 2, N. Y.—RD
- Clough-Brengle Co., 6014 Broadway, Chicago 40, Ill.—O, SA, SR
- Collins Radio Co., Cedar Rapids, Iowa, EF, MV
- Commercial Research Laboratories, Inc., 20 Bartlett Ave., Detroit 3, Mich.—O
- Communication Equipment & Engineering Co., 5646 W. Race St., Chicago 44, Ill.—E, L
- Communication Measurements Laboratory, 120 Greenwich St., New York 6, N. Y.—PR, ST
- Communication Parts, 1101 N. Paulina St., Chicago 22, Ill.—RD, EF, L
- Communications Equipment Corp., 134 W. Colorado St., Pasadena 1, Calif.—PU
- Conn. C. G., Ltd., 1101 E. Beardsley Ave., Elkhart, Ind.—ST
- Consolidated Engineering Corp., Pasadena 1, Calif.—S
- Cordox Western, Inc., 151 North Ave., Los Angeles 31, Calif.—GA
- Cornell-Dubilier Electric Corp., South Plainfield, N. J.—C, DC
- Corning Glass Works, Corning, N. Y.—C
- Cristal Research Products, Dumont, N. J.—MV, SR, SO
- Cutter-Hammer, Inc., 315 N. 12th St., Milwaukee 1, Wis.—ES
- Cyclotron Specialties Co., Moraga, Calif.—GM
- Daven Co., 191 Central Ave., Newark 4, N. J.—RD
- Dayton Acme Co., 930 York St., Cincinnati 14, Ohio—GA, OE, R
- Deepfreeze Div., Motor Products Corp., 2301 Daris St., North Chicago, Ill.—TT
- DeMornay-Budd, Inc., 475 Grand Concourse, New York 51, N. Y.—RA, SW, SR
- Determann Omnite Mfg. Co.
- Deutschmann, Tohe, Corp., Canton, Mass.—C, E, L
- Dieterl, Harry W., Co., 9330 Roselawn Ave., Detroit 4, Mich.—S
- Distillation Products, Inc., 755 Ridge Road W., Rochester 13, N. Y.—GA, OE
- Drake, R. L., Co., 11 Longworth St., Dayton 2, Ohio—E, EF, GA, L, MV, R, SO
- Dumont, Allen B., Laboratories, Inc., 2 Main Ave., Passaic, N. J.—ES, O
- Eastern Amplifier Corp., 794 E. 140th St., New York 54, N. Y.—DC, RD, E, ES, O, SW, SA
- Eastern Electronics Corp., 41 Chestnut St., New Haven, Conn.—RD, ES, R, SA, SR, L
- Eastern Specialty Co., 3617 N. 8th St., Philadelphia 40, Pa.—I
- Eastman Kodak Co., Rochester 4, N. Y.—OE
- Electric Heat Control Co., 9123 Inman Ave., Cleveland 5, Ohio—GA
- Electrical Reactance Corp., Franklinville, N. Y.—C
- Electro-Medical Laboratory, Inc., Holliston, Mass.—OD
- Electro-Tech Equipment Co., 117 Lafayette St., New York 13, N. Y.—RD, O, R
- Electronic Engineering Co., 3223 W. Armitage Ave., Chicago 47, Ill.—L
- Electronic Engr. Service & Labs., 114-38 Farmers Blvd., St. Albans 12, N. Y.—ES, EF, MV, O, R, SW, SA, SR
- Electronic Engineers, 611 E. Garfield Ave., Glendale 5, Calif.—E, ES, EF, MV, S, ST
- Electronic Measurements Co., Red Bank, N. J.—SR, SA, PR
- Electronic Research Corp., 2655 W. 19th St., Chicago 8, Ill.—ES, O, S, SW, SA, SR
- Electronic Transformer Co., 207 W. 25th St., New York, N. Y.—L
- Electronic Tube Corp., 1200 E. Mermaid Lane, Chestnut Hill, Philadelphia 18, Pa.—O, PR, S, SO
- Engelhard, Charles, Inc., 233 N. J. R. R. Ave., Newark 5, N. J.—GA
- Engineering Laboratories, Inc., 610-624 E. 4th St., Tulsa 3, Okla.—OD, S
- Espey Mfg. Corp., 528 E. 72nd St., New York 21, N. Y.—O, W
- Farrand Optical Co., Inc., Bronx Blvd. & E. 238th St., New York 66, N. Y.—OE, LE
- Federal Mfg. & Engineering Corp., 199-217 Steuben St., Brooklyn 5, N. Y.—SR, OE
- Federal Telephone & Radio Corp., 200 Mt. Pleasant Ave., Newark 4, N. J.—E, ES, L, R
- Ferranti Electric, Inc., 30 Rockefeller Plaza, New York 20, N. Y.—E, EF, L
- Ferris Instrument Co., 110 Cornelia St., Boonton, N. J.—CA, SR
- Film Crafts Engineering Co., 36 W. 25th St., New York 10, N. Y.—LE, OE, ST
- Fischer-Smith, Inc., 162 State St., West Englewood, N. J.—ER, GA
- Fisher Research Laboratory, 1961 University Ave., Palo Alto, Calif.—EB
- Fisher Scientific Co., 711 Forbes St., Pittsburgh, Pa.—GA, OF
- Fish-Schurman Corp., 230 E. 45th St., New York 17, N. Y.—LE, OE
- Flashtron—Thordarson Electric Mfg. Co.
- Freed Transformer Co., 72 Spring St., New York 12, N. Y.—E, EF
- Gaertner Scientific Corp., 1201 Wrightwood Ave., Chicago 14, Ill.—LE, OE, S
- Gamma Instrument Co., Inc., 95 Madison Ave., New York 16, N. Y.—OE
- Garner Electronics Corp., 1100 W. Washington Blvd., Chicago 7, Ill.—MV, SR
- Gates, George W. & Co., Inc., Lucille Ave. & Hempstead Tpk., Franklin Square, L. I., N. Y.—OE
- Gem Radio & Television Co., 303 W. 42nd St., New York 18, N. Y.—ES, O, SW, SA, SR
- General Communication Co., 530 Commonwealth Ave., Boston 15, Mass.—SR
- General Control Co., 1200 Soldiers Field Rd., Boston 34, Mass.—ES
- General Electric Co., Specialty Div., 1001 Wolf St., Syracuse, N. Y.—C, ES, SW, SA, SR
- General Radio Co., 275 Massachusetts Ave., Cambridge 39, Mass.—C, DC, RD, E, GM, L, MV, O, R, SA, SR, ST, SO, TO
- Geophysical Instrument Co., 1820 N. Nash St., Arlington, Va.—GM, LE, MV, OE, SW
- G & G Precision Works, Inc., 5-33 48th Ave., Long Island City 1, N. Y.—OE
- Goodall Electric Mfg. Co., Third & Main Sts., Ogallala, Neb.—C, MV
- Gussack Machine Products Co., 10-20 45th Rd., Long Island City 1, N. Y.—OF, SO
- Gyra Balance Corp., 119 E. 36th St., New York 16, N. Y.—ER
- Hallcrafters Co., 2611 S. Indiana Ave., Chicago 16, Ill.—MV
- Hammarlund Mfg. Co., Inc., 460 W. 34th St., New York 1, N. Y.—C
- Hardwick, Hindle, Inc., 40 Hermon St., Newark 5, N. J.—R
- Harvey-Wells Electronics, North St., Southbridge, Mass.—DC, RD, L
- Hathaway Instrument Co., 1315 S. Clarkson St., Denver, Col.—OD, TO
- Heiland Research Corp., 130 E. Fifth Ave., Denver 9, Col.—GA, OD, O
- Helipot Corp., 1015 Mission St., So. Pasadena, Calif.—S
- Herbach & Rademan Co., Mfg. Division, 517 Ludlow, Philadelphia 6, Pa.—RD, ES, GM, L, MV, R, SW, SA, SR, TO
- Hercules Electric & Mfg. Co., Inc., 2500 Atlantic Ave., Brooklyn 7, N. Y.—E, ES, L
- Herron Optical Co., 705 W. Jefferson Blvd., Los Angeles 7, Calif.—OE
- Hewlett-Packard Co., 395 Page Mill Rd., Palo Alto, Calif.—ES, L, MV, RA, SW, SA, SR, SO, VO
- Hickok Electrical Instrument Co., 10514 Dupont, Cleveland 8, Ohio—O, SA, SL
- Hollywood Transformer Co., 11034 Blix St., N. Hollywood, Calif.—E, EF, L
- Hudson American Corp., 25 W. 43rd St., New York 18, N. Y.—EF, L, MV, SO
- Industrial Filter & Pump Mfg. Co., 1621-25 W. Carroll Ave., Chicago 12, Ill.—SC
- Industrial Instruments, Inc., 17 Pollock Ave., Jersey City, N. J.—C, DC, RD, L, R
- Instrument Glass & Mirror Co., 383 Pearl St., Brooklyn 1, N. Y.—LE
- Instrument Optics Co., 1872 Genesee St., Buffalo 11, N. Y.—OE
- Intex Co., 303 W. 42nd St., New York 18, N. Y.—C
- Islip Radio Mfg. Corp., Islip, N. Y.—EB, MV
- Jackson Electrical Instrument Co., 18 S. Patterson Blvd., Dayton, Ohio—SR, O, SA
- Jefferson, Ray, Inc., 40 E. Merrick Rd., Freeport, L. I., N. Y.—MV
- Jensen Radio Mfg. Co., 6601 S. Laramie Ave., Chicago 38, Ill.—EF
- Jerome Engineering Co., Massapequa, L. I., N. Y.—OE
- J.F.D. Mfg. Co., 4111 Ft. Hamilton Parkway, Brooklyn 19, N. Y.—ST
- Kenyon Transformer Co., Inc., 840 Barry St., New York 59, N. Y.—E, EF
- Keystone Carbon Co., Inc., 1935 State St., St. Marys, Pa.—R
- Kilburn, J. R., Glass Co., Inc., 22 S. Worcester St., Chartley, Mass.—LE
- Kirkland, H. R. Co., 8-10 King St., Morristown, N. J.—LE
- Knights, James Co., 131 S. Wells St., Sandwich, Ill.—OE
- Kold-Hold Mfg. Co., 424 N. Grand Ave., Lansing 4, Mich.—TT
- Lane-Wells Co., 5610 S. Soto St., Los Angeles 11, Calif.—O
- Larrimore Sales Co., 311 Locust St., St. Louis 2, Mo.—OE
- Lavoie Laboratories, Matawan-Freehold Rd., Morganville, N. J.—SR
- Lawton Products Co., Inc., 624 Madison Ave., New York 22, N. Y.—L, MV, SW, SR
- Leeds & Northrup Co., 4970 Stenton Ave., Philadelphia 44, Pa.—DC, RD, GA, S, L
- Leitz, E., Inc., 730 Fifth Ave., New York 19, N. Y.—LE, OE
- Lewis Engineering Co., 52 Rubber Ave., Naugatuck, Conn.—DC, RD, ES
- Lyman Electronic Corp., 12 Cass St., Springfield, Mass.—ES, MV
- Maberg Optical, Inc., 235 E. 45th St., New York 17, N. Y.—OE
- Maguire Industries, Inc., 1437 Railroad Ave., Bridgeport, Conn.—C, E, EF, ES, O, R, SW, BO, PG, SA
- Maguire Industries, Inc., Electronics Div., 342 W. Putnam Ave., Greenwich, Conn.—SR
- Measurements Corp., 116 Monroe St., Boonton, N. J.—CA, PG, SF, SR, SW, VP
- Megard Corp., 1601 S. Burlington Ave., Los Angeles 6, Calif.—EF
- Millen, James Mfg. Co., Inc., 150 Exchange St., Malden 48, Mass.—MV, O, RA
- Miller, J. W. Co., 5917 S. Main St., Los Angeles 3, Calif.—L
- Miller, William Corp., 362 Colorado St., Pasadena 2, Calif.—OE, OD
- Miller Electro-Research Labs., 3460 S. 16th St., Milwaukee 7, Wis.—RD
- Mogey, William & Sons, Inc., Interhaven Ave., Plainfield, N. J.—LE, OE
- Monarch Mfg. Co., 2014 N. Major Ave., Chicago 39, Ill.—"Monarch"—MV, SR
- Monitor Piezo Products Co., 815 Fremont Ave., So. Pasadena, Calif.—MV, SR
- Moulic Specialties Co., 1005-1007 W. Washington St., Bloomington, Ill.—O
- National Co., Inc., 61 Sherman St., Malden 48, Mass.—O
- New York Transformer Co., 62 William St., New York 3, N. Y.—CA, DI, L
- Nilsson Electrical Laboratory, Inc., 103 Lafayette St., New York 13, N. Y.—R
- North American Philips Co., Inc., 100 E. 42nd St., New York 17, N. Y.—GM, S
- Northern Communications Mfg. Co., 210 E. 40th St., New York 16, N. Y.—E, EF
- Northern Laboratories, Ltd., 3-01 27th Ave., Long Island City 2, N. Y.—TT
- Nurnberg Thermometer Co., Inc., 112 Broadway, Cambridge 42, Mass.—TT
- Offner Electronics, Inc., 5320 N. Kedzie Ave., Chicago 25, Ill.—OD
- Ohmite Mfg. Co., 4835 W. Flournoy St., Chicago 44, Ill.—"Determohm"—RD, R
- Pacific Electronics, Sprague at Jefferson, Spokane, Wash.—MV
- Panoramic Radio Corp., 242-250 W. 55th St., New York 19, N. Y.—RA
- Parker Engineering Products Co., 16 W. 22nd St., New York, N. Y.—OE, R
- Peerless Electrical Products Co., 6920-7004 McKinley Ave., Los Angeles 1, Calif.—EF
- Perkin-Elmer Corp., 535 Hope St., Glenbrook, Conn.—LE, OE, S
- Philco Corp., Tioga & C Sts., Philadelphia 34, Pa.—O

Physicists Research Co., 343 S. Main St., Ann Arbor, Mich.—SM
 Pittsburgh Equitable Meter Co., 400 N. Lexington Ave., Pittsburgh 8, Pa.—GA
 Plating Processes Corp., 109 Lyman St., Holyoke, Mass.—ES
 Polytron Corp., 401 Broadway, New York 13, N. Y.—O, RA, SW, SA, SR
 Potter Instrument Co., 136-56 Roosevelt Ave., Flushing, L. I., N. Y.—MV
 Precision Apparatus Co., 92-27 Horace Harding Blvd., Elmhurst, L. I., N. Y.—SR
 Precision Electronics Co., 815 Washington St., New-tamille 60, Mass.—SR
 Precision Scientific Co., 1750 N. Springfield Ave., Chicago 47, Ill.—GA, SC
 Process & Instruments, 60 Greenpoint Ave., Brooklyn 22, N. Y.—GA
 Pyrometer Instrument Co., 103 Lafayette St., New York, N. Y.—OB
 Q Meter—Boonton Radio Corp.
 QX Checker—Boonton Radio Corp.
 Radio Frequency Laboratories, Inc., Boonton, N. J.—SO
 Radio Specialty Mfg. Co., 403 N.W. 9th St., Portland 9, Ore.—MV, SR
 Radio Television Institute, Inc., 480 Lexington Ave., New York 17, N. Y.—PR
 Rahm Instruments, Inc., 12 W. Broadway, New York 7, N. Y.—OD
 Raytheon Mfg. Co., 55 Chapel St., Newton 58, Mass.—SR
 Raytron, Inc., 407 N. Jackson St., Jackson, Mich.—SR
 RCA Victor Division, Radio Corp. of America, Front & Cooper Sts., Camden, N. J.—O, SW, SA, SR
 Reeves Sound Laboratories, Div. Reeves-Ely Laboratories, Inc., 62 W. 14th St., New York, N. Y.—SO
 Reiner Electronics Co., Inc., 152 W. 25th St., New York 1, N. Y.—SW
 Revco, Inc., Refrigeration Div., Deerfield, Mich.—TT
 Richardson-Allen Corp., 15 W. 20th St., New York 11, N. Y.—L
 Rieber, Frank, Inc., 11916 W. Pico Blvd., Los Angeles 34, Calif.—E, EF, O, SR, TO
 Robinson-Houchin Optical Co., 79 Thurman Ave., Columbus 6, Ohio—LE, TO
 Rowe Radio Research Laboratory Co., 2422 N. Pulaski Rd., Chicago 39, Ill.—O
 Rubicon Co., Ridge Ave. at 35th St., Philadelphia 32, Pa.—RD, GA, R
 Sav-Way Industries, P. O. Box 117, Harper Sta., Detroit 13, Mich.—SM
 Saxl Instrument Co., 38-40 James St., East Providence 14, R. I.—C, LE, OE, TT, SM
 Scherr, George Co., Inc., 200 Lafayette St., New York 12, N. Y.—OE
 Scientific Radio Products Co., 738 W. Broadway, Council Bluffs, Iowa—CA, SR
 Scientific Service Laboratories, 915 Meridian Ave., S. Pasadena, Calif.—SA, SR
 Shallcross Mfg. Co., Jackson & Pusey Aves., Collingdale, Pa.—RD
 Sherron Electronics Co., 1201 Flushing Ave., Brooklyn 6, N. Y.—C, EB, GA, R, L
 Silver Co., McMurdo, 1240 Main St., Hartford 3, Conn.—SW, SA
 Simonds Machine Co., Inc., 246-48 Worcester St., Southbridge, Mass.—OE
 Sipp-Eastwood Corp., 39 Keen St., Paterson, N. J.—CW
 Skydyne, Inc., River Rd., Port Jervis, N. Y.—TT
 Solar Capacitor Sales Corp., 285 Madison Ave., New York 17, N. Y.—C
 S. O. S. Cinema Supply Corp., 449 W. 42nd St., New York 18, N. Y.—JE, OE
 Square D Co., 6060 Rivard St., Detroit 11, Mich.—OE
 Standard Instruments Corp., 568 Prospect Ave., New York 55, N. Y.—DC, DI, RD
 States Co., 19 New Park Ave., Hartford 6, Conn.—R
 Sta-Warm Electric Co., 333 N. Chestnut St., Ravenna, Ohio—OE
 Stoelting, C. H. Co., 424 N. Homan Ave., Chicago 24, Ill.—GA, GM
 Supreme Instruments Corp., Greenwood, Miss.—“Supreme”—SR
 Swain Nelson Co., 2320 Glenview Ave., Glenview, Ill.—LE, OE
 S-W Inductor Co., 1056 N. Wood St., Chicago 22, Ill.—L
 Sylvania Electric Products, Inc., 500 Fifth Ave., New York 18, N. Y.—C, ES, O, RA, SR, ST
 Takk Corp., 28 W. Market St., Newark, Ohio—PU
 Tally & Cooper, 75 Front St., Brooklyn 1, N. Y.—EB, GA
 Tech Laboratories, 337 Central Ave., Jersey City 7, N. J.—RD, R, SO
 Technical Apparatus Co., 1171 Tremont St., Boston 20, Mass.—C, DC, O, SA
 Technical Devices Corp., Beaufort & Eagle Rock Ave., Roseland, N. J.—SR
 Teleregister Corp., 157 Chambers St., New York 7, N. Y.—ST
 Tenney Engineering, Inc., 26 Ave. B, Newark 5, N. J.—TT
 Thompson, John E. Co., 1440 W. 47th St., Chicago 9, Ill.—MV, O, SW, SA, SR
 Thordarson Electric Mfg. Div., Maguire Industries, Inc., 500 W. Huron St., Chicago 10, Ill.—“Flash-tion”—FF

Thwing, Albert, Instrument Co., Penn St. & Pulaski Ave., Philadelphia 44, Pa.—DC, RD, ES
 Times Telephoto Equipment, Inc., 229 W. 43rd St., New York 18, N. Y.—OE, TO
 Transmitter Equipment Mfg. Co., Inc., 345 Hudson St., New York 14, N. Y.—SO
 Trefz Mfg. Co., 38-11 Main St., Flushing, L. I., N. Y.—R
 Triplett Electrical Instrument Co., Harmon Rd., Bluffton, Ohio—SR
 Triumph Mfg. Co., 913 W. Van Buren St., Chicago 7, Ill.—O, SA, SR
 Ullman Products Co., 857-61 4th Ave., Brooklyn 32, N. Y.—OE
 Union Electronics Corp., 38-01 Queens Blvd., Long Island City, N. Y.—SA, SR
 United Cinephone Corp., 65 New Litchfield St., Torrington, Conn.—ES
 U. S. Rubber Co., 1230 Sixth Ave., New York 20, N. Y.—SM
 U. S. Television Mfg. Corp., 3 W. 61st St., New York 23, N. Y.—SR, VP
 United Transformer Corp., 150 Varick St., New York 13, N. Y.—E, EF, L
 Vacolite Co., 3001-3003 N. Henderson, Dallas, Tex.—SA
 Valpey Crystal Corp., Highland St., Holliston, Mass.—OE
 Vibrotest—Associated Research, Inc.
 Walker, Robert, Inc., 403 W. 8th St., Los Angeles 14, Calif.—C, ES, MV, S
 Ward Leonard Electric Co., 31 South St., Mt. Vernon, N. Y.—R

Waterbury Companies, Inc., 835 S. Main St., Waterbury 90, Conn.—LE
 Waterman Products Co., Inc., 2445-63 Emerald St., Philadelphia 25, Pa.—O, SW, SA, SR, ST
 Watlow Electric Mfg. Co., 1320 N. 23rd St., St. Louis 6, Mo.—R
 Waugh Laboratories, 420 Lexington Ave., New York 17, N. Y.—L
 Weber Co., Earl, 4352 W. Roosevelt Ave., Chicago, Ill.—SR
 Welch, W. M. Mfg. Co., 1515 Sedgwick St., Chicago 10, Ill.—O, ST
 Weltronic Co., 19500 W. Eight Mile Rd., Detroit 19, Mich.—S
 Westinghouse Electric Corp., Meter Div., 95 Orange St., Newark 1, N. J.—OD
 Westinghouse Electric Corp., East Pittsburgh, Pa.—C, GA, OD, O, TT, R, SW, ST, SO, SM
 Weymouth Instrument Co., 1440 Commercial St., East Weymouth 89, Mass.—L
 Winslow Co., 9 Liberty St., Newark 5, N. J.—DC, RD, GA, R
 Winters & Crampton Corp., Grandville, Mich.—C
 World Wide Electronics, Inc., 72 E. 13th St., New York 3, N. Y.—EB, L
 York Electric & Machine Co., Carriltone Div., 30-34 N. Penn St., York, Pa.—TT, SM
 Zeiss, Carl, Inc., 485 Fifth Ave., New York 17, N. Y.—OE
 Zenith Optical Laboratory, 123 W. 64th St., New York 23, N. Y.—OE

(19) Machinery & Production Equipment



Air cleanersAC
 Bench lathesL
 Blower unitsB
 Buffers and grindersG
 Coil winding machinesCW
 Crystal grindersCG
 Crystal lapping discsLD
 Crystal saw bladesC
 DiesD
 Drill pressP
 Electric furnacesE
 Engraving machinesEM
 Impregnating equipmentIM
 Jigs and fixturesJ
 Marking and numbering machines.....MN
 Metal forming equipmentMF
 Mfg. facilitiesMG
 Molding pressesMP
 Powdered metal pressPM
 Pressure welding electrodesPW
 Punch pressPP
 Quartz cutting machinesQC
 Riveter, automaticR
 Soldering machinesSM
 Spot weldersS
 Strain gagesSG
 Vacuum pumpsVP
 Vacuum tube machineryVM
 Vibration control equipmentVC
 Wire insulating machineWI
 X-Ray, pattern markersX

Ace Mfg. Corp., Erie Ave. at "K" St., Philadelphia 21, Pa.—D, J
 Acme-Danneman Co., Inc., 203-205 Lafayette St., New York 12, N. Y.—D, J
 Acme Tool & Die Co., 426 Ingle St., Evansville 8, Ind.—D, J
 Acromark Co., 9-13 Morrell St., Elizabeth 4, N. J.—D, J, MN
 Acro Tool & Die Works, 4534 Broadway, Chicago 40, Ill.—J
 Agnew Electric Co., Milford, Mich.—S
 Air Reduction Sales Co., 60 E. 42nd St., New York 17, N. Y.—VM
 Aircraft & Diesel Equipment Corp., 4401 N. Ravenswood Ave., Chicago 40, Ill.—B
 Air-Maze Corp., 5200 Harvard Ave., Cleveland 5, Ohio—AC
 Ajax Electrothermic Corp., Ajax Park, Trenton 5, N. J.—E
 Allen Electric & Equipment Co., 2101-2117 N. Pitcher St., Kalamazoo 13-f, Mich.—S
 Allis-Chalmers Mfg. Co., P. O. Box 512, Milwaukee 1, Wis.—VP
 All-Steel Equipment Co., 723 Griffith Ave., Aurora, Ill.—MF
 American Electric Fusion Corp., 2610 W. Diversey Ave., Chicago 47, Ill.—S
 American Instrument Co., 8030 Georgia Ave., Silver Spring, Md.—SG
 Ams. Max, Machine Co., Foot of Scofield Ave., Bridgeport 5, Conn.—MF

Andrews & Perilla, 39-30 Crescent St., Long Island City, N. Y.—D, J, MF
 Annis, R. B., Company, 1101 N. Delaware St., Indianapolis 2, Ind.—MN, VC
 Arnesen Electric Co., Inc., 116 Broad St., New York 4, N. Y.—D, J
 Atlas Metal Stamping Co., 3801 Castor Ave., Philadelphia 24, Pa.—D, J
 Austin, O., Co., 335 Throop Ave., Brooklyn 21, N. Y.—MN
 Auto Engraver Co., 1776 Broadway, New York 19, N. Y.—EM
 Automatic Mfg. Corp., 900 Passaic Ave., East Newark, N. J.—TP
 Baird Machine Co., 1700 Stratford Ave., Stratford 9, Conn.—MF
 Baker Instrument Co., 310 Main St., Orange, N. J.—E
 Baldwin Locomotive Works, Baldwin Southwark Div., Paschall P. O., Philadelphia 42, Pa.—MP, PM, SQ
 Barrett, Leon J. Co., P. O. Box 378, Worcester 1, Mass.—JM
 Barry, L. N. Co., 179 Sidney St., Cambridge 39, Mass.—VC
 Bear Mfg. Co., Rock Island, Ill.—VC
 Bellows Co., 861 E. Tallmadge Ave., Akron 10, Ohio—AC, B
 Bennel Machine Co., Inc., 20 Grand Ave., Brooklyn, N. Y.—J, MF
 Bell Radio & Television, 125 E. 46th St., New York 17, N. Y.—CW, MN
 Black & Decker Mfg. Co., E. Pennsylvania Ave., Towson 4, Md.—G
 Bliss, E. W. Co., 53rd St. & 2nd Ave., Brooklyn 32, N. Y.—MP, PM, PM
 Browne, J. Electric Co., 3774 Surf Ave., Brooklyn 24, N. Y.—MF, R
 Brush Development Co., 3405 Perkins Ave., Cleveland 14, Ohio—SG
 Burgess Battery Co., Handicraft Div., Vibro Tool Dept., 180 N. Wabash Ave., Chicago 1, Ill.—MN
 Callite Tunstun Corp., 540 39th St., Union City, N. J.—PW
 Carpenter Products, Inc., 85 Washburn St., Bridgeport, Conn.—S
 Central Scientific Co., 1700 Irving Park Rd., Chicago 13, Ill.—VP
 Chicago Rivet & Machine Co., 9600 W. Jackson Blvd., Bellwood, Ill.—R
 Clark, Jas. Jr. Elec. Co., 600 Bergman St., Louisville 2, Ky.—G
 Clark, Robert H. Co., 9330 Santa Monica Blvd., Beverly Hills, Calif.—QC
 Clark Controller Co., 1146 E. 152nd St., Cleveland 10, Ohio—S
 Congress Tool & Die Co., Congress Die Casting Div., 3750 E. Outer Dr., Detroit, Mich.—D, J, MF
 Consolidated Diamond Tool Co., 320 Yonkers Ave., Yonkers, N. Y.—C
 Consolidated Engineering Corp., Pasadena 1, Calif.—SG
 Crescent Industries, Inc., 4140 Belmont Ave., Chicago 41, Ill.—D
 Daffons Laboratories, 5066 Santa Monica Blvd., Los Angeles 27, Calif.—E
 Daly Machine & Tool Works, 923 Frelinghuysen Ave., Newark, N. J.—J
 Davidson Fan Co., 213 California St., Newton, Mass.—B
 Davies, Harry, Molding Co., 1428 N. Wells St., Chicago 10, Ill.—J
 Dayton Acme Co., 930 York St., Cincinnati 14, Ohio—D, J
 Denham & Co., Book Bldg., Detroit 26, Mich.—MN
 DeSanno, A. P. & Son, Inc., Phoenixville, Pa.—G
 Despatch Oven Co., 619 S.E. Eighth St., Minneapolis 14, Minn.—E
 Diehl Mfg. Co., FINDERNE Plant, Somerville, N. J.—B, G

- Distillation Products, Inc., Vacuum Equipment Div., 755 Ridge Road W., Rochester 13, N. Y.—IM, VP, VM
- Do-All Co., 1301 Washington Ave., S., Minneapolis 4, Minn.—D, MF, G, MN
- Doehler-Jarvis Corp., Robertson St., Batavia, N. Y.—D, P, E, J, MN, MF, MP, S
- Dynamic Air Engineering, Inc., 1619 S. Alameda St., Los Angeles 21, Calif.—B
- Ecco High Frequency Corp., 7020 Hudson Blvd., North Bergen, N. J.—VM
- Edwards, T. J., Inc., 210 South St., Boston 5, Mass.—D, MN
- Eisler Engineering Co., 750 S. 13th St., Newark 3, N. J.—B, CW, E, PW, S, VP, VM
- Eitel-McCullough, Inc., San Bruno, Calif.—VP
- Electric Coding Machine Co., 57 Franklin St., New York 13, N. Y.—MN
- Electric Furnace Co., West Wilson St., Salem, Ohio—E
- Electric Heat Control Co., 9123 Inman Ave., Cleveland 5, Ohio—S
- Electrix Corp., 150 Middle St., Pawtucket, R. I.—P, J, MF
- Electro Mag. Mfg. Co., 610 N. Rockford Ave., Rockford, Ill.—MN
- Electronic Mfg. Co., 20 Orange St., Newark 2, N. J.—D, J, VM
- Ess Instrument Co., 963 Washington St., Bergenfield, N. J.—SM
- Felker DiMet—Felker Mfg. Co.
Felker Mfg. Co., 1128 Border Ave., Torrance, Calif.—“Felker DiMet”—LD, C, QC
- Foredom Electric Co., 27 Park Place, New York 7, N. Y.—G
- Foxboro Co., Foxboro, Mass.—SG
- Fredericks, George E. Co., Bethayres, Pa.—VP
- Fuchs, Charles A., 13-15 Mollineux Pl., Roosevelt, L. I., N. Y.—J
- Gardiner Mfg. Co., 2711 Union St., Oakland 7, Calif.—G, CW, J, MF
- Gatti, Aurele M., Inc., 1909 Liberty St., Trenton 9, N. J.—G
- General Electric Co., 1 River Rd., Schenectady 5, N. Y.—SG
- General Tire & Rubber Co., Garfield, Wabash, Ind.—VC
- General Winding Co., 420 W. 45th St., New York 19, N. Y.—CW, IM
- Giannini, G. M. & Co., Inc., Autoflight Instrument Div., 4522 Lankershim Blvd., N. Hollywood, Calif.—SG
- Gisholt Machine Co., 1125 E. Washington Ave., Madison 3, Wis.—J, MF, VC
- Goodall Electric Mfg. Co., 3rd & Main Sts., Ogallala, Neb.—AC, CW, CG, LD, C, P, IM, J, MN, MF, MP, QC, SM, S, VM, VC
- Graham Rotary File Co., 4816 Tacony St., Philadelphia 37, Pa.—G
- Hadley, Robert M. Co., 707-711 E. 61st St., Los Angeles 1, Calif.—CW, D, J
- Hannon Electric Co., 1605 Waynesburg Rd., S.E., Canton, Ohio—AC, B, G, CW, E
- Harper Electric Furnace Corp., Niagara Falls, N. Y.—E
- Harvey Machine Co., Inc., 6200 Avalon Blvd., Los Angeles 3, Calif.—D, J
- Hathaway Instrument Co., 1315 S. Clarkson St., Denver 10, Colo.—SG
- Haydu Bros., P. O. Box 1226, Plainfield, N. J.—B, VP, VM
- Hercules Electric & Mfg. Co., Inc., 2500 Atlantic Ave., Brooklyn 7, N. Y.—S
- Hoffman, P. R., Co., 321 Cherry St., Carlisle, Pa.—CG, LD, QC
- Hovis Screwlock Co., 8100 E. Nine Mile Rd., Van Dyke, Mich.—D
- Hydraulic Press Mfg. Co., Mt. Gilend, Ohio—PM
- Hydraulic Tool & Die Corp., 4625 Third Ave., New York 37, N. Y.—D, J
- Ideal Industries, Inc., 5194 Park Ave., Sycamore, Ill.—AC, B, CW
- Ilg Electric Ventilating Co., 2850 N. Crawford Ave., Chicago 41, Ill.—B
- Infra-Red Engineers & Designers, E. 73rd & Grand Ave., Cleveland 4, Ohio—E
- International Machine Works, 2027 48th St., North Bergen, N. J.—VP, VM
- Johns-Manville Sales Corp., 22 E. 40th St., New York 16, N. Y.—VC
- Kaddis, A. G., Screw Products Co., Inc., 42 Allen St., Rochester 6, N. Y.—MG
- Kable Engineering Co., 1307 7th St., North Bergen, N. J.—E, MN, VP, VM
- Keystone Electronics Co., 50-52 Franklin St., New York 13, N. Y.—J
- Kinney Mfg. Co., 3595 Washington St., Boston 30, Mass.—VP
- Knight, H. W., & Son, Inc., 96 State St., Seneca Falls, N. Y.—X
- Kollath Mfg. Co., 4601 W. Addison St., Chicago, Ill.—D, J, MF
- Kux Machine Co., 3040 W. Harrison St., Chicago 24, Ill.—MF, MP, PM
- L.A.B. Corp., 31 Union Place, Summit, N. J.—VC
- Leiman Bros., Inc., 203 Christie St., Newark 5, N. J.—B, CG, VP
- Level High Frequency Laboratories, Inc., 39 W. 60th St., New York 23, N. Y.—E
- Lewyt Corp., 60 Broadway, Brooklyn 11, N. Y.—MG
- Linick, Leslie L., 29 E. Madison St., Chicago, Ill.—L, MF
- Litton Engineering Laboratories, P. O. Box 749, Redwood City, Calif.—S, VP, VM
- Lord Mfg. Co., 1635 W. 12th St., Erie, Pa.—VC
- L-R Mfg. Co., Div. of Ripley Co., 65 New Litchfield St., Torrington, Conn.—B
- Luma Electric Equipment Co., P. O. Box 132, Toledo 1, Ohio—MN
- Lyman Electronic Corp., 12 Cass St., Springfield, Mass.—J
- Magnetic Products Co., Norwalk, Conn.—CW
- Mallory, P. R. & Co., Inc., 3029 E. Washington St., Indianapolis 6, Ind.—PW
- Markem Machine Co., Emerald St., Keene, N. H.—MN
- Marlboro Tool & Mfg. Co., Charles St. & New Brunswick Ave., Matawan, N. J.—VM
- Martindale Electric Co., Box 617, Edgewater Branch, Cleveland 7, Ohio—G
- Mattern, F. Mfg. Co., 4647 N. Cicero Ave., Chicago 30, Ill.—X
- Matthews, Jas. H. & Co., 3729 Belmont Ave., Chicago 18, Ill.—D, J, MN
- Megard Corp., 1601 S. Burlington Ave., Los Angeles 6, Calif.—CW
- Mico Instrument Co., 80 Trowbridge St., Cambridge 38, Mass.—CW, EM
- Miles Reproducer Co., Inc., 612 Broadway, New York 3, N. Y.—CW
- Milford Rivet & Machine Co., Eastern Div., Milford, Conn.—R
- Mogey, William & Sons, Inc., Interharen Ave., Plainfield, N. J.—G
- Monitor Piezo Products Co., 815 Fremont Ave., So. Pasadena, Calif.—C, LD, CG
- Montgomery Bros., 20 E. Jackson Blvd., Chicago, Ill.—AC
- Morey Machinery Co., Inc., 4-57 26th Ave., Astoria 2, L. I., N. Y.—L
- Morse Twist Drill & Machine Co., 163 Pleasant St., New Bedford, Mass.—D
- National Gasket & Washer Mfg. Co., 122 E. 25th St., New York 10, N. Y.—LD
- National Research Corp., 100 Brookline Ave., Boston 15, Mass.—IM, VP, VM
- N. J. Jewelers Supply, 280 Plane St., Newark 2, N. J.—S
- New Jersey Machine Corp., Willow Ave. at 16th St., Hoboken, N. J.—MN, VP
- New Method Steel Stamps, Inc., 147 Jos. Campau St., Detroit 7, Mich.—MN
- New York Blower Co., 3155 S. Shields, Chicago, Ill.—B
- North American Philips Co., Inc., 100 E. 42nd St., New York 17, N. Y.—D
- Norton Co., 1 New Bond St., Worcester 6, Mass.—G, CG, C
- Numberal Stamp & Tool Co., Huguenot Park, Staten Island 12, N. Y.—MN
- Nurnberg Thermometer Co., Inc., 112 Broadway, Cambridge 42, Mass.—IM, VP
- OK Machine Co., 2131 Fairfield Ave., Ft. Wayne 6, Ind.—D, J, MF
- O'Neil-Irwin Mfg. Co., 316 Eighth Ave. S., Minneapolis 15, Minn.—MF
- Parker-Kalon Corp., 200 Varick St., New York 14, N. Y.—PP
- Peerless Roll Leaf Co., Inc., 4511 New York Ave., Union City, N. J.—MN
- Penn Fibre & Specialty Co., 2024 to 2030 E. Westmoreland St., Philadelphia 34, Pa.—D
- Pratt & Whitney, Div. of Niles-Bement-Pond Co., West Hartford, Conn.—L, SG
- Preco, Inc., 960 E. 61st St., Los Angeles 1, Calif.—MP
- Preis, H. P., Engraving Machine Co., 155 Summit St., Newark 4, N. J.—G, EM, MN
- Process & Instruments, 60 Greenpoint Ave., Brooklyn 22, N. Y.—E
- Production Devices, Inc., N. William St., Whitehall, N. Y.—J, MF, MP
- Production Engineering Corp., 666 Van Houten Ave., Passaic, N. J.—IM
- Progressive Welder Co., 3050 E. Outer Drive, Detroit 12, Mich.—S
- Promenette Radio & Television Corp., 1721 Elmwood Ave., Buffalo 7, N. Y.—SM
- Quad Mfg. Co., 462 N. Parkside Ave., Chicago 44, Ill.—CW, D
- Quality Hardware & Machine Corp., 5849 N. Ravenswood Ave., Chicago 26, Ill.—C, J
- Radiat Service, 720 W. Schubert Ave., Chicago 14, Ill.—D, J
- Raytheon Mfg. Co., 55 Chapel St., Newton 58, Mass.—S
- RCA Victor Div., Radio Corp. of America, Front & Cooper Sts., Camden, N. J.—E, J, MN, MF, VM
- Remler Co., Ltd., 2101 Bryant St., San Francisco 10, Calif.—D
- Reynolds Electric Co., 2650 W. Congress St., Chicago 12, Ill.—G
- Rice's Sons, Bernard, 325 Fifth Ave., New York 16, N. Y.—J
- Robinson Aviation, Inc., Teterboro Air Terminal, Teterboro, N. J.—VC
- Sav-Way Industries, P. O. Box 117, Harper Station, Detroit 13, Mich.—G, MP
- Saxl Instrument Co., 38-40 James St., East Providence 14, R. I.—J, SG
- Schauer Machine Co., 2060 Reading Rd., Cincinnati 2, Ohio—G
- Sciaky Bros., 4915 W. 67th St., Chicago 38, Ill.—S
- Sexton Can Co., Inc., 31 Cross St., Everett 49, Mass.—MF
- Sherron Electronics Co., 1201 Flushing Ave., Brooklyn 6, N. Y.—MG
- Simonds Machine Co., Inc., 246-48 Worcester St., Southbridge, Mass.—D, J
- Sittler Mfg. Corp., 18 N. Ada St., Chicago 7, Ill.—G
- Smith, F. A., Mfg. Co., Union & Augusta, Rochester 2, N. Y.—B
- Smith, Nathan R. Mfg. Co., 105 Pasadena Ave., South Pasadena, Calif.—D
- Special Devices Co., Farmington Ave., Berlin, Conn.—P, J
- Special Machine Tool Engrg. Works, 132 Lafayette St., New York 13, N. Y.—MG
- Sperman Metal Specialties, 2199 E. 21st St., Brooklyn 29, N. Y.—D, J, MF
- Standard Electrical Tool Co., 2488 River Rd., Cincinnati 4, Ohio—AC, L, G
- Standard Machinery Co., 1475 Elmwood Ave., Providence 7, R. I.—CW, MF
- Starrett, L. S., Co., Athol, Mass.—SG
- Sta-Warm Electric Co., 333 N. Chestnut St., Ravenna, Ohio—IM
- Stedman, Robert L., E. Main St., Oyster Bay, N. Y.—J
- Stevens Machinery Co., 1461 W. Grand Ave., Chicago 22, Ill.—CW
- Stevenson, Jordan & Harrison, Inc. (Electronic Power Co.), 19 W. 44th St., New York 18, N. Y.—S
- Stokes, F. J., Machine Co., 6054 Tabor Rd., Philadelphia 20, Pa.—MP, PM, VP
- Stricker-Brunhuber Co., 19 W. 24th St., New York 10, N. Y.—J
- Sturtevant, B. F., Co., Damon, Hyde Park, Boston 36, Mass.—B
- Swanson Tool & Machine Products, 810-14 E. 8th St., Erie, Pa.—D, J, VM
- Taylor-Winfield Corp., 1052 Mahoning Ave., N.W., Warren, Ohio—S
- Thermo Electric Mfg. Co., 480 W. Locust St., Dubuque, Iowa—E
- Thomas & Skinner Steel Products Co., 1120 E. 23rd St., Indianapolis 5, Ind.—D
- Trane Co., 3rd & Cameron Ave., LaCrosse, Wis.—B
- Trent, Harold E., Co., 5005 Wilde St., Philadelphia 27, Pa.—E, VM
- Tubular Rivet & Stud Co., Wollaston 70, Mass.—R
- Tweezer-Weld Corp., 280 Plane St., Newark 2, N. J.—S
- U. S. Electrical Motors, Inc., 200 E. Slauson Ave., Los Angeles, Calif.—G
- U. S. Electrical Tool Co., 1050 Findlay St., Cincinnati 14, Ohio—G
- U. S. Rubber Co., 1230 Sixth Ave., New York 20, N. Y.—VC
- U. S. Tool Co., Inc., 255 N. 18th St., Amperc, N. J.—MF
- Universal Winding Co., 1655 Elmwood Ave., Cranston 7, R. I.—CW
- Universal X-Ray Products, Inc., 1800 N. Francisca Ave., Chicago 47, Ill.—VP, VM
- Vacuum Engineering Div., National Research Corp., 100 Brookline Ave., Boston 15, Mass.—VP
- Volynsky, Boris M., Mfg. Co., Inc., 311 W. 66th St., New York 23, N. Y.—L, J, QC
- Vonnegut Moulder Corp., 1815 Madison Ave., Indianapolis 2, Ind.—CG
- Wadsworth Watch Case Co., Inc., Dayton, Ky.—D, I
- Walker-Turner Co., Inc., 639 South Ave., Plainfield, N. J.—L, G, P
- Waugh Laboratories, 420 Lexington Ave., New York 17, N. Y.—VC, SG
- Welch, W. M., Mfg. Co., 1515 Sedgwick St., Chicago, Ill.—VP
- Westinghouse Elec. Corp., East Pittsburgh, Pa.—AC, B, E, J, PW, S, VP, VC, X, L
- Whistler, S. B., & Sons, Inc., 752 Military Rd., Buffalo 17, N. Y.—D
- Wiedemann Machine Co., 1815 W. Sedgley Ave., Philadelphia 32, Pa.—PP
- Wincharger Corp., E. 7th at Division, Sioux City 6, Iowa—G
- York Electric & Machine Co., Carillotone Div., 30-34 N. Penn St., York, Pa.—MN
- Zetka Laboratories, Inc., 198-10-12 32nd Ave., Bay-side, N. Y.—VM

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This Directory of radio-electronic - television sources of supply is most complete and up-to-date, having been totally compiled and revised during 1946, with a final check-survey of manufacturers and their products completed as late as March and April of the present year.

(20) Measurement & Test Equipment



Adapters AD
Ammeters, indicating A
Ammeters & milliammeters, recording AF
Attenuation meters AM
Battery testers BT
Bridges B
Color analyzers C
Distortion meters D
Electric dimension gage EG
Electric micrometer EM
Electronic hygrometers EH
Electronic viscosimeters VC
Electrostatic VM
Field strength meters F
Frequency measuring devices FM
Frequency monitors FR
Frequency response recorders FS
Galvanometers G
Harmonic analyzers HA
High volt breakdown testers H
Impulse counter IC
Instrument parts MP
Insulation testers IT
Ionization gages IG
Light intensity L
Megohm meters MO
Modulation meters MM
Multi-meters M
Neon test lights N
Ohmmeters O
Output meters OM
PE densitometers PE
PH meters PH
Pressure measurements PM
Phase angle meters P
Q meter QE
Radio set analyzers R
Reflection meters RM
Signal tracers SG
Sound level meters & recorders S
Spring testing equip. ST
Tachometer TA
Thermocouples TH
Thermometers & pyrometers T
Time measurement TM
Trans. measuring set TR
Tube testers TT
Tuning forks TF
Vacuum gages VG
Vac. tube voltmeters VT
Vibration measuring equip. VM
Volume indicators VI
Voltmeters V
Watt-hour meters WH
Watt meters W
Wave analyzers WA
Wave meters WM

Ace Mfg. Corp., Erie Ave. at K St., Philadelphia 24, Pa.—MP
Adrem Co., 143 Newbury St., Boston 16, Mass.—AD
Advance Research Corp., 214 W. 42nd St., New York, N. Y.—C, L, BM, S, WA
Aerovox Corp., 740 Belleville Ave., New Bedford, Mass.—B, H, IT, MO
Airplane & Marine Instruments, Inc., Clearfield, Pa.—B, F, WM
Air-Track Mfg. Co., A Div. of Aerodynamic Research Corp., 5009 Calvert Road, College Park, Md.—FM
Alden Products Co., 117 North Main St., Brockton 64, Mass.—AD
All American Tool & Mfg. Co., 1014 W. Fullerton Ave., Chicago 14, Ill.—VM
Allen Electric & Equipment Co., 2101-2117 N. Pitcher St., Kalamazoo 13-F, Mich.—BT, PM, TA, VG
Alnor—Illinois Testing Laboratories, Inc.
American Communications Corp., 306 Broadway, New York, N. Y.—IT
American Electronics, 37 E. 18th St., New York 3, N. Y.—TT
American Instrument Co., 8030-8050 Georgia Ave., Silver Spring, Md.—H, MO
American Radio Co., 611 E. Garfield Ave., Glendale 5, Calif.—B, P, QE, VT
American Thermo-Electric Co., 67 E. 8th St., New York 3, N. Y.—TH
American Time Products, Inc., 580 Fifth Ave., New York 19, N. Y.—TM, TF
American Transformer Co., Inc., 178 Emmet St., Newark 5, N. J.—H
Amn'o Corp., 4224 Lincoln Ave., Chicago 18, Ill.—MM, M, T
Amplifier Co. of America, 398 Broadway, New York 13, N. Y.—H, P, VI
Andrew Co., 363 E. 75th St., Chicago 19, Ill.—P
Annis, R. B. Co., 1101 N. Delaware St., Indianapolis 2, Ind.—PM, TR, VM
Applied Research Laboratories, 4336 San Fernando Rd., Glendale 4, Calif.—PE

Askania Regulator Co., 1603 S. Michigan Ave., Chicago 16, Ill.—PM
Associated Research, Inc., 231 S. Green St., Chicago 7, Ill.—A, H, IT, MO, M, O, TA
Audio-Tone Oscillator Co., 237 John St., Bridgeport 3, Conn.—AF, EG, FS, S, TR
Automatic Electric Co., 1033 W. Van Buren St., Chicago 7, Ill.—IC
Automatic Pump & Softener Corp., 2412 Grant St., Rockford, Ill.—C
Automatic Temperature Control Co., Inc., 34 E. Logan St., Philadelphia 44, Pa.—TM
Bailey Meter Co., 1050 Ivanhoe Rd., Cleveland 10, Ohio—"Pyrotron"—T
Baker & Co., Inc., 113 Astor St., Newark 5, N. J.—TH
Baker Instrument Co., 310 Main St., Orange, N. J.—C
Baldwin Locomotive Works, Baldwin Southwark Div., Paschall P. O., Philadelphia 42, Pa.—B, PM, UT
Ballantine Laboratories, Inc., Boonton, N. J.—VT, V
Barber, Alfred W. Laboratories, 34-04 Francis Lewis Blvd., Flushing, L. I., N. Y.—VT
Barker & Williamson, Upper Darby, Pa.—D, E, F, FM, VT, VI, WM
Barnes, Wallace Co., P. O. Box 1521, Bristol, Conn.—MP
Bay Products Corp., 171 Camden St., Boston 18, Mass.—TM
Bendix Radio Division, Bendix Aviation Corp., East Joppa Rd., Baltimore 4, Md.—F, FM, P
Biddle, James G. Co., 1211 Arch St., Philadelphia 7, Pa.—FM, IT, MO, O, TA
Bird Electronic Corp., 1800 E. 38th St., Cleveland 14, Ohio—W
R. H. Bird & Co. Inc., 23 Moody St., Waltham, Mass.—MP
Boes, W. W. Co., 3001 Salem Ave., Dayton 3, Ohio—A, G, L, O, TH, V, VI
Boonton Radio Corp., 518 Main St., Boonton, N. J. QE
Boulton Instrument Corp., 65 Madison Ave., New York 16, N. Y.—TA
Bowser, Inc., Terryville, Conn.—VI
Bristol Co., Waterbury 91, Conn.—AF, PH, PM, TA, TH, T, TM, TR, VG, V
Brown Engineering Co., 4635 S. E. Hawthorne Blvd., Portland 15, Ore.—B
Brown Instrument Co., Div. Minneapolis-Honeywell Regulator Co., 4515 Wayne Ave., Philadelphia 44, Pa.—TA, TN, T, TH
Browning Laboratories, Inc., 750 Main St., Winchester, Mass.—C, FM, FR
Brush Development Co., 3405 Perkins Ave., Cleveland 14, Ohio—G, PM, TR
Bunnell, J. H. & Co., 81 Prospect St., Brooklyn 1, N. Y.—TF
Burlington Instrument Co., N. Fourth St., Burlington, Iowa—A, M, S, VI, V
Burnett, Wm. W. L. Radio Lab., 4814 Idaho St., San Diego 4, Calif.—FM
Burton-Rogers Co., 857 Boylston St., Boston 16, Mass.—A, B, H
Cambridge Instrument Co., Inc., 3005 Grand Central Terminal, New York 17, N. Y.—B, E, G, PH, T, TF, VM
Cardwell, Allen D. Mfg. Corp., 81 Prospect St., Brooklyn 1, N. Y.—FM
Carson Micrometer Corp., P. O. Box 57, Little Falls, N. J.—EM
Centralab Division, Globe-Union, Inc., 900 E. Keefe Ave., Milwaukee 1, Wis.—BT
Cinema Engineering Co., 1510 W. Verdugo Ave., Burbank, Calif.—AM, B, TR, VI
Clippard Instrument Laboratory, 1440 Chase Ave., Cincinnati 23, Ohio—A, MP
Clough-Bregle Co., 6014 N. Broadway, Chicago 40, Ill.—A, B, M, O, TR, TT, V
Coleman Electric Co., 318 Madison St., Maywood, Ill.—PH
Collins Radio Co., Cedar Rapids, Iowa—FM, VI
Colloid Equipment Co., Inc., 50 Church St., New York 7, N. Y.—PH
Columbia Electric Mfg. Co., 4519 Hamilton Ave., N. E., Cleveland 14, Ohio—"Tong Test"—A
Commercial Research Labs., Inc., 20 Bartlett Ave., Detroit 3, Mich.—PH
Communication Equipment & Engineering Co., 5646 W. Race St., Chicago 44, Ill.—AM, TR
Communication Measurements Laboratory, 120 Greenwich St., New York 6, N. Y.—B, G, IT, MO, R
Communication Parts, 1101 N. Paulina St., Chicago 22, Ill.—QE
Communications Equipment Corp., 134 W. Colorado St., Pasadena 1, Calif.—VM
Conant Electrical Laboratories, 6500 "O" St., Lincoln 5, Nebr.—MP
Conn, C. G. Ltd., 1101 E. Beardsley Ave., Elkhart, Ind.—FM, TA, VM
Connecticut Telephone & Electric, Div. Great American Industries, Inc., Meriden, Conn.—IT, N
Consolidated Engineering Corp., Pasadena 1, Calif.—VM
Continental Electric Co., 715 Hamilton St., Geneva, Ill.—VG
Corbin Screw Division, American Hardware Corp., High, Myrtle & Grove Sts., New Britain, Conn.—TA
Cornell-Dubilier Electric Corp., So. Plainfield, N. J.—B
Cover Dual Signal Systems, Inc., Div. Electra-Voice Corp., 5215 N. Ravenswood Ave., Chicago 40, Ill.—B
Cramer, R. W. Co., Inc., Centerbrook, Conn.—TM
Crystal Research Laboratories, Inc., 29 Allyn St., Hartford 3, Conn.—FM
Crystal Research Products, Dumont, N. J.—FM
Cyclotron Specialties Co., Moraga, Calif.—IC, TM
Daven Co., 191 Central Ave., Newark 4, N. J.—AM, FM, OM, TR, VI

Dayton Acme Co., 930 York St., Cincinnati 14, Ohio—H, IT, M, O, R, TT, VG, VT
DeJur Amco Corp., Northern Blvd. at 45th St., Long Island City 1, N. Y.—A, L, V
DeMornay-Budd, Inc., 475 Grand Concourse, New York 51, N. Y.—AM, FM, WM
Deutschmann, Tobe Corp., Canton, Mass.—AM, B, FM, FS, H, MO
DeWald Radio Mfg. Corp., 440 Lafayette St., New York 3, N. Y.—FM, M
Diamond Instrument Co., North Ave., Wakefield, Mass.—FM, WM
Dickson Co., 7420 Woodlawn Ave., Chicago 19, Ill.—T
Dietert, Harry W. Co., 9330 Roselawn Ave., Detroit 4, Mich.—PE
Dillon, W. C. & Co., Inc., 5410 W. Harrison St., Chicago 44, Ill.—ST, T
Distillation Products, Inc., Vacuum Equipment Div., 755 Ridge Road, W. Rochester 13, N. Y.—IC, IG, TH, VG
Doehler-Jarvis Corp., Robertson St., Batavia, N. Y.—A, B, MP
Donagan Electric Mfg. Co., 2987 Franklin St., Detroit 7, Mich.—IT
Doogittle Radio, Inc., 7421-23 S. Loomis Blvd., Chicago 36, Ill.—D, FM
Drake, R. L. Co., 11 Longworth St., Dayton 2, Ohio—EH, E, F, IG, PH, P
Eastern Amplifier Corp., 794 E. 140th St., New York 54, N. Y.—B, FM, M
Eastern Electronics Corp., 41 Chestnut St., New Haven, Conn.—B, FM, M, O, QE, R, S, TT, VT, VI, V
Eastern Specialty Co., 3617 N. 8th St., Philadelphia 40, Pa.—MP, WH
Ecto High Frequency Corp., 7020 Hudson Blvd., North Bergen, N. J.—VG
Eclipse-Pioneer Division, Bendix Aviation Corp., Teterboro, N. J.—PM
Eitel-McCullough, Inc., San Bruno, Calif.—IG
Electric Heat Control Co., 9123 Inman Ave., Cleveland 5, Ohio—BT, H, TA
Electrical Facilities, Inc., 4224 Holden St., Oakland 8, Calif.—V
Electro Products Laboratory, 549 W. Randolph St., Chicago 6, Ill.—FM, PM, VM
Electro-Tech Equipment Co., 117 Lafayette St., New York 13, N. Y.—A, AF, RT, B, FM, FS, G, H, MP, IT, L, MO, M, O, PH, P, R, TA, TH, T, TM, TT, VT, VI, V, WH, W
Electronic Development Co., 1336 N. Saddle Creek Rd., Omaha 3, Nebr.—A, AF, AM, BT, EG, EM, G, MO, M, O, R, TA, TH, T, V
Electronic Engr. Service & Labs., 114-38 Farmers Blvd., St. Albans 12, L. I., N. Y.—B, F, FM, QE, VT
Electronic Engineers, 611 E. Garfield Ave., Glendale 5, Calif.—B, C, EG, EM, FM, IC, L, PM, TM, VM
Electronic Measurements Co., Red Bank, N. J.—D, F, FM, II, QE, R, TM, VT, WA
Electronic Plumbing Corp., 311 Nepperhan Ave., Yonkers 2, N. Y.—WM
Electronic Research Corp., 2655 W. 19th St., Chicago 8, Ill.—B, F, FM, MO, M, O, PH, P, VG, VT, WM
Electronic Research & Mfg. Corp., 5805 Hough Ave., Cleveland 3, Ohio—VT
Electronic Specialties Mfg. Co., 68 High St., Worcester 2, Mass.—F, FM, R, TR, VT, WM
Electronic Specialty Co., 3456 Glendale Blvd., Los Angeles 26, Calif.—F
Electronic Tube Corp., 1200 E. Mermaid Lane, Chestnut Hill, Philadelphia 18, Pa.—MP, PM, TA, TT, VM
Elematic Engineering Corp., 6046 S. Wentworth Ave., Chicago 21, Ill.—AF, T
Elgin National Watch Co., 107 National St., Elgin, Ill.—MP
Engelhard, Charles, Inc., 233 N. J. R. R. Ave., Newark 5, N. J.—AF, TH, T, G, V
Engineering Laboratories, Inc., 610-624 E. 4th St., Tulsa 3, Okla.—VC, FM, FS, G, MP, IG, PM, S, VM
Eppley Laboratory, Inc., 12 Sheffield Ave., Newport, R. I.—B, TH
Erco Radio Laboratories, Inc., 231 Main St., Hempstead, L. I., N. Y.—FM, WM
Ericsson Screw Machine Products Co., Inc., 25 Lafayette St., Brooklyn 1, N. Y.—MP
Esterline-Angus Co., Inc., P. O. Box 596, Indianapolis, Ind.—A, TM, V, W
Fada Radio & Electric Mfg. Co., Inc., 30-20 Thomson Ave., Long Island City 1, N. Y.—F, FM, O, VT, VI
Farrand Optical Co., Inc., Bronx Blvd. & E. 238th St., New York 66, N. Y.—PE
Federal Telephone & Radio Corp., 200 Mt. Pleasant Ave., Newark 4, N. J.—AM, RT, TR, TT
Felsenthal, G. & Sons, 4108 W. Grand, Chicago 51, Ill.—MP
Ferranti Electric, Inc., 30 Rockefeller Plaza, New York 20, N. Y.—A, E, H, IT, V, WH
Ferris Instrument Co., 110 Cornellia St., Boonton, N. J.—F, FM, VT, V
Field Electrical Instrument Co., 109 E. 184th St., New York 53, N. Y.—TH
Film Crafts Engineering Co., 36 W. 25th St., New York 10, N. Y.—G, PE
Fischer-Smith, Inc., 162 State St., West Englewood, N. J.—TA
Fisher Scientific Co., 711 Forbes St., Pittsburgh, Pa.—PH, G
Fish-Schurman Corp., 230 E. 45th St., New York 17, N. Y.—C, RM
Ford Radio & Mica Corp., 536 63rd St., Brooklyn 20, N. Y.—BT
Fortham Mfg. Co., 2736 Creston Ave., New York 58, N. Y.—BT, N
Fredericks, George E. Co., Bethayres, Pa.—IG, VG
Freed Radio Corp., 200 Hudson St., New York, N. Y.—F

Freed Transformer Co., 72 Spring St., New York 12, N. Y.—B, D, MO
 riez Instrument Div., Bendix Aviation Corp., Taylor Ave. near Loch Raven Blvd., Baltimore 4, Md.—T
 Gaertner Scientific Corp., 1201 Wrightwood Ave., Chicago 14, Ill.—TM, TF
 Gamma Instrument Co., Inc., 95 Madison Ave., New York, N. Y.—PH
 Gardner, Henry A. Laboratory, Inc., 4723 Elm St., Bethesda 14, Md.—RM
 Garner Electronics Corp., 1100 W. Washington Blvd., Chicago 7, Ill.—FM
 Gatti, Aurele M. Inc., 1909 Liberty St., Trenton 9, N. J.—MP
 Gem Radio & Television Co., 303 W. 42nd St., New York 18, N. Y.—BT, B, F, FM, M, N, O, T, VT, V, WM
 General Cement Mfg. Co., 919 Taylor Ave., Rockford, Ill.—N
 General Communication Co., 530 Commonwealth Ave., Boston 15, Mass.—FM, L, QE, TT
 General Control Co., 1200 Soldiers Field Rd., Boston 34, Mass.—EG, EM
 General Electric Co., 1 River Rd., Schenectady 5, N. Y.—VG, OM
 General Electric Co., 1285 Boston Ave., Bridgeport 2, Conn.—BT
 General Electric Co., Nela Specialty District, 1 Newark St., Hoboken, N. J.—N
 General Electric Co., Specialty Div., 1001 Wolf St., Syracuse, N. Y.—F, FM, M, R, TH, TT, WM
 General Electronic Mfg. Co., 2225 S. Hoover St., Los Angeles 7, Calif.—OM, TH, O, A
 General Electronics, Inc., 101 Hazel St., Paterson, N. J.—IG
 General Radio Co., 275 Massachusetts Ave., Cambridge 39, Mass.—AM, B, D, FM, IC, MP, IT, MO, S, TA, TM, TF, VT, VM, V, WA, WM, XM, OM
 Geophysical Instrument Co., 1820 N. Nash St., Arlington, Va.—G, MP, VM
 Gibbs, Thomas B. & Co., Delaven, Wis.—TF
 Giannini, G. M. & Co., Inc., Autoflight Instrument Div., 4522 Lankershim Blvd., North Hollywood, Calif.—G
 Gisholt Machine Co., 1125 E. Washington Ave., Madison 3, Wis.—VM
 Globe Industries, Inc., 125 Sunrise Pl., Dayton 7, Ohio—AM, WM
 G-M Laboratories, Inc., 4300 N. Knox Ave., Chicago 41, Ill.—A, G, V
 G. M. Mfg. Co., 50 W. Third St., New York 12, N. Y.—T
 Goodall Electric Mfg. Co., Third & Main St., Ogallala, Neb.—FM, FS, ST, OM
 Graybar Electric Co., Inc., 420 Lexington Ave., New York 17, N. Y.—FM, S
 Grenby Mfg. Co., Plainville, Conn.—B, D, FM, O, VT, WA, QE
 Gruen Watch Co., Time Hill, Cincinnati, Ohio—M
 Gurley, W. & L. E., 514 Fulton St., Troy, New York—TA
 Hammarlund Mfg. Co., Inc., 460 W. 34th St., New York 1, N. Y.—FM
 Hanovia Chemical & Mfg. Equipment, 233 N. J. R. R. Ave., Newark 5, N. J.—L
 Hart Moisture Gauges, Inc., 126 Liberty St., New York 6, N. Y.—MO, O
 Hartford Machine Screw Co., 476 Capitol Ave., Hartford 2, Conn.—MP
 Harvey Radio Laboratories, Inc., 447 Concord Ave., Cambridge 38, Mass.—G, WM
 Hasler-Tel Co., 34 Vesey St., New York 7, N. Y.—TA
 Hathaway Instrument Co., 1315 S. Clarkson St., Denver, Col.—EG, EM, G, PM, TM, TF, VM
 Haydon Mfg. Co., Inc., Forestville, Conn.—TM
 Haydu Bros., P. O. Box 1226, Plainfield, N. J.—N, VG
 Heiland Research Corp., 130 E. Fifth Ave., Denver 9, Colo.—G
 Helipot Corp., 1015 Mission St., So. Pasadena, Calif.—PH
 Herbach & Rademan Co., Mfg. Div., 517 Ludlow, Philadelphia 6, Pa.—R, D, FM, H, IC, IT, IG, PH, TM, VT
 Hercules Electric & Mfg. Co., Inc., 2500 Atlantic Ave., Brooklyn 7, N. Y.—PM
 Hewlett-Packard Co., 395 Page Mill Rd., Palo Alto, Calif.—D, FM, S, TA, TM, TR, VT, VM, WA, WM
 Meyer Products, Inc., 471 Cortlandt St., Belleville 9, N. J.—BT
 Hickok Electrical Instrument Co., 10514 Dupont, Cleveland 8, Ohio—A, FM, G, M, O, R, S, TA, TH, TT, VT, VI, V, W
 Higgins Industries Inc., 2221 Warwick Ave., Santa Monica, Calif.—WM
 Hoffman Engineering Corp., 458 Sexton Bldg., Minneapolis 4, Minn.—C, TM
 Hoffman Radio Corp., 3761 S. Hill St., Los Angeles 7, Calif.—FM
 Holtzer-Cabot, Div. First Industrial Corp., 125 Amory St., Rensbury 19, Mass.—IT, MO
 Hoskins Mfg. Co., 4445 Laxton Ave., Detroit 8, Mich.—TH
 Huber Radio Co., 260 S. Center St., Casper, Wyo.—VM
 Ideal Industries, Inc., 5191 Park Ave., Steamboat, Ill.—IT, TA
 Illinois Testing Laboratories, Inc., 420 N. LaSalle St., Chicago 10, Ill.—"Alnor"—TH, T
 Industrial Instruments, Inc., 17 Pollock Ave., Jersey City 5, N. J.—R, H, IT, MO, MP, O, VT
 Industrial Timer Corp., 115 Edison Pl., Newark 5, N. J.—TM
 Industrial Transformer Corp., 2540 Belmont Ave., New York 58, N. Y.—IT

Instrument Electronics, 253-21 Northern Blvd., Little Neck, L. I., N. Y.—VT, V
 Intex Co., 303 W. 42nd St., New York 18, N. Y.—M, N
 Islip Radio Mfg. Corp., Islip, N. Y.—FM, IT
 Jackson Electrical Instrument Co., 18 S. Patterson Blvd., Dayton, Ohio—B, C, M, TT
 Jarrell-Ash Co., 165 Newbury St., Boston 16, Mass.—G
 J-B-T Instruments, Inc., 441 Chapel St., New Haven 8, Conn.—A, FM, G, O, TH, T, TM, V
 Jefferson, Ray, Inc., 40 E. Merrick Rd., Freeport, L. I., N. Y.—F, FM
 Jennings Radio Mfg. Co., McLaughlin Rd., San Jose 12, Calif.—TH
 Johnson, E. F., Co., Waseca, Minn.—PH
 Jones Motrola Corp., 432 Fairfield Ave., Stamford, Conn.—TA
 Kellogg Switchboard & Supply Co., 6650 S. Cicero Ave., Chicago 38, Ill.—BT, B, FM
 Klett Mfg. Co., 179 E. 87th St., New York, N. Y.—C
 Kluge Electronics Co., 1031 N. Alvarado St., Los Angeles 26, Calif.—FM
 Knights, James, Co., Sandwich, Ill.—FM
 Lampkin Laboratories, Bradenton, Fla.—FM
 Lane-Wells Co., 5610 S. Soto St., Los Angeles 11, Calif.—VM
 Lavoie Laboratories, Matawan-Freehold Rd., Morganville, N. J.—FM, WM
 Lawton Products Co., Inc., 624 Madison Ave., New York 22, N. Y.—FM, QE, VT, WM
 Leeds & Northrup Co., 4901 Stenton Ave., Philadelphia 44, Pa.—B, FM, FS, G, IT, L, O, PH, P, TH, TM
 Leitz, E., Inc., 730 Fifth Ave., New York 19, N. Y.—C, PE, PH
 Lektra Labs., Inc., 30 E. 10th St., New York 3, N. Y.—TM
 Lenkert Electric Co., 1138 Howard St., San Francisco 3, Calif.—TR
 Lepel High Frequency Laboratories, Inc., 39 W. 60th St., New York 23, N. Y.—IT, VG
 Lewis Engineering Co., 52 Rubber Ave., Naugatuck, Conn.—A, G, O, TH, T, V
 Link, Fred M., 125 W. 17th St., New York 11, N. Y.—FM, M
 Link Engineering Co., 13581 Elmira St., Detroit 27, Mich.—ST
 Littelfuse, Inc., 4757 Ravenswood Ave., Chicago 40, Ill.—N, TH
 Litton Engineering Laboratories, P. O. Box 749, Redwood City, Calif.—IG
 Lumentec Electric Co., 407 S. Dearborn St., Chicago 5, Ill.—TM
 Lyman Electronic Corp., 12 Cass St., Springfield, Mass.—H, N, O, TT, VT
 McClintock, O. B., Co., 139 Lyndale Ave., N., Minneapolis 3, Minn.—A, G, MP, M, O, S, V
 McColpin-Christie Corp., 4922 S. Figueroa St., Los Angeles 37, Calif.—BT
 Madison Electrical Products Corp., 78 Main St., Madison, N. J.—"Mepro"—FM, IT, R, TH, TT, VT
 Magnaflex Corp., 5900 Northwest Hwy., Chicago 31, Ill.—F
 Maguire Industries, Inc., 1437 Railroad Ave., Bridgeport, Conn.—B, FM, MO, VT, W, WM, MM
 Maguire Industries, Inc., Electronics Div., 342 W. Putnam Ave., Greenwich, Conn.—FM
 Marion Electrical Instrument Co., Stark Street Gate, Manchester, N. H.—A, F, MP, L, MO, O, VI, V
 Marshall Radio Engineering Laboratories, 5008 Lankershim Blvd., North Hollywood, Calif.—F, M
 Martindale Electric Co., Box 617, Edgewater Branch, Cleveland 7, Ohio—O
 MB Mfg. Co., Inc., Instrument Div., 331 East St., East Haven 11, Conn.—A, AM, BT, G, MP, M, O, QE, S, VM, V
 Measurements Corp., 114 Monroe St., Roonton, N. J.—AM, R, F, IT, MO, O, VT, VM, V, WM
 Menard Corp., 1601 S. Burlington Ave., Los Angeles 6, Calif.—D, FM, H, TR
 Meissner Mfg. Div., Maguire Industries, Inc., Mt. Carmel, Ill.—R
 Mendelsohn Speedgun Co., 457 Bloomfield Ave., Bloomfield, N. J.—TM
 Mepro—Madison Electrical Products Corp.
 Meters, Inc., 915 Rierler Dr., Indianapolis 5, Ind.—A, G, S, V
 Metron Instrument Co., 432 Lincoln St., Denver 9, Colo.—EM, TA
 Mico Instrument Co., 80 Trowbridge St., Cambridge 38, Mass.—HA, WM
 Milico—M. A. Miller Mfg. Co.
 Millen, James, Mfg. Co., Inc., 150 Exchange St., Malden 48, Mass.—FM, WM
 Miller, M. A., Mfg. Co., 1169 E. 43rd St., Chicago 15, Ill.—"Milico"—MP
 Miller, William Corp., 362 Colorado St., Pasadena 2, Calif.—G, VM
 Monarch Mfg. Co., 2014 N. Major Ave., Chicago 39, Ill.—D, VI, OM
 Monitor Piezo Products Co., 815 Fremont Ave., So. Pasadena, Calif.—FM, WM
 Moulis Specialties Co., 1005-1007 W. Washington St., Bloomington, Ill.—VT
 M & Z Industrial Development Co., 32 W. 12th St., Bayonne, N. J.—B, H, IT, MO, VT, V
 National Instrument Co., 248 Walnut St., Newtonville 60, Mass.—TM
 National Research Corp., Vacuum Engineering Div., 100 Brookline Ave., Boston 15, Mass.—VG
 National Union Radio Corp., 57 State St., Newark 2, N. J.—VC

Niagara Electrical Instrument Co., 204-210 Franklin St., Buffalo 2, N. Y.—W
 Nilsson Electrical Laboratory, Inc., 103 Lafayette St., New York 13, N. Y.—G, MP, MO, O
 North American Philips Co., Inc., 100 E. 42nd St., New York 17, N. Y.—FM
 Northern Laboratories, Ltd., 3101 27th Ave., Long Island City 2, N. Y.—H
 Norton Electrical Instrument Co., 85 Hilliard St., Manchester, Conn.—A, BT, B, O, V
 Nurnberg Thermometer Co., Inc., 112 Broadway, Cambridge 42, Mass.—P
 Offner Electronics, Inc., 5320 N. Kedzie Ave., Chicago 25, Ill.—VM
 Pacific Electronics, Sprague at Jefferson St., Spokane, Wash.—F, FM
 Panoramic Radio Corp., 242-250 W. 55th St., New York 19, N. Y.—F, FM, WA
 Partlow Corp., 2 Campion Rd., New Hartford, N. Y.—T
 Permo, Inc., 6415 Ravenswood Ave., Chicago 26, Ill.—MP
 Pfaltz & Bauer, Inc., 350 Fifth Ave., New York, N. Y.—C, G
 Pfanstiel Chemical Co., 104 Lakeview Ave., Waukegan, Ill.—MP
 Philco Corp., Tioga & "C" Sts., Philadelphia 34, Pa.—M, O, R, VT, V
 Photovolt Corp., 35 Madison Ave., New York 16, N. Y.—C, L, PE, RM
 Pickering & Crowe Audio Laboratories, 475 Fifth Ave., New York 17, N. Y.—D
 Polytren Corp., 401 Broadway, New York 13, N. Y.—FM, H, IG, S
 Portable Products Corp., C. J. Tagliabue Div., 550 Park Ave., Brooklyn 5, N. Y.—G, PH, TH
 Potter Instrument Co., 136-56 Roosevelt Ave., Flushing, L. I., N. Y.—FM, IC, TA, TM
 Powers Electronic & Communication Co., New St., Glen Cove, N. Y.—S
 Powers Regulator Co., 2720 Greenview Ave., Chicago, Ill.—T
 Precision Apparatus Co., 92-27 Horace Harding Blvd., Elmhurst, L. I., N. Y.—A, BT, MO, M, O, R, TT, VT, VI, V
 Precision Products Co., 26 Bedford St., Waltham 54, Mass.—MP
 Precision Scientific Co., 1750 N. Springfield Ave., Chicago 47, Ill.—T
 Process & Instruments, 60 Greenpoint Ave., Brooklyn 22, N. Y.—PH
 Pyro—Pyrometer Instrument Co.
 Pyrometer Instrument Co., 103 Lafayette St., New York, N. Y.—"Pyro"—T
 Pyrotron—Bailey Meter Co.
 Radio City Products Co., 127 W. 26th St., New York 1, N. Y.—B, M, O, R, TT, VT, V
 Radio Craftsmen, 1341 S. Michigan Ave., Chicago 5, Ill.—TT
 Radio Frequency Laboratories, Inc., Boonton, N. J.—IC, L, VT
 Radio Specialty Mfg. Co., 403 N. W. 9th St., Portland 9, Ore.—FM
 Radiotechnic Laboratory, 1328 Sherman Ave., Evanston, Ill.—TT
 Rascher & Betzold, Inc., 730 N. Franklin St., Chicago 10, Ill.—F, PH
 Rawson Electrical Instrument Co., 116 Potter St., Cambridge 42, Mass.—A, E, M, TH, TM, V, W
 RCA Victor Division, Radio Corp. of America, Front & Cooper Sts., Camden, N. J.—D, F, FM, FS, R, S, TT, VG, VI
 Readrite Meter Works, 136 E. College Ave., Bluffton, Ohio—A, V
 Rectifier Engineering Co., 1809 E. 7th St., Los Angeles 21, Calif.—BT
 Rehtron Corp., 4313 Lincoln Ave., Chicago 18, Ill.—B, F, M, S, VT, VM
 Reiner Electronics Co., Inc., 152 W. 25th St., New York 1, N. Y.—FM, M, R, VT
 Rek-O-Kut Co., 146 Grand St., New York 13, N. Y.—VI
 Reliance Electric & Engineering Co., Ivanhoe Rd., Cleveland 10, Ohio—TA
 Rice's, Bernard Sons, 325 Fifth Ave., New York 16, N. Y.—WM
 Richards, Arklay S., Co., Inc., 78 Winchester St., Newton Highlands 61, Mass.—TH
 Rieber, Frank, Inc., 11916 W. Pico Blvd., Los Angeles 34, Calif.—FM, TM, TF, VT, WM
 Riggs & Jeffreys, Inc., 73 Winthrop St., Newark 4, N. J.—AM
 Riverbank Laboratories, Geneva, Ill.—TF
 Robinson-Houchin Optical Co., 79 Thurman Ave., Columbus 6, Ohio—FM, FS, PM, S
 Robson-Burgess Co., 5002 N. 30th St., Omaha 11, Neb.—M, TT
 Roller-Smith Div., Realty & Industrial Corp., 1760 W. Market St., Bethlehem, Pa.—A, N, T, V, W
 Rowe Radio Research Laboratory Co., 2422 N. Pulaski Rd., Chicago 39, Ill.—E, IC, MO, O, PM, ST, TA, TM, VT, VM
 Rubicon Co., Ridge Ave. at 35th St., Philadelphia 32, Pa.—B, C, G
 Sanborn Co., 39 Osborne St., Cambridge 39, Mass.—G
 Sangamo Electric Co., 11th & Converse Sts., Springfield, Ill.—A, TA, WH

Saxl Instrument Co., 38-40 James St., East Providence 14, R. I.—EG, EM, VC
 Schuttig & Co., 9th & Kearny Sts., N. E., Washington 17, D. C.—FM, WM
 Scientific Radio Products Co., 738 W. Broadway, Council Bluffs, Iowa—O, VT, V
 Scientific Service Laboratories, 915 Meridian Ave., S. Pasadena, Calif.—SG, VT, L, G, A, PH
 Scovill Mfg. Co., 99 Mill St., Waterbury 91, Conn.—MP
 Senn Corp., New Augusta, Ind.—EG, EM
 Sensitive Research Instrument Co., 9-11 Elm Ave., Mt. Vernon, N. Y.—G, TH, V, W
 Shallcross Mfg. Co., Jackson & Pusey Aves., Collingdale, Pa.—G, MO
 Sherron Electronics Co., 1201 Flushing Ave., Brooklyn 6, N. Y.—H, IT, PH, R, ST, B, D, HA, QU
 Shure Bros., 225 W. Huron St., Chicago 10, Ill.—VM
 Silver Co., McMurdo, 1240 Main St., Hartford 3, Conn.—B, FM, M, O, VT
 Simmonds Aerocessories, Inc., 30 Rockefeller Plaza, New York 20, N. Y.—MM
 Simpson Electric Co., 5216 W. Kinzie St., Chicago, Ill.—A, G, M, V, O, R, TT
 Solar Capacitor Sales Corp., 285 Madison Ave., New York 17, N. Y.—B
 Sorensen & Co., 375 Fairfield Ave., Stamford, Conn.—FM, PH
 S. O. S. Cinema Supply Corp., 449 W. 42nd St., New York 18, N. Y.—S
 Sound Apparatus Co., 233 Broadway, New York 7, N. Y.—FS, S, VT
 Special Electric Labs., 7657 S. Central Ave., Los Angeles 1, Calif.—FM
 Special Products Co., 9215 Brookville Rd., Silver Spring, Md.—SG
 Sperry Gyroscope Co., Inc., Great Neck, L. I., N. Y.—F
 Sprague Products Co., North Adams, Mass.—B
 Standard Electric Time Co., 89 Logan St., Springfield 2, Mass.—IC, TA, TM
 Standard Instruments Corp., 568 Prospect Ave., New York 55, N. Y.—B
 Standard Piezo Co., 127 Cedar St., Carlisle, Pa.—FM
 Steel Herman D., Co., Lafayette Bldg., Philadelphia 6, Pa.—MP
 Sterling Mfg. Co., 9205 Detroit Ave., Cleveland 2, Ohio—A, V, BT
 Stewart-Warner Alomite Corp., 1826 Diversey Pkwy., Chicago 14, Ill.—A, TA
 Sticht, Herman H., Co., Inc., 27 Park Pl., New York 7, N. Y.—A, AF, B, E, IT, MO, O, TA, V, WH, W
 Stoddart Aircraft Radio Co., 6644 Santa Monica Blvd., Hollywood 38, Calif.—F
 Stoelting, C. H., Co., 424 N. Homan Ave., Chicago 24, Ill.—VG, TF
 Stokes, F. J., Machine Co., 6054 Tabor Rd., Philadelphia 20, Pa.—VG
 Stokes, Jos., Rubber Co., Taylor & Webster Sts., Trenton 4, N. J.—TF
 Stupakoff Ceramic & Mfg. Co., Latrobe, Pa.—TH
 Sun Mfg. Co., 6323 Avondale Ave., Chicago 31, Ill.—A, G, MO, O, S, TA, TH, VG, V
 Sundt Engineering Co., 4763 Havenswood Ave., Chicago, Ill.—TH
 Superior Instruments Co., 227 Fulton St., New York 7, N. Y.—A, O, VT, V
 Supreme Instruments Corp., Greenwood, Miss.—A, BT, M, MO, O, R, SG, TT, V, VT
 Swiss Jewel Co., Lafayette Bldg., Philadelphia 6, Pa.—MP
 Sylvania Electric Products, Inc., 500 Fifth Ave., New York 18, N. Y.—A, EM, FM, IG, PE, PM, TH, TT, VG, VT
 Takk Corp., 28 W. Market St., Newark, Ohio—IT, MO
 Teller & Cooper, 75 Front St., Brooklyn 1, N. Y.—D, IC, TM
 Taylor Tubes, Inc., 2312 Wabansia Ave., Chicago 47, Ill.—IG, VG
 Tech Laboratories, 337 Central Ave., Jersey City 7, N. J.—AM, B, DC, EH, VC, MO
 Technical Apparatus Co., 1171 Tremont St., Boston 20, Mass.—H, IT, MO, TT, VT
 Technical Devices Corp., Beaufort & Eagle Rock Ave., Roseland, N. J.—VT
 Techno-Scientific Co., 901 Nepperhan Ave., Yonkers 3, N. Y.—EH
 Telectric Co., 1251 Mound Ave., Racine, Wis.—MP
 Telegregister Corp., 157 Chambers St., New York 7, N. Y.—TM
 Televisio Products, Inc., 6533 Olmstead Ave., Chicago, Ill.—B, FM, WA, VM, VT
 Telicon Corp., 851 Madison Ave., New York 21, N. Y.—FM
 Thermionic Engineering Corp., 32 W. 12th St., Bayonne, N. J.—B, H, IG
 Thompson, John E. Co., 1440 W. 47th St., Chicago 9, Ill.—E, M, O, VT
 Thwing-Albert Instrument Co., Penn St., & Pulaski Ave., Philadelphia 44, Pa.—AF, B, G, MP, O, PH, TH, T
 Tong-Test—Columbia Electric Mfg. Co.
 Transmitter Equipment Mfg. Co., Inc., 345 Hudson St., New York 14, N. Y.—F, FM, H, S, VI, WM
 Trimount Instrument Co., 37 W. Van Buren, Chicago 5, Ill.—PM, TM, VM
 Triplett Electrical Instrument Co., Harmon Rd., Bluffton, Ohio—A, M, O, R, S, TH, TT, V, W
 Triumph Mfg. Co., 913 W. Van Buren St., Chicago 7, Ill.—BT, M, O, R, TT
 Universal Electronic Labs., Inc., 44 W. 18th St., New York, N. Y.—B
 Universal X-Ray Products, Inc., 1800 N. Francisco Ave., Chicago 47, Ill.—TH, TM, TF, VG
 U. S. Gauge Co., Sellersville, Pa.—A, BT, PM, T, VG, V

U. S. Television Mfg. Corp., 3 W. 61st St., New York 23, N. Y.—IT
 Wadsworth Watch Case Co., Inc., Dayton, Ky.—MP
 Walker, Robert, Inc., 403 W. 8th St., Los Angeles 14, Calif.—FM, FR, M, O, PM, TH
 Wallace & Tiernan Products, Inc., Main & Mill Sts., Belleville 9, N. J.—PH
 Warren Telechron Co., Ashland, Mass.—TM
 Waterbury Companies, Inc., 835 S. Main St., Waterbury 90, Conn.—MP
 Waterman Products Co., Inc., 2445-63 Emerald St., Philadelphia 25, Pa.—B, D, VT, W, WA
 Waugh Laboratories, 420 Lexington Ave., New York 17, N. Y.—EG
 Weksler Thermometer Corp., 52 W. Houston St., New York, N. Y.—PM, T, VG
 Welch, W. M. Mfg. Co., 1515 Sedgwick St., Chicago 10, Ill.—A, G, M, O, PH, S, TA, TF, VG, WH, W
 Weltron Co., 19500 W. Eight Mile Rd., Detroit 19, Mich.—IC, TA, TT
 Western Electric Co., 195 Broadway, New York 7, N. Y.—S
 Westinghouse Elec. Corp., Meter Div., 95 Orange St., Newark 1, N. J.—A, AF, E, M, O, P, R, TA, TH, TM, V, WH, W
 Westinghouse Elec. Corp. East Pittsburgh, Pa.—A, AF, AM, BT, EG, EM, E, F, FM, FS, G, H, IC, MP, IT, IG, MO, M, O, PE, P, S, TA, TH, TM, VM, VI, V, WH, W
 Weston Electrical Instrument Corp., 614 Frelinghuysen Ave., Newark 5, N. J.—A, AM, BT, FM, G, IT, L, MO, M, O, P, R, S, TA, T, TT, VI, V, W
 Weymouth Instrument Co., 1440 Commercial St., East Weymouth 89, Mass.—FM, MP, WM
 Wheeler Instruments Co., 847 W. Harrison St., Chicago 7, Ill.—A
 White Research, 899 Boylston St., Boston Mass.—VT
 Winslow Co., 9 Liberty St., Newark 5, N. J.—B, G, IG, MO, O, PH, TH, T, VG
 Zernickow, O. Co., 15 Park Row, New York 7, N. Y.—TA

(21) Metal for Radio



AluminumA
 Aluminum tubingAT
 BariumBA
 BearingsBG
 BerylliumBR
 BrassB
 Brass tubingBT
 Carbon & GraphiteCA
 Copper tubingCT
 Core materials, laminatedCM
 Core materials, powderedCP
 Die castingsDC
 Flexible metal hoseFH
 Foils, tin, lead, etc.FO
 Iron (SVEA metal)I
 Lead, tin alloysLT
 Magnesium alloysMA
 Metal bellowsMB
 Metal coated steelCS
 Metal finishing serviceMF
 MolybdenumM
 Monel tubingsML
 NickelN
 Nickel tubingNT
 Permanent magnetsPM
 PlatinumP
 Porous bearing metalsPB
 Screw machine productsSP
 Sheet metalSH
 Silver brazing alloysSB
 Silver & compoundsAG
 Spring contact metalsSC
 StampingsS
 Stainless steelST
 Steel tubingFT
 TantalumTA
 Thermostatic metalsTM
 TungstenT
 Wire screen clothWC
 ZirconiumZ

Ace Mfg. Corp., Erie Ave. at "K" St., Philadelphia 24, Pa.—IG, S
 Acklin Stamping Co., 1923 Nebraska Ave., Toledo 7, Ohio—S
 Acme Tool & Die Co., 426 Ingle St., Evansville 8, Ind.—S
 Adel Precision Products Corp., 10777 Van Owen St., Burbank, Calif.—S
 Agalov Tubing Co., 75 West St., New York 6, N. Y.—ET
 Aircraft-Marine Products, Inc., 1523 N. 4th St., Harrisburg, Pa.—S

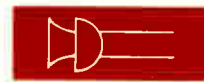
Aircraft Screw Products Co., Inc., 47-23 35th St., Long Island City 1, N. Y.—SP
 Allegheny Ludlum Steel Corp., Brackenridge, Pa.—CM, ST
 Allmetal Screw Products Co., 33 Greene St., New York 13, N. Y.—SP
 Alpha Metals, Inc., 363 Hudson Ave., Brooklyn 1, N. Y.—FO, LT
 Aluminum Co. of America, Oliver Bldg., Pittsburgh, Pa.—A, AT, MA
 Aluminum Finishing Corp., 1119 E. 22nd St., Indianapolis 2, Ind.—A, MF
 Aluminum Goods Mfg. Co., 1512 Washington St., Manitowoc, Wis.—S
 American Brass Co., 414 Meadow St., Waterbury 88, Conn.—B, BT, CT, DC, H, S
 American Electro Metal Corp., 320 Yonkers Ave., Yonkers, N. Y.—M, T
 American Materials Co., 150 Nassau St., New York 7, N. Y.—A, AT, BG, B, BT, CT, ST, FT
 American Nut & Bolt Fastener Co., 2029 Duerr St., Pittsburgh 12, Pa.—S
 American Platinum Works, N. J. R. R. Ave. at Oliver St., Newark 5, N. J.—SB, AG, P
 American Radio Hardware Co., 152-4 MacQueston Pkwy., Mt. Vernon, N. Y.—SP, SC, S
 American Rolling Mill Co., Curtis St., Middletown, Ohio—CM, CS, ST
 Andrews & Perillo, 39-30 Crescent St., Long Island City, N. Y.—S
 Apollo Metal Works, S. Oak Park Ave. at 66th Pl., Chicago 49, Ill.—CS
 Arnold Engineering Co., 147 E. Ontario St., Chicago 11, Ill.—PM
 Atlas Metal Stamping Co., 3801 Castor Ave., Philadelphia 21, Pa.—S
 Auburn Heights Mfg. Co., 2481 Leach Rd., Pontiac, Mich.—SP
 Austin, O., Co., 335 Throop Ave., Brooklyn, N. Y.—S
 Bailey Co., Inc., 21 Water St., Amesbury, Mass.—S
 Baker & Co., Inc., 113 Astor St., Newark 5, N. J.—P, SH, AG, TM, WC
 Barnes Co., Wallace, P. O. Box 1521, Bristol, Conn.—S
 Bay State Stamping Co., 380 Chandler St., Worcester 1, Mass.—S
 Bell Radio & Television, 125 E. 46th St., New York 17, N. Y.—CM, PM
 Belmont Smelting & Refining Works, 330 Belmont Ave., Brooklyn 7, N. Y.—A, BA, BR, B, DC, FO, LT, MA, M, N, SB, TA, T
 R. H. Bird & Co. Inc., 23 Moody St., Waltham, Mass.—BG
 Bossert Co., Inc., 1002 Oswego St., Utica 1, N. Y.—S, ST
 Brainin, C. S. Co., 233 Spring St., New York 13, N. Y.—TM
 Bridgeport Brass Co., Grand St., Bridgeport 2, Conn.—B, CT
 Buchmann Spark-Wheel Corp., 4-20 47th Ave., Long Island City 1, N. Y.—SP
 Bundy Tubing Co., 10951 Fern Ave., Detroit 13, Mich.—ML, NT, FT
 Bunting Brass & Bronze Co., 715 Spencer St., Toledo 9, Ohio—BG
 Bussey Pen Products Co., 5151 W. 65th St., Chicago 38, Ill.—S, WC
 Callite Tungsten Corp., 540 39th St., Union City, N. J.—M, NT, SP, SB, AG, SC, TM, T
 Carbone Corp., 400 Myrtle Ave., Boonton, N. J.—CA
 Chace Co., Wm., 1630 Beard Ave., Detroit 9, Mich.—MA
 Chase Brass & Copper Co., 236 Grand St., Waterbury 91, Conn.—B, BT, CT, DC, SP, S, WC
 Chicago Metal Hose Corp., 1315 S. Third Ave., Maywood, Ill.—CT, H, MB
 Cinadugrahn Corp., 2 Sellenk St., Stamford, Conn.—PM
 Cleveland Tungsten, Inc., 10200 Meech Ave., Cleveland 5, Ohio—T
 Cleveland Wire Cloth & Mfg. Co., 3573 E. 78th St., Cleveland 5, Ohio—WC
 Clifton Products, Inc., Blackbrook Rd., Painesville, Ohio—BR
 Cohn, Sigmond & Co., 44 Gold St., New York 7, N. Y.—P
 Congress Tool & Die Co., Congress Die Casting Div., 3750 E. Outer Dr., Detroit, Mich.—DC, S
 Contract Specialties Co., 1743 Labrosse St., Detroit 16, Mich.—S
 Corbin Screw Div., American Hardware Corp., High, Myrtle & Grove Sts., New Britain, Conn.—SP
 Crescent Industries, Inc., 4140 Belmont Ave., Chicago 41, Ill.—S
 Crowley, Henry L. & Co., Inc., 1 Central Ave., West Orange, N. J.—BG, CM, CP, PM, PB
 Crucible Steel Co. of America, 405 Lexington Ave., New York 17, N. Y.—PM, ST
 Cundy-Betoney Co., Inc., Bradlee St., Hyde Park, Boston 36, Mass.—SP
 Dahlstrom Metallic Door Co., Buffalo & E. Second, Jamestown, N. Y.—S
 Dalmo Victor, Div. of Goldfield Consolidated Mines Co., 1414 El Camino Real, San Carlos, Calif.—MA
 Dayton Acme Co., 930 York St., Cincinnati 14, Ohio—S
 Dayton Rogers Mfg. Co., 2835 Twelfth Ave. S., Minneapolis 7, Minn.—S
 Diebel Die & Mfg. Co., 3658 N. Lincoln Ave., Chicago 13, Ill.—S
 Disston, Henry & Sons, Inc., Tacony, Philadelphia 85, Pa.—ST
 Division Lead Co., 836 W. Kinzie St., Chicago 22, Ill.—DC, FO, LT, SB, AG
 Doehler-Jarvis Corp., Robertson St., Batavia, N. Y.—A, BG, B, DC, LT, MA, MF, S

Dollin Corp., 600 S. 21st St., Irvington 11, N. J.—DC
 Dover Industries, Inc., 2029 N. Campbell Ave., Chicago, Ill.—CS, MF
 Dow Chemical Co., Midland, Mich.—MA
 Driver-Harris Co., Middlesex St., Harrison, N. J.—N
 Easyflow—Handy & Harman
 Edwards, T. J., Inc., 210 South St., Boston 5, Mass.—S
 Electronic Supply Co., 207 Main St., Worcester 8, Mass.—S
 Engineering Co., 27 Wright St., Newark, N. J.—SP, S
 Ericsson Screw Machine Products Co., Inc., 25 Lafayette St., Brooklyn 1, N. Y.—SP
 Fafnir Bearing Co., Booth St., New Britain, Conn.—BG
 Fairmont Aluminum Co., Fairmont, W. Va.—A, AT
 Fansteel Metallurgical Corp., 2200 Sheridan Rd., N. Chicago, Ill.—CP, M, SC, TA, T
 Fischman Co., 10th St., & Allegheny Ave., Philadelphia 33, Pa.—B, S, ST
 Follansbee Steel Corp., 3rd & Liberty Ave., Pittsburgh, Pa.—SH
 Foote Mineral Co., 12 E. Chelton Ave., Philadelphia 44, Pa.—M, ST, T, Z
 Gardiner Mfg. Co., 2711 Union St., Oakland 7, Calif.—S
 Gardiner Metal Co., 4820 S. Campbell Ave., Chicago 32, Ill.—I, T
 General Aniline & Film Corp., Special Products Sales Dept., 270 Park Ave., New York 17, N. Y.—CP
 General Magnetic Corp., 2126 E. Fort St., Detroit 7, Mich.—PM
 General Plate Div., Metals & Controls Corp., Attleboro, Mass.—TM, CS, SC
 Glaser Lead Co., Inc., 31 Wyckoff Ave., Brooklyn 27, N. Y.—FO, LT, SF
 Goat Metal Stampings, Inc., 314 Dean St., Brooklyn 17, N. Y.—S
 Goldsmith Bros. Smelting & Refining Co., 58 E. Washington St., Chicago 2, Ill.—BG, P, SB, AG
 Grammes, L. F. & Sons, Inc., 392 Union St., Allentown, Pa.—S
 Graphalloy—Graphite Metallizing Corp.
 Graphite Metallizing Corp., 1055 Nepperhan Ave., Yonkers, N. Y.—“Graphalloy”—CA
 Great Metal Mfg. Corp., 5-13 Wyckoff Ave., Brooklyn 6, N. Y.—S
 Greene, C. G., Mfg. Co., Warren, Pa.—S
 Gregory Mfg. Co., 67 Franklin St., New Haven 11, Conn.—S
 Greist Mfg. Co., 430 Blake St., New Haven 15, Conn.—SP, S
 Gussack Machined Products Co., 10-20 45th Rd., Long Island City 1, N. Y.—SP, S
 Hall, C. M. Lamp Co., 1035 E. Hancock Ave., Detroit 7, Mich.—DC, S
 Handy & Harman, 82 Fulton St., New York 7, N. Y.—“Easyflow”—BR, AG
 Hardware Specialties Mfg. Co., P. O. Box 844, Bridgeport 1, Conn.—SP, S
 Hartford Machine Screw Co., 476 Capitol Ave., Hartford 2, Conn.—SP
 Harvey Machine Co., Inc., 6200 Avalon Blvd., Los Angeles 3, Calif.—SP, S
 Maydu Bros., P. O. Box 1226, Plainfield, N. J.—M, N, S, T
 Heyman Mfg. Co., Michigan Ave., Kenilworth, N. J.—S
 High Tension Co., Inc., 36 N. Main St., Phillipsburg, N. J.—CT
 Hommel Co., 0., 209 Fourth Ave., Pittsburgh, Pa.—PO, SB, AG
 Hoskins Mfg. Co., 4445 Lawton Ave., Detroit 8, Mich.—N
 Hunter Pressed Steel Co., Lansdale, Pa.—S
 Hydraulic Tool & Die Corp., 4625 Third Ave., New York 57, N. Y.—S
 ICA—Insuline Corp. of America
 Indiana Steel Products Co., 6 N. Michigan, Chicago 2, Ill.—PM
 Industrial Screw & Supply Co., 717 W. Lake St., Chicago 6, Ill.—SP, S
 Instrument Glass & Mirror Co., 383 Pearl St., Brooklyn 1, N. Y.—MF
 Insuline Corp. of America, 36-02 35th Ave., Long Island City 10, N. Y.—“ICA”—A, CS, S
 International Nickel Co., Inc., 67 Wall St., New York 5, N. Y.—ML, N, NT
 Jelliff, C. O. Mfg. Corp., Pequot Rd., Southport, Conn.—WC
 Johnston Tin Foil & Metal Co., 6100 S. Broadway, St. Louis 11, Mo.—FO
 Kellogg Switchboard & Supply Co., 6650 S. Cicero Ave., Chicago 38, Ill.—CM, S
 Kester Solder Co., 4201 Wrightwood Ave., Chicago 39, Ill.—I, T
 Keystone Carbon Co. Inc., 1935 State St., St. Marys, Pa.—CA, PB
 Keystone Electronics Co., 50-52 Franklin St., New York 13, N. Y.—SP
 King Laboratories, Inc., 205 Oneida St., Syracuse 4, N. Y.—BA, MA, S, ST
 Kling Metal Spinning Co., 174 Centre St., New York 13, N. Y.—S
 Kollath Mfg. Co., 4601 W. Addison St., Chicago, Ill.—SP, S
 Kolton Electric Mfg. Co., 123 New Jersey Railroad Ave., Newark 5, N. J.—S
 Krischer Metal Products Co., 631-637 Kent Ave., Brooklyn 11, N. Y.—S
 Landis & Gyr, Inc., 104 Fifth Ave., New York, N. Y.—BG
 Lansing Stamping Co., 1159 S. Pennsylvania Ave., Lansing, Mich.—S
 Linick, Leslie L., 29 E. Madison St., Chicago, Ill.—SB

Little Falls Alloys, Inc., 189 Caldwell Ave., Paterson 1, N. J.—BI, CT
 Magna Mfg. Co., Inc., 444 Madison Ave., New York 22, N. Y.—A
 Makepeace, D. E. Co., Pine & Dunham Sts., Attleboro, Mass.—CM, P, SB, AG, SC
 Mallory, P. R., & Co., Inc., 3029 E. Washington St., Indianapolis 6, Ind.—M, SC, T
 Matthews & Co., Jas. H., 3729 Belmont Ave., Chicago 18, Ill.—DC, S
 Mendelsohn Speedgun Co., 457 Bloomfield Ave., Bloomfield, N. J.—BT
 Mephram, Geo. S. Corp., 2001 Lynch Ave., E. St. Louis, Ill.—“Mephram”—CP
 Metal Textile Corp., 4 Central Ave., West Orange, N. J.—WC
 Meyers Safety Switch Co., Inc., 423 Tehama St., San Francisco 3, Calif.—S
 Micro-Ferrocatt Div., Maguire Industries, Inc., Fairfield Ave., Stamford, Conn.—CP, PB, SP, ST
 Mid-West Screw Products Co., 3662 Park Ave., St. Louis 10, Mo.—SP
 Miniature Precision Bearings, Carpenter St., Keene, N. H.—BG
 National Carbon Co., Inc., 30 E. 42nd St., New York 18, N. Y.—CA
 National Die Casting Co., 600 N. Albany Ave., Chicago 12, Ill.—DC
 National Moldite Co., 25 Montgomery St., Hillsdale 5, N. J.—CM, CP
 National Screw & Mfg. Co., 2440 E. 75th St., Cleveland 4, Ohio—SP
 Ney, J. M. Co., 71 Elm St., Hartford 1, Conn.—P
 Noblitt Sparks Industries, Inc., Columbus, Ind.—S
 North American Philips Co., Inc., 100 E. 42nd St., New York 17, N. Y.—M, T
 Northern Mfg. Co., Inc., 36 Spring St., Newark 2, N. J.—T
 Oiljak Mfg. Co., Inc., Montclair, N. J.—S, MF
 OK Machine Co., 2131 Fairfield Ave., Ft. Wayne 6, Ind.—SP, S
 Olympic Tool & Mfg. Co., Inc., 39 Chambers St., New York 7, N. Y.—S
 Orange Screen Co., 615 Valley St., Maplewood, N. J.—S
 Osgap Mfg. Co., Inc., 207 W. Saratoga St., Baltimore 1, Md.—P, AG
 Paroloy Co., 600 S. Michigan Ave., Chicago 5, Ill.—P, SB, AG
 Patent Button Co., 41 Brown St., Waterbury 88, Conn.—MF
 Patton-MacGuey Co., 17 Virginia Ave., Providence 5, R. I.—S
 Paul & Beekman Div. of Portable Products Corp., 1301 Courtland St., Philadelphia 40, Pa.—S
 Peck Spring Co., 20 Grove St., Plainville, Conn.—SP
 Penn Fibre & Specialty Co., 2024 to 2030 E. Westmoreland St., Philadelphia 34, Pa.—S
 Phelps Dodge Copper Products Corp., 40 Wall St., New York 5, N. Y.—BT, CT, NT
 Philadelphia Rust Proof Co., 3227 Frankford Ave., Philadelphia 34, Pa.—MF
 Pilot Industries, Inc., 202 E. 44th St., New York 17, N. Y.—SP
 Plastic Metals, Inc., 155 Bridge St., Johnstown, Pa.—CT, I, PB
 Plume & Atwood Mfg. Co., 470 Bank St., Waterbury 88, Conn.—B, S
 Pollak Mfg. Co., Arlington, N. J.—S
 Porter Metal Products, 121 Ingraham St., Brooklyn 6, N. Y.—S
 Precimet Laboratories, 64 Fulton St., New York 7, N. Y.—MF
 Precision Tube Co., 3828 Terrace St., Philadelphia 28, Pa.—AT, BT, CT, NT
 Pyroferic Co., 175 Varlek St., New York 14, N. Y.—CP
 Quality Hardware & Machine Corp., 5849 N. Ravenswood Ave., Chicago 26, Ill.—S
 Raymond Mfg. Co., Div. of Associated Spring Corp., Corry, Pa.—S
 RCA Victor Division, Radio Corp. of America, Front & Cooper Sts., Camden, N. J.—CS, MF, M, N, P, T
 Red Arrow Electric Corp., 100 Coit St., Irvington 11, N. J.—S
 Republic Steel Corp., Republic Bldg., Cleveland 1, Ohio—CM, CS, FT
 Revere Copper & Brass, Inc., 230 Park Ave., New York 32, N. Y.—A, AT, B, BT, CT, MA, SB, S, FT
 Reynolds Metals Co., 2500 S. Third St., Louisville 1, Ky.—A, AT, FO
 Riverside Metal Co., Riverside, N. J.—BR, SC, TM
 Rusnreen Mfg. Co., 14262 Birwood Ave., Detroit 4, Mich.—S
 Rustless Iron & Steel Corp., 3408 E. Chase St., Baltimore 13, Md.—ST
 Santay Corp., 351 N. Crawford Ave., Chicago 24, Ill.—S
 Scovill Mfg. Co., 99 Mill St., Waterbury 91, Conn.—B, BT, CT, SP, S
 Screenmakers, Inc., 64 Fulton St., New York 7, N. Y.—MF
 Sexton Can Co., Inc., 31 Cross St., Everett 49, Mass.—S
 Sner Carbon Co., St. Marys, Pa.—CA
 Sner Resistor Corp., Theresia St., St. Marys, Pa.—CP
 Spencer Wire Co., 68 Pleasant St., W. Brookfield, Mass.—BR, ST
 Snerman Metal Specialties, 2199 E. 21st St., Brooklyn 29, N. Y.—S
 Stackpole Carbon Co., P. O. Box 327, St. Marys, Pa.—CA

Stamford Metal Specialty Co., 428 Broadway, New York 13, N. Y.—S
 Standard Engineering Laboratories, 40 S. Oak Knoll Ave., Pasadena 1, Calif.—S
 Steel Mill Div., Simmonds Saw & Steel Co., Lockport, N. Y.—PM
 Stewart-Warner Alemite Corp., 1826 Diversey Pkwy., Chicago 14, Ill.—DC, SP, S
 Superior Flake Graphite Co., 33 S. Clark St., Chicago 3, Ill.—CA
 Superior Tube Co., Norristown, Pa.—AT, CT, I, ML, NT, ST, FT
 Summerill Tubing Co., Bridgeport, Pa.—CS, ML, N, NT, FT
 Swedish Iron & Steel Corp., 17 Battery Pl., New York, N. Y.—I, PM
 Sylvania Electric Products, Inc., 500 Fifth Ave., New York 18, N. Y.—T
 Taje Steel & Wire Div., American Chain & Cable Co., Inc., Bridgeport 2, Conn.—ST
 Taylor Wharton Iron & Steel Co., High Bridge, N. J.—PM
 Thermador Electric Mfg. Co., 5119 S. Riverside Dr., Los Angeles 22, Calif.—S
 Thomas & Skinner Steel Products Co., 1120 E. 23rd St., Indianapolis 5, Ind.—CM, PM, S
 Titan Metal Mfg. Co., Bellefonte, Pa.—DC, SP
 Torit Mfg. Co., 292 Walnut St., St. Paul 2, Minn.—MF
 Tubing Seal-Cap, Inc., 2810 E. 11th St., Los Angeles 23, Calif.—SP
 Tubular Rivet & Stud Co., Wollaston 70, Mass.—SP
 Uniform Tubes, Shurs Lane & Lauriston St., Philadelphia 28, Pa.—AT, BT, CT, NT, FT
 United Radio Mfg. Co., 191 Greenwich St., New York, N. Y.—I
 U. S. Rubber Co., 1230 Sixth Ave., New York 20, N. Y.—CT
 Van Huffel Tube Corp., Warren, Ohio—FT
 Veeder-Root, Inc., Hartford, Conn.—DC
 Wadsworth Watch Case Co., Inc., Dayton, Ky.—S, SP
 Waterbury Companies, Inc., 835 S. Main St., Waterbury 90, Conn.—S
 Webster-Chicago Corp., 5610 Bloomingdale Ave., Chicago 39, Ill.—S
 Weirton Steel Co., Electrical Dept., Main St., Weirton, W. Va.—PO
 Warner, R. D. Co., Inc., 295 Fifth Ave., New York 16, N. Y.—A, AT
 Western Brass Mills, East Alton, Ill.—B, S
 Westinghouse Elec. Corp., East Pittsburgh, Pa.—BG, CM, LT, M, SB, TM, T
 Whitehead Stamping Co., 1661 W. Lafayette Blvd., Detroit 10, Mich.—S
 Wickwire Spencer Metallurgical Corp., 260 Sherman Ave., Newark 5, N. J.—M, ST, T, WC
 Wildberg Bros. Smelting & Refining Co., 742 Market St., San Francisco 2, Calif.—P, SB, AG
 Willor Mfg. Corp., 794 E. 140th St., New York 54, N. Y.—CS, S
 Wilson, H. A. Co., 105 Chestnut St., Newark 5, N. J.—P, AG, TM, T
 Winslow Co., 9 Liberty St., Newark 5, N. J.—AG
 Worcester Pressed Steel Co., Worcester, Mass.—S
 Wrought Washer Mfg. Co., 2100 South Bay St., Milwaukee 7, Wis.—S
 Wynn Mfg. Div., Hudson Supply Co., 401 N. 27th St., Richmond 23, Va.—SP
 Youngstown Pressed Steel Co., Warren, Ohio—S

(122) Microphones



- CarbonCAR
- CondenserCON
- ConnectorsCTR
- ContactCT
- CrystalCRY
- DynamicDYN
- Hearing aid microphonesHA
- SpringsSPR
- StandsSTD
- StethophonesS
- Telephone handsetsT
- VelocityVEL

American Earphone Co., 10 E. 43rd St., New York 17, N. Y.—CAR
 American Microphone Co., Inc., 1917 S. Western Ave., Los Angeles, Calif.—CAR, CON, CTR, CRY, DYN, SPR, STD, VEL
 Amperite Co., 561 Broadway, New York, N. Y.—CTR, CT, DYN, STD, VEL
 Art Specialty Co., 3245 W. Lake St., Chicago, Ill.—STD
 Astatic Corp., Cor. Harbor & Jackson Sts., Conneaut, Ohio—CT, CRY, DYN, STD

Atlas Sound Corp., 1443 39th St., Brooklyn 18, N. Y.—STD
 Auth Electric Specialty Co., Inc., 422-430 E. 53rd St., New York 22, N. Y.—T
 Automatic Electric Co., 1033 W. Van Buren St., Chicago 7, Ill.—CAR, T
 Aviometer Corp., 370 W. 35th St., New York 1, N. Y.—CAR, CON, CTR, CT, DYN, S, T
 Barker & Williamson, Upper Darby, Pa.—CON
 Barnes Co., Wallace, P. O. Box 1521, Bristol, Conn.—SPR
 Bell & Howell Co., 7100 McCormick Rd., Chicago 45, Ill.—CRY
 Bendix Radio Division, Bendix Aviation Corp., East Joppa Rd., Baltimore 4, Md.—CAR, DYN, T
 Berger Electronics, 109-01 72nd Rd., Forest Hills, N. Y.—CON, DYN
 Bogen, David Co., Inc., 663 Broadway, New York 12, N. Y.—STD
 Boom Electric & Amplifier Co., Inc., 1227 W. Washington Blvd., Chicago 7, Ill.—DYN
 Brush Development Co., 3405 Perkins Ave., Cleveland 14, Ohio—CRY, HA, STD
 Cambridge Instrument Co., Inc., 3005 Grand Central Terminal, New York 17, N. Y.—S
 Connecticut Telephone & Electric, Div. Great American Industries, Inc., Meriden, Conn.—CAR, T
 Dazor Mfg. Co., 4483 Duncan Ave., St. Louis 10, Mo.—STD
 Eastern Mike-Stand Co., 56 Christopher Ave., Brooklyn 12, N. Y.—STD
 Electronic Plumbing Corp., 311 Nepperhan Ave., Yonkers 2, N. Y.—CTR
 Electro-Voice, Inc., P.O. Box 897, South Bend 24, Ind.—CAR, CON, CTR, CT, CRY, DYN, SPR, STD, S, T, VEL
 Erwood Co., 223 W. Erie St., Chicago 10, Ill.—CRY, DYN, STD
 Executone, Inc., 415 Lexington Ave., New York 17, N. Y.—DYN, STD
 Faraday Electric Corp., Adrian, Mich.—T
 Federal Telephone & Radio Corp., 200 Mt. Pleasant Ave., Newark 4, N. J.—CAR, T
 General Cement Mfg. Co., 919 Taylor Ave., Rockford, Ill.—CAR, SPR
 Graybar Electric Co., Inc., 420 Lexington Ave., New York 17, N. Y.—CAR, CON, DYN, STD, T, VEL
 Hunter Pressed Steel Co., Lansdale, Pa.—SPR
 Kaar Engineering Co., 619 Emerson St., Palo Alto, Calif.—CAR
 Kellogg Switchboard & Supply Co., 6650 S. Cleo Ave., Chicago 38, Ill.—CAR, CON, CTR, CT, SPR, STD, T
 Kiegl Bros. Universal Electric Stage Lighting Co., Inc., 321 W. 50th St., New York 19, N. Y.—CTR
 Lektra Labs., Inc., 30 E. 10th St., New York 3, N. Y.—DYN
 Magnavox Co., Ft. Wayne 4, Ind.—CAR
 Manross, F. N. & Sons, Div. Associated Spring Corp., Bristol, Conn.—SPR
 Meletron Corp., 950 N. Highland Ave., Los Angeles 38, Calif.—STD
 Miles Reproducer Co., Inc., 812 Broadway, New York 3, N. Y.—CAR, CON, CT, DYN, STD, T
 Molded Insulation Co., Aircraft Control Div., 335 E. Price St., Philadelphia 44, Pa.—T
 North Electric Mfg. Co., Box 417, Gallon, Ohio—T
 Olympic Tool & Mfg. Co., Inc., 39 Chambers St., New York 7, N. Y.—STD
 Operadio Mfg. Co., St. Charles, Ill.—DYN
 Permoflux Corp., 4900 W. Grand Ave., Chicago 39, Ill.—DYN, T
 Powers Electronic & Communication Co., New St., Glen Cove, N. Y.—DYN
 Raco Electric Co., Inc., 52 E. 19th St., New York 3, N. Y.—DYN, STD
 Rauland Corp., 4245 N. Knox Ave., Chicago 41, Ill.—CRY, DYN, VEL
 RCA Victor Division, Radio Corp. of America, Front & Cooper Sts., Camden, N. J.—CAR, CTR, CRY, DYN, STD, VEL
 Reeves Sound Laboratories, Div. Reeves-Ely Laboratories, Inc., 62 W. 47th St., New York, N. Y.—STD
 Remler Co., Ltd., 2101 Bryant St., San Francisco 10, Calif.—DYN, T
 Robinson-Houchin Optical Co., 79 Thurman Ave., Columbus 6, Ohio—S
 Shure Bros., 225 W. Huron St., Chicago 10, Ill.—“Unidyne”—“Uniplex”—CAR, CTR, CRY, DYN, HA, STD, S
 Simpson, Mark Mfg. Co., 188 W. 4th St., New York 5, Ill.—CAR
 Sonata Products Co., 624 S. Michigan Ave., Chicago 5, Ill.—CAR
 Sonotone Corp., Saw Mill River Rd., Elmsford, N. Y.—CT, CRY
 Special Products Co., 9115 Brookville Rd., Silver Spring, Md.—STD
 Stromberg-Carlson Co., 100 Carlson Rd., Rochester 3, N. Y.—CAR, CTR, CRY, DYN, STD, T, VEL
 Telephonics Corp., 350 W. 31st St., New York 1, N. Y.—CAR, T
 Trimm, Inc., 1770 W. Berteau Ave., Chicago 13, Ill.—STD
 Turner Co., 909 17th St., N.E., Cedar Rapids, Iowa—CT, CRY, DYN, HA, STD, T
 Unidyne—Shure Bros.
 Uniplex—Shure Bros.
 Universal Microphone Co., 424 Warren Lane, Inglewood, Calif.—CAR, DYN, STD, T, VEL

University Laboratories, 225 Varick St., New York 14, N. Y.—CAR, DYN
 Waltham Screw Co., 77 Rumford Ave., Waltham, Mass.—CTR
 Western Electric Co., 195 Broadway, New York 7, N. Y.—DYN
 Western Sound & Electric Laboratories, Inc., 3512 W. St. Paul Ave., Milwaukee, Wis.—STD

(23) Motors & Generators



Alternators	.....A
Converters	.....CON
DC generators	.....DC
Dynamotors	.....DYN
Flexible couplings	.....F
Gas engines	.....ENG
Hand cranked generators	.....HC
HF generator	.....HF
Miniature control motors	.....MM
Motor starters	.....MS
Motors	.....M
Power plants	.....AC
Seisyns, etc.	.....S
Turntable motors	.....T

Aerovox Corp., New Bedford, Mass.—MS
 Air-Way Electric Appliance Corp., 2101 Auburn Ave., Toledo 1, Ohio—A, CON, DC, DYN, MM, M
 Ajax Electrothermic Corp., Ajax Park, Trenton 5, N. J.—HF
 Allen-Bradley Co., 136 W. Greenfield Ave., Milwaukee 4, Wis.—MS
 Alliance Mfg. Co., Alliance, Ohio—MM, T
 Allis-Chalmers Mfg. Co., P. O. Box 512, Milwaukee 1, Wis.—A, CON, DC, MS, M
 Allis Co., Louis, 427 E. Stewart St., Milwaukee 7, Wis.—A, CON, DC, M
 Amalg Corp., 4224 Lincoln Ave., Chicago 18, Ill.—MM, M, T
 Arnesen Electric Co., Inc., 116 Broad St., New York 4, N. Y.—DC, HC, HF, M, S
 Atlas Aircraft Products Corp., 5-17 46 Road, Long Island City 1, N. Y.—A, DC, HC, M, AC
 Barber-Colman Co., River & Loomis Sts., Rockford, Ill.—MM
 Bendix Aviation Corp., Bendix Radio Div., East Joppa Rd., Baltimore 4, Md.—DYN, MM, S
 Bendix Aviation Corp., Pacific Div., 11600 Sherman Way, N. Hollywood, Calif.—DC, DYN, HC, MM, M
 Bodine Electric Co., 2254 W. Ohio St., Chicago 12, Ill.—MM, M
 Bogue Electric Co., 27 Kentucky Ave., Paterson 8, N. J.—A, CON, DC, DYN, HF, M, AC
 Boonton Radio Corp., 518 Main St., Boonton, N. J.—CON
 Boston Gear Works, Inc., 14 Hayward St., N. Quincy 71, Mass.—F
 Browne Electric Co., J., 3774 Surf Ave., Brooklyn 24, N. Y.—MS
 Brown-Brockmeyer Co., 1000 S. Smithville Rd., Dayton 1, Ohio—DC, DYN, M
 Brujak Electric Corp., 11 Park Pl., New York 7, N. Y.—HF
 Buda Co., Harvey, Ill.—ENG, AC
 Burke Electric Co., 12th & Cranberry, Erie, Pa.—A, CON, DC, DYN, HC, M
 Carson Machine & Supply Co., 202 S.E. 29th St., Oklahoma City 9, Okla.—A, CON, ENG, AC
 Carter Motor Co., 1608 Milwaukee Ave., Chicago 47, Ill.—A, CON, DC, DYN, HC, M
 Caterpillar Tractor Co., Peoria 8, Ill.—AC
 Century Electric Co., 1806 Pine St., St. Louis 3, Mo.—DC, M
 Chicago Sound Systems, Inc., 2124 S. Michigan Ave., Chicago, Ill.—CON
 Clark Controller Co., 1146 E. 152nd St., Cleveland 10, Ohio—MS
 Climax Engineering Co., Clinton, Iowa—A, DC, ENG
 Cline Electric Mfg. Co., 4550 W. Lexington Ave., Chicago, Ill.—MS
 Columbia Electric Mfg. Co., 4519 Hamilton Ave., N.E., Cleveland 14, Ohio—A, DC, M
 Communication Measurements Laboratory, 120 Greenwich St., New York 6, N. Y.—HF
 Connecticut Telephone & Electric, Div. of Great American Industries, Inc., Meriden, Conn.—HC
 Continental Electric Co., Inc., 325 Ferry St., Newark 5, N. J.—A, CON, DC, DYN, M, AC, T
 Crystal Research Laboratories, Inc., 29 Allyn St., Hartford 3, Conn.—AC
 Cutler-Hammer Inc., 315 N. 12th St., Milwaukee 1, Wis.—MS
 Dalmo Victor Div. Goldfield Consolidated Mines Co., 1414 El Camino Real, San Carlos, Calif.—MM, M
 Dayton Acme Co., 930 York St., Cincinnati 14, Ohio—HC
 Delco Appliance Div., General Motors Corp., 391 Lyell Ave., Rochester 1, N. Y.—ENG, MM, M, AC

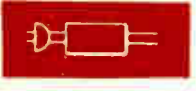
DeWalt Products Corp., Fountain Ave., Lancaster, Pa.—M
 Diehl Mfg. Co., Finderne Plant, Somerville, N. J.—A, CON, DC, DYN, MM, M, S
 Dumore Co., 1225 14th St., Racine, Wis.—M
 Dynamic Air Engineering, Inc., 1619 S. Alameda St., Los Angeles 21, Calif.—M
 Eastern Air Devices, Inc., 585 Dean St., Brooklyn 17, N. Y.—MM, M
 Eclipse-Pioneer Div., Bendix Aviation Corp., Teterboro, N. J.—A, CON, DC, DYN, ENG, M, MM
 Eicor, Inc., 1501 W. Congress St., Chicago 7, Ill.—A, CON, DC, DYN, HC, HF, MM, M, AC
 Electric Indicator Co., 23 Parker Ave., Stamford, Conn.—A, DC, HC, MM, M, S
 Electric Products Co., 1725 Clarkstone Rd., Cleveland 12, Ohio—A, CON, DC, M, AC
 Electric Specialty Co., 214 South St., Stamford, Conn.—Esco—A, DC, M, S
 Electron Equipment Corp., 917 Meridian Ave., So. Pasadena, Calif.—MS
 Electronic Laboratories, Inc., 122 W. New York St., Indianapolis 4, Ind.—CON
 Electronic Measurements Co., Red Bank, N. J.—HF
 Emerson Electric Mfg. Co., 1824 Washington Ave., St. Louis 3, Mo.—M
 Esco—Electric Specialty Co.
 Fairbanks, Morse & Co., 606 S. Michigan Ave., Chicago, Ill.—M
 Fairchild Camera & Instrument Corp., 8806 Van Wyck Blvd., Jamaica 1, N. Y.—DC, MM, T
 Federal Telephone & Radio Corp., 200 Mt. Pleasant Ave., Newark 4, N. J.—DYN, HF, MS
 Fractional Motors Co., 1501 N. Halsted St., Chicago 22, Ill.—DC, MS, M
 Garner Electronics Corp., 1100 W. Washington Blvd., Chicago 7, Ill.—DC, ENG, HC, MS, T
 Gaston Power Tools, 2659 W. 95th St., Chicago 42, Ill.—A, DC, ENG, HF, M, AC
 General Aviation Equipment Co., Inc., 2 East End Ave., New York 21, N. Y.—A
 General Industries Co., Taylor & Olive Sts., Elyria, Ohio—M, T
 General Tire & Rubber Co., Garfield, Wabash, Ind.—F
 Globe Industries, Inc., 125 Sunrise Place, Dayton 7, Ohio—MM, M
 Great Lakes Electric Mfg. Co., 17 S. Desplaines St., Chicago 6, Ill.—A, CON, DC, HF
 Hannon Electric Co., 1605 Waynesburg Rd., S.E., Canton, Ohio—F, MS
 Hansen Mfg. Co., R.R. No. 1, Princeton 14, Ind.—MM, M
 Harnischfeger Corp., 4400 W. National Ave., Milwaukee 14, Wis.—DC, M
 Hartman Corp. of America, 6417 Manchester, St. Louis 10, Mo.—AC
 Harvey Machine Co., Inc., 6200 Avalon Blvd., Los Angeles 3, Calif.—DC, MM
 Haydon Mfg. Co., Inc., Forestville, Conn.—MM
 Hertner Electric Co., 12690 Elmwood Ave., Cleveland 11, Ohio—A, CON, DC, M
 Hobart Mfg. Co., Troy, Ohio—S
 Holtzer-Cabot, Div. of First Industrial Corp., 125 Amory St., Roxbury 19, Mass.—A, DC, HC, MM, M
 Homelite Corp., Riverdale Ave., Port Chester, N. Y.—DC, AC
 Howell Electric Motors Co., Howell, Mich.—M
 Imperial Electric Co., Ira & Edison Aves., Akron 9, Ohio—A, CON, DC, M
 Jacobsen Mfg. Co., 747 Washington Ave., Racine, Wis.—A, DC, DYN, ENG, HF
 Janette Mfg. Co., 556 W. Monroe St., Chicago 6, Ill.—A, CON, DC, DYN
 Kato Engineering Co., 530 N. Front St., Mankato, Minn.—A, CON, DC, HF, M, AC
 Kepron Mfg. Co., Inc., 18 W. 20th St., New York 11, N. Y.—MM, S
 Kellogg Switchboard & Supply Co., 6650 S. Cleo Ave., Chicago 38, Ill.—A, CON, DC, DYN, ENG, MS, M
 Kohler Co., Kohler, Wis.—A, DC, ENG, AC
 Kollsman Instrument Div. of Square D Co., 80 08 45th Ave., Elmhurst, N. Y.—A, MM, S
 Kurz & Root Co., 214 Island St., Appleton, Wis.—A, DC
 Leland Electric Co., 1501 Webster St., Dayton 4, Ohio—A, DC, HF, M, AC
 Lorain Products Corp., 1122 F St., Lorain, Ohio—CON
 Lord Mfg. Co., 1639 W. 12th St., Erie, Pa.—F
 Manna Products Co., Norwalk, Conn.—M
 Martin-Holmes, Inc., 249 Wayne Ave., Dayton, Ohio—T
 Master Vibrator Co., 200 Davis Ave., Dayton 1, Ohio—A, ENG, AC
 Meiron—W. C. Rohnette Co.
 Micromotors—Redmond Co., A. G.
 Miles Reproducer Co., Inc., 812 Broadway, New York 3, N. Y.—F
 Monitor Controller Co., 51 S. Gay St., Baltimore 2, Md.—MS
 Ohio Electric Mfg. Co., 5900 Maurice Ave., Cleveland 4, Ohio—A, DC, DYN, M
 Onan & Sons, D. W., 3216 Royalton Ave., Minneapolis 3, Minn.—A, CON, DC, ENG, AC
 Oster Mfg. Co., John, 1 Main St., Racine, Wis.—MM, M
 Pacific Sound Equipment Co., 130 N. Beaudry Ave., Los Angeles 12, Calif.—T
 Phelon Co., R. E., 199 Union St., Springfield, Mass.—A
 Pilot Electric Co., 29 S. Broadway, Long Branch, N. J.—DYN, M
 Pilot—F. A. Smith Mfg. Co.
 Pioneer Electric Co., 3700 E. Olympic Blvd., Los Angeles 23, Calif.—AC
 Pioneer Gen-E Motor Corp., 5841-49 Dickens Ave., Chicago 39, Ill.—CON, DC, DYN, MM, AC

Radex Corp., 2066 Elston Ave., Chicago 14, Ill.—DYN, MM, M, T
 Ready Power Co., 3826 Grand River Ave., Detroit, Mich.—AC
 Redmond Co., A. G., Owosso, Mich.—"Micromotors"—DYN, M
 Reliance Electric & Eng. Co., Ivanhoe Rd., Cleveland 10, Ohio—DC, M
 Reynolds Electric Co., 2650 W. Congress St., Chicago 12, Ill.—M
 Robinette Co., W. C., 802 Fair Oaks Ave., South Pasadena, Calif.—"Metron"—T
 Rogers Diesel & Aircraft Corp., 1120 Leggett Ave., New York 59, N. Y.—A, DC, AC
 Ruby Electric Co., 729 Seventh Ave., New York, N. Y.—CON, DC
 Russell Electric Co., 340 W. Huron St., Chicago 10, Ill.—A, DYN, MM, M, T
 Signal Electric Mfg. Co., 1939 Troom St., Menominee, Mich.—M
 Simonds Machine Co., Inc., 246-48 Worcester St., Southbridge, Mass.—MS
 Small Motors, Inc., 1322 Elston Ave., Chicago 22, Ill.—DYN, HC, MM, M, T
 Smith Mfg. Co., F. A., Union & Augusta, Rochester 2, N. Y.—"Pilot"—M
 Speedway Mfg. Co., 1834 S. 52nd Ave., Cicero 50, Ill.—MM, M, T
 Star Electric Motor Co., 200 Bloomfield Ave., Bloomfield, N. J.—A, CON, DC, DYN, M
 Sturtevant Co., B. F., Damon, Hyde Park, Boston 36, Mass.—DC, M, AC
 Superior Electric Co., 1901 Indiana Ave., Chicago 16, Ill.—DC, HC
 Terminal Products Co., 1 Main St., Racine, Wis.—DC, DYN, MM, M, T
 Times Telephoto Equipment, Inc., 229 W. 43rd St., New York 18, N. Y.—MM
 U. S. Electrical Motors, Inc., 200 E. Slauson Ave., Los Angeles, Calif.—M
 U. S. Television Mfg. Corp., 3 W. 61st St., New York 23, N. Y.—A
 Universal Electric Co., 300 E. Main St., Owosso, Mich.—MM, M
 Universal Motor Company, 186 Harrison St., Oshkosh, Wis.—ENG, AC
 Wagner Electric Corp., 6410 Plymouth Ave., St. Louis, Mo.—M
 Walker, Inc., Robert, 403 W. 8th St., Los Angeles 14, Calif.—F, MS
 Walker-Turner Co., Inc., 639 South Ave., Plainfield, N. J.—M
 Warren Telechron Co., Ashland, Mass.—MM
 Waters Conley Co., Rochester, Minn.—T
 Webster-Chicago Corp., 5610 Bloomingdale Ave., Chicago 39, Ill.—T
 Westinghouse Elec. Corp., East Pittsburgh, Pa.—A, CON, DC, DYN, HC, HF, MM, MS, M, AC, S
 Wincharger Corp., E. 7th at Division, Sioux City 6, Iowa—A, CON, DC, DYN, M, T

D-X Radio Products Co., 1200 N. Claremont Ave., Chicago 22, Ill.—P, S
 Fast & Co., John E., 3129 N. Crawford Ave., Chicago 41, Ill.—S
 Freed Transformer Co., 72 Spring St., New York 12, N. Y.—P
 Garner Electronics Corp., 1100 W. Washington Blvd., Chicago 7, Ill.—P, S
 General Winding Co., 420 W. 45th St., New York 19, N. Y.—S
 Jefferson, Inc., Ray, 40 E. Merrick Rd., Freeport, L. I., N. Y.—P
 Mallory & Co., Inc., P. R., 3029 E. Washington St., Indianapolis 6, Ind.—S
 Measurements Corp., 116 Monroe St., Boonton, N. J.—IA
 Megard Corp., 1601 S. Burlington Ave., Los Angeles 6, Calif.—P, S
 Miller Co., J. W., 5917 S. Main St., Los Angeles 3, Calif.—"Miller"—P, S
 Northern Communications Mfg. Co., 210 E. 40th St., New York 16, N. Y.—P
 Philco Corp., Tioga & C Sts., Philadelphia, Pa.—P, S
 Point Mfg. Co., 3775 N. Ridge Ave., Chicago 26, Ill.—S
 Quietone—Cornell-Dubilier Elec. Corp.
 Radio Laboratories, Inc., 2701 California Ave., Seattle 6, Wash.—P, S
 Solar Capacitor Sales Corp., 285 Madison Ave., New York 17, N. Y.—P, S
 Sprague Electric Co., 189 Beaver St., North Adams, Mass.—IA, I, P, S
 Sprague Products Co., North Adams, Mass.—IA, I, P, S
 Stoddard Aircraft Radio Co., 6644 Santa Monica Blvd., Hollywood 38, Calif.—I
 S-W Indicator Co., 1036 N. Wood St., Chicago 22, Ill.—S
 Technical Appliance Corp., 46-06 DeLong St., Flushing, N. Y.—P, S
 United Transformer Co., 150 Varick St., New York 13, N. Y.—P
 Westinghouse Elec. Corp., East Pittsburgh, Pa.—P

Crowley & Co., Inc., Henry L., 1 Central Ave., West Orange, N. J.—"Crolite"—A, C
 Day & Co., James B., 1872 Clybourn Ave., Chicago 14, Ill.—A, C, CD, E, I, L, P, WC, W
 Devoe & Reynolds Co., Inc., P. O. Box 328, Louisville 1, Ky.—E, L, P, R, V, W, WF
 Distillation Products Inc., 755 Ridge Rd. W., Rochester 13, N. Y.—SL, VG
 Dolph Co., John C., 1060 Broad St., Newark 2, N. J.—A, C, E, I, L, S, V, WC, W
 Dow Chemical Co., Midland, Mich.—S, MC
 Dow Corning Corp., Midland, Mich.—I, P, R, SL, VG, V, WC
 Durez Plastics & Chemicals Inc., 1926 Walck Rd., N. Tonawanda, N. Y.—A, R, V
 Durite Plastics, 5000 Summerdale Ave., Philadelphia 24, Pa.—R
 Egyptian Lacquer Mfg. Co., 1270 Sixth Ave., New York 20, N. Y.—E, L, S
 Fansteel Metallurgical Corp., 2200 N. Sheridan Rd., N. Chicago, Ill.—MC
 Federal Telephone & Radio Corp., 200 Mt. Pleasant Ave., Newark 4, N. J.—I
 Fenox—Bakelite Corp.
 Foote Mineral Co., 12 E. Chelton Ave., Philadelphia 44, Pa.—MC
 Foster Co., Benjamin, 1411 Walnut St., Philadelphia 2, Pa.—A, C, E, I, M, P, WC
 Gates, Geo. W. Co., Inc., Hempstead Tpke. & Lucille Ave., Franklin Square, N. Y.—"Quartz-Etch"—MC
 GC—General Cement Mfg. Co.
 General Cement Mfg. Co., 919 Taylor Ave., Rockford, Ill.—A, C, CD, E, I, L, M, P, R, S, SL, V, WC, W, WF
 General Electric Co.—Specialty Div., 1001 Wolf St., Syracuse, N. Y.—C
 Glyco Products Co., Inc., 26 Court St., Brooklyn 2, N. Y.—CD, I, R, SL, WC, W
 Goldmark Wire Co., James, 116 West St., New York 7, N. Y.—C
 Graton & Knight Co., 356 Franklin St., Worcester 4, Mass.—C
 Halowax Products Div., Union Carbide & Carbon Corp., 30 E. 42nd St., New York, N. Y.—W
 Hansen Co., Wm., 165 Silverbrook Ave., Niles, Mich.—A, C, R, S, SL, WC, W, WF
 Harshaw Chemical Co., 1945 E. 97th St., Cleveland 6, Ohio—S
 Harvel—Irvington Varnish & Insulator Co.
 Hilo Varnish Corp., 42-60 Stewart Ave., Brooklyn, N. Y.—E, L, P, V, WF
 Horn Co., A. C., 43-36 Tenth St., Long Island City 1, N. Y.—E, L, P, V, WC, W, WF
 Howe & French Inc., 99 Broad St., Boston 10, Mass.—A, C, CD, L, S, WC, WF
 Insl-X Co., Inc., 857 Meeker Ave., Brooklyn 22, N. Y.—CD, I, L, R, V, WC
 Insulation Mfrs. Corp., 565 W. Washington Blvd., Chicago 6, Ill.—C, CD, I, R, V
 Interlake Chemical Corp.—Plastics Div., 1401 S. Circle Ave., Forest Park, Ill.—A, R
 Irvington Varnish & Insulator Co., 6 Argyle Terrace, Irvington 11, N. J.—"Harvel," "Irvington"—A, C, E, I, L, P, R, V, WC
 Joliet Chemicals Ltd., Industry Ave., Joliet, Ill.—WC
 Keese Engineering Co., 7354-6-8 Santa Monica Blvd., Hollywood 46, Calif.—L, P
 King Laboratories, Inc., 205 Oneida St., Syracuse 4, N. Y.—MC
 Lacquer & Chemical Corp., 214 40th St., Brooklyn 32, N. Y.—C, CD, E, L, S, WC, WF
 Libbey-Owens-Ford Glass Co.—Plaskon Div., 2112 Sylvan Ave., Toledo 6, Ohio—A, R
 Linick, Leslie L., 29 E. Madison St., Chicago, Ill.—C, W
 Lowe Bros. Co., 424 E. Third St., Dayton F2, Ohio—E, L, P, V, WF
 Maas & Waldstein Co., 438 Riverside Ave., Newark 4, N. J.—A, C, CD, E, I, L, M, P, R, S, V, WC, W, WF
 Marblette Corp., 37-21 30th St., Long Island City 1, N. Y.—A, C, I, L, R, V
 Markem Machine Co., Emerald St., Keene, N. H.—M
 Merck & Co., Inc., Rahway, N. J.—MC
 Mica Insulator Co., 200 Varick St., New York 14, N. Y.—I, R, S, V
 Midland Paint & Varnish Co., 9115 Reno Ave., Cleveland 5, Ohio—E, L, P, V, WF
 Mitchell Rand Insulation Co., 51 Murray St., New York 7, N. Y.—I, P, W
 Murphy Finishes Corp., 224 McWhorter St., Newark 1, N. J.—E, L, P, V, WF
 National Co., Inc., 61 Sherman St., Malden 48, Mass.—CD
 National Molding Co., 2141 W. Washington Blvd., Los Angeles 7, Calif.—A, C, CD, I, R, WC
 N. E. Radiocrafters, 1156 Commonwealth Ave., Boston 34, Mass.—A, C, CD, I
 New Wrinkle Inc., 1770 Springfield St., Dayton 3, Ohio—E, L, P, R, V, WF
 Oakite Products Inc., 22 Thames St., New York 6, N. Y.—S
 Pacific Clay Products, SteaPACTite Div., 308 W. Ave. 26, Los Angeles 31, Calif.—C
 Paisley Products, Inc., 1770 Canalport Ave., Chicago 16, Ill.—A, C, R, WC
 Patterson Screen Div., E. I. DuPont de Nemours & Co., Main St., Towanda, Pa.—MC
 Pennsylvania Coal Products Co., Petrolia, Pa.—A, R
 Phillips Process Co., Inc., 192 Mill St., Rochester 4, N. Y.—"Clear Print"—M

(24) Noise Elimination Equipment



- Interference analyzersIA
- Interference locatorsI
- Power filtersP
- Radio set filtersS

Aarons Radio Corp., 125 E. 46th St., New York 17, N. Y.—I
 Aeronautical Radio Mfg. Co., 155 First St., Mineola, L. I., N. Y.—P, S
 Aerovox Corp., 740 Belleville Ave., New Bedford, Mass.—IA, I, P, S
 Ameco—American Electronics
 American Communications Corp., 306 Broadway, New York, N. Y.—P, S
 American Electronics, 37 E. 18th St., New York 3, N. Y.—"Ameco"—IA, I, P, S
 American Television & Radio Co., 300 E. 4th St., St. Paul 1, Minn.—P, S
 American Transformer Co., Inc., 178 Emmet St., Newark 5, N. J.—S
 Avia Products Co., 7266 Beverly Blvd., Los Angeles, Calif.—P, S
 Barker & Williamson, Upper Darby, Pa.—I, P
 Bendix Aviation Corp., Pacific Div., 11600 Sherman Way, North Hollywood, Calif.—S
 Communication Parts, 1101 N. Paulina St., Chicago 22, Ill.—S
 Cornell-Dubilier Electric Corp., S. Plainfield, N. J.—"Quietone"—IA, I, PS
 Deutschmann Corp., Tobe, Canton, Mass.—IA, I, P, S
 Drake Co., R. L., 11 Longworth St., Dayton 2, Ohio—P, S

(25) Paint, Cement & Insulating Compounds



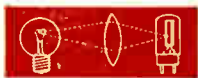
- AdhesivesA
- CementC
- Coil DopesCD
- EnamelsE
- Insulating compoundsI
- LacquersL
- Marking inksM
- Misc. chemicalsMC
- PaintP
- ResinsR
- SolventsS
- Special lubricantsSL
- Vacuum greasesVG
- VarnishV
- Waterproofing CompoundsWC
- WaxW
- Wrinkle finishWF

Acheson Colloids Corp., Port Huron, Mich.—SL
 Acme Wire Co., New Haven 14, Conn.—A, I, V
 Acromark Co., 9-13 Morrell St., Elizabeth 4, N. J.—M
 Advance Research Corp., 214 W. 42nd St., New York, N. Y.—I, SL
 Allied Asphalt & Mineral Corp., 217 Broadway, New York 7, N. Y.—I
 Ambroid Co., Inc., 305 Franklin St., Boston 10, Mass.—A, C, S, WC
 American Products Mfg. Co., Oleander & Dublin Sts., New Orleans 18, La.—A, C, CD, I, L, R, S, WC, W
 Arco Co., 7301 Bessemer Ave., Cleveland 4, Ohio—A, C, CD, E, I, L, M, P, R, S, V, WC, WF
 Ault & Wiborg, Div. of Interchemical Corp., 350 Fifth Ave., New York 1, N. Y.—E, L, M, P, R, V, WC, WF
 Austin Co., 0., 335 Throop Ave., Brooklyn 21, N. Y.—M
 Bakelite Corp., 30 E. 42nd St., New York 17, N. Y.—"Bakelite," "Fenox," "Vinylite," "Vinylseal," "Zyrox"—A, C, I, R, V, WC, W
 Baker Chemical Co., J. T., N. Broad St., Phillipsburg, N. J.—MC
 Biwax Corp., 3445 Howard St., Skokie, Ill.—I, WC, W
 Black Bear Co., Inc., 620 Fifth Ave., New York 20, N. Y.—SL
 Cantol Wax Co., 211 N. Washington St., Bloomington, Ind.—I, WC, W
 Cardinell Corp., 15 Label St., Montclair, N. J.—A
 Catalin Corp., 1 Park Ave., New York 16, N. Y.—R
 Clear Print—Phillips Process Co., Inc.
 Clifton Products Inc., Blackbrook Rd., Painesville, Ohio—I
 Crolite—Crowley & Co., Inc., Henry L.

Low Bros. Co., 424 E. Third St., Dayton F2, Ohio—E, L, P, V, WF
 Maas & Waldstein Co., 438 Riverside Ave., Newark 4, N. J.—A, C, CD, E, I, L, M, P, R, S, V, WC, W, WF
 Marblette Corp., 37-21 30th St., Long Island City 1, N. Y.—A, C, I, L, R, V
 Markem Machine Co., Emerald St., Keene, N. H.—M
 Merck & Co., Inc., Rahway, N. J.—MC
 Mica Insulator Co., 200 Varick St., New York 14, N. Y.—I, R, S, V
 Midland Paint & Varnish Co., 9115 Reno Ave., Cleveland 5, Ohio—E, L, P, V, WF
 Mitchell Rand Insulation Co., 51 Murray St., New York 7, N. Y.—I, P, W
 Murphy Finishes Corp., 224 McWhorter St., Newark 1, N. J.—E, L, P, V, WF
 National Co., Inc., 61 Sherman St., Malden 48, Mass.—CD
 National Molding Co., 2141 W. Washington Blvd., Los Angeles 7, Calif.—A, C, CD, I, R, WC
 N. E. Radiocrafters, 1156 Commonwealth Ave., Boston 34, Mass.—A, C, CD, I
 New Wrinkle Inc., 1770 Springfield St., Dayton 3, Ohio—E, L, P, R, V, WF
 Oakite Products Inc., 22 Thames St., New York 6, N. Y.—S
 Pacific Clay Products, SteaPACTite Div., 308 W. Ave. 26, Los Angeles 31, Calif.—C
 Paisley Products, Inc., 1770 Canalport Ave., Chicago 16, Ill.—A, C, R, WC
 Patterson Screen Div., E. I. DuPont de Nemours & Co., Main St., Towanda, Pa.—MC
 Pennsylvania Coal Products Co., Petrolia, Pa.—A, R
 Phillips Process Co., Inc., 192 Mill St., Rochester 4, N. Y.—"Clear Print"—M

Pioneer Asphalt Co., 435 N. Michigan Ave., Chicago, Ill.—I, WC
 Pittsburgh Equitable Meter Co., 400 N. Lexington Ave., Pittsburgh 8, Pa.—SL
 Picote, Inc., 225 Galveston Ave., Pittsburgh 22, Pa. P. V.
 Pratt & Lambert Inc., 75 Tonawanda St., Buffalo 7, N. Y.—A, E, I, L, P, S, V, WF
 Protectoseal Co., 1948 S. Western Ave., Chicago 8, Ill.—S
 Quartz Etch—Geo. W. Gates Co., Inc.
 Reinhold Chemicals Inc., 601 Woodward Heights Blvd., Detroit 20, Mich.—R
 Reilly Tar & Chemical Corp., 1617 Merchants Bank Bldg., Indianapolis 4, Ind.—E, L, P, R, S, WC
 Roxann Flexible Finishes Inc., 800 Magnolia Ave., Elizabeth F. N. J.—A, CD, I, L, P, R, S, V, WC, WF
 Sauereisen Cements Co., Sharpsburg Sta., Pittsburgh 15, Pa.—C, I
 Schaar & Co., 754 W. Lexington St., Chicago, Ill.—MC
 Schott Co., Walter L., 9308 Santa Monica Blvd., Beverly Hills, Calif.—"Walsco"—A, C, CD, E, I, L, P, S, SL, WC, V, WF
 Sherwin-Williams Co., 101 Prospect Ave., Cleveland, Ohio—B, I, L, P, R, S, V
 Special Chemicals Co., 1545 E. 18th St., Cleveland 14, Ohio—A, R
 Special Chemicals Co., 30 Irving Place, New York 3, N. Y.—P
 Sprague Electric Co., 189 Beaver St., North Adams, Mass.—I
 Standard Oil Co. (Indiana), 910 S. Michigan Ave., Chicago, Ill.—W
 Standard Varnish Works, 2600 Richmond Terrace, Staten Island 3, N. Y.—E, I, L, P, V, WC, W, WF
 Stevenson Bro. & Co., 110 Race St., Philadelphia 6, Pa.—R, SL, WC, W
 Stewart-Warner Alemitic Corp., 1826 Diversy Pkwy., Chicago 11, Ill.—SL
 Technic Inc., 39 Snow St., Providence 3, R. I.—WC
 Transcoil Corp., 114 Worth St., New York 13, N. Y.—WC
 U. S. Rubber Co., 1230 Sixth Ave., New York 20, N. Y.—C, L
 Vinylite—Bakelite Corp.
 Vinyseal—Bakelite Corp.
 Walsco—Walter L. Schott Co.
 Welch Mfg. Co., W. M., 1515 Sedgwick St., Chicago 10, Ill.—VG
 Western Reserve Laboratories, 1440 W. 3rd St., Cleveland 13, Ohio—S
 Westinghouse Electric Corp., East Pittsburgh, Pa.—E, I, L, R, SL, V, WC
 Wynn Mfg. Div., Hudson Supply Co., 401 N. 27th St., Richmond 23, Va.—C, CD, S, W
 Zons, F. W., 239 Centre St., New York, N. Y.—MC
 Zophar Mills Inc., 112-130 26th St., Brooklyn 32, N. Y.—A, C, I, WC, W
 Zyrox—Bakelite Corp.

(26) Photoelectric Equipment



- Complete unitsEE
- Light suppliesL
- Photo cellsPC
- PhotometersPM
- RelaysR

Aarons Radio Corp., 125 E. 46th St., New York 17, N. Y.—PC
 Air-Track Mfg. Co., A Div. of Aerodynamic Research Corp., 5009 Calvert Road, College Park, Md.—EE
 Alden Products Co., 117 N. Main St., Brockton 64, Mass.—EE
 Advance Electric & Relay Co., 1260 W. Second St., Los Angeles 26, Calif.—R
 Allied Control Co., Inc., 2 East End Ave., New York 21, N. Y.—R
 AMECO—American Electronics Co.
 American Electronics Co., 37 E. 18th St., New York 3, N. Y.—"AMECO"—EE
 American Instrument Co., 8030 Georgia Ave., Silver Spring, Md.—R
 American Television Laboratories, Inc., 433 E. Erie St., Chicago 11, Ill.—PC
 Amplifier Co. of America, 398 Broadway, New York 13, N. Y.—L
 Associated Research & Eng. Laboratories, 38 Brady St., San Francisco 3, Calif.—EE, L
 Audio-Tone Oscillator Co., 237 John St., Bridgeport 3, Conn.—EE, R
 Auth Electrical Specialty Co., Inc., 422 E. 53rd St., New York 22, N. Y.—R
 Automatic Electric Co., 1033 W. Van Buren St., Chicago 7, Ill.—R
 Barker & Williamson, Upper Darby, Pa.—EE
 Bell & Howell Co., 7100 McCormick Rd., Chicago 45, Ill.—PM
 Bradley Laboratories, Inc., 82 Meadow St., New Haven 10, Conn.—"Luxtron"—PC
 Bunnell & Co., J. H., 81 Prospect St., Brooklyn 1, N. Y.—R
 Burton Mfg. Co., 3855 N. Lincoln Ave., Chicago 13, Ill.—L
 Carlton Lamp Corp., 730 S. 13th St., Newark 3, N. J.—L

Cetron—Continental Electrical Co.
 Clare & Co., C. P., 4719 Sunnyside Ave., Chicago 30, Ill.—R
 Clark Radio Equipment Corp., 4313 N. Lincoln Ave., Chicago 18, Ill.—EE
 Clime Electric Mfg. Co., 4550 W. Lexington Ave., Chicago, Ill.—EE
 Coleman Electric Co., 318 Madison St., Maywood, Ill.—PM
 Continental Electric Co., 715 Hamilton St., Geneva, Ill.—"Cetron"—PC
 DeJur Amco Corp., Northern Blvd. at 45th St., Long Island City 1, N. Y.—PC
 Detect-O-Ray Co., 3836 Hull St., Skokie, Ill.—EE
 Dieterl Co., Harry W., 9330 Roselawn Ave., Detroit 4, Mich.—PM
 Eastern Amplifier Corp., 794 E. 140th St., New York 54, N. Y.—EE
 Eby, Inc., Hugh H., 18 W. Chelten Ave., Philadelphia 44, Pa.—PC, R
 Electric Eye Equipment Co., 6 W. Fairchild St., Danville, Ill.—R
 Electro-Eye—Hansen Co., Wm.
 Electronic Control Corp., 1573 E. Forest Ave., Detroit, Mich.—EE, R
 Electronic Engineers, 611 E. Garfield Ave., Glendale 5, Calif.—EE
 Electronic Laboratory, 306 S. Edinburgh Ave., Los Angeles, Calif.—R
 Electronic Products Co., 19 N. First St., Geneva, Ill.—R
 Electronic Specialties Mfg. Co., 68 High St., Worcester 2, Mass.—EE
 Electronic Tube Corp., 1200 E. Mermaid Lane, Chestnut Hill, Philadelphia 18, Pa.—EE, R
 Electro-Tech Equipment Co., 117 Lafayette St., New York 13, N. Y.—R
 Ess Instrument Co., 96 S. Washington Ave., Bergenfield, N. J.—EE, R
 Federal Instrument Co., 3917 47th Ave., Long Island City, N. Y.—R
 Federal Telephone & Radio Corp., 200 Mt. Pleasant Ave., Newark 4, N. J.—PC, R
 Fischer-Smith, Inc., 162 State St., West Englewood, N. J.—EE
 Fisher Pierce Co., 74 Ceylon St., Boston 21, Mass.—EE, L, R
 Gates & Co., Inc., Geo. W., Hempstead Tpk. & Lucille Ave., Franklin Sq., L. I., N. Y.—L
 Gem Radio & Television Co., 303 W. 42nd St., New York 18, N. Y.—EE
 General Communication Co., 530 Commonwealth Ave., Boston 15, Mass.—EE
 General Control Co., 1200 Soldiers Field Rd., Boston 34, Mass.—EE
 General Electric Co., Lamp Dept., Nela Park, Cleveland 12, Ohio—L
 General Electric Co., 1 River Rd., Schenectady 5, N. Y.—PC, R
 General Scientific Corp., 4029 S. Kedzie Ave., Chicago, Ill.—"Lumotron"—PC
 G-M Laboratories, Inc., 4300 N. Knox Ave., Chicago 41, Ill.—EE, PC, R
 Goodall Electric Mfg. Co., 320 N. Spruce St., Ogallala, Neb.—R
 Hanovia Chemical & Mfg. Equipment, 233 N.J.R.R. Ave., Newark 5, N. J.—EE, PM
 Hansen Co., Wm., 165 Silverbrook Ave., Niles, Mich.—"Electro-Eye", "Ordercall", "Radiocal"—EE
 Hayden Mfg. Co., Inc., Forestville, Conn.—R
 Herbach & Rademan Co., Mfg. Div., 517 Ludlow St., Philadelphia 6, Pa.—EE
 Hickok Electrical Instrument Co., 10514 Dupont Ave., Cleveland 8, Ohio—PM
 Hoffman Engineering Corp., 458 Sexton Bldg., Minneapolis 4, Minn.—EE
 Industrial Electronics Corp., 80 Bank St., Newark, N. J.—R
 Keeney & Co., Inc., J. H., 6610 S. Ashland Ave., Chicago 36, Ill.—EE
 Lawton Products Co., Inc., 624 Madison Ave., New York 22, N. Y.—EE
 Leach Relay Co., 5915 Avalon Blvd., Los Angeles, Calif.—R
 Leeds & Northrup Co., 4901 Stenton Ave., Philadelphia 41, Pa.—PM
 Leitz, Inc., E., 730 Fifth Ave., New York 19, N. Y.—PM
 Lewyt Corp., 60 Broadway, Brooklyn 11, N. Y.—R
 Long Co., L. J., 186 Grand St., New York 13, N. Y.—EE
 Lumentite Electronic Co., 407 S. Dearborn St., Chicago 5, Ill.—EE, L, R
 Lumotron—General Scientific Corp.
 Luxtron—Bradley Labs., Inc.

O M I S S I O N S

Listings have been omitted in all cases when, after three requests, a company has failed to return our directory questionnaire or otherwise verify its activity.

MB Mfg. Co., Inc., Instrument Division, "E" St., New Haven, Conn.—EE
 Megard Corp., 1601 S. Burlington Ave., Los Angeles 6, Calif.—EE, R
 Mellaphone Corp., 1462 E. Main St., Rochester 2, N. Y.—EE
 Miles Reproducer Co., Inc., 812 Broadway, New York 3, N. Y.—EE, R
 Muter Co., 1255 S. Michigan Ave., Chicago 5, Ill.—R
 National Union Radio Corp., 57 State St., Newark 2, N. J.—PC
 North Electric Mfg. Co., Box 417, Galion, Ohio—R
 Ordercall—Hansen Co., Wm.
 Pacific Electronics, W. 1011-1013 First Ave., Spokane 5, Wash.—EE
 Parker Engineering Products Co., 16 W. 22nd St., New York 10, N. Y.—R
 Perkin-Elmer Corp., 535 Hope St., Glenbrook, Conn.—PM
 Pfaltz & Bauer, Inc., 350 Fifth Ave., New York, N. Y.—EE, PC
 Photoswitch, Inc., 77 Broadway, Cambridge, Mass.—EE, L
 Photovolt Corp., 35 Madison Ave., New York 16, N. Y.—PC, PM
 Photronic—Weston Electrical Instrument Corp.
 Point Mfg. Co., 5775 N. Ridge Ave., Chicago 26, Ill.—PM
 Potter & Brumfield Mfg. Co., Inc., 617 N. Gibson St., Princeton, Ind.—R
 Precision Scientific Co., 1750 N. Springfield Ave., Chicago 47, Ill.—L
 Price Electric Corp., E. Church & Second Sts., Frederick, Md.—R
 Radiant Lamp Corp., 300 Jelliff Ave., Newark, N. J.—L
 Radiocal—Hansen Co., Wm.
 Radio Frequency Laboratories, Inc., Bloomton, N. J.—PM
 Rauland Corp., 4245 N. Knox Ave., Chicago 41, Ill.—PC
 Rehtron Corp., 4313 Lincoln Ave., Chicago 18, Ill.—EE, R
 Rubicon Co., Ridge Ave. at 35th St., Philadelphia 32, Pa.—PM
 Safety Electric Co., 110 S. Dearborn St., Chicago 3, Ill.—L
 Selenium Corp. of America, 1719 W. Pico Blvd., Los Angeles 15, Calif.—PC
 S. O. S. Cinema Supply Corp., 449 W. 42nd St., New York 18, N. Y.—L, PC
 Staro—Standard Electric Co.
 Standard Electric Co., 400 Linden Ave., Dayton 3, Ohio—"Staro"—R
 Struthers-Dunn, Inc., 1321 Arch St., Philadelphia 7, Pa.—R
 Sylvania Electric Products, Inc., 500 Fifth Ave., New York 18, N. Y.—L, PC
 Task Electronics Co., 245 W. 54th St., New York, N. Y.—EE
 Technical Products Co., 158 Madison Ave., Memphis, Tenn.—R
 Times Telephoto Equipment, Inc., 229 W. 43rd St., New York 18, N. Y.—EE, PC
 Tung-Sol Lamp Works, Inc., 95 Eighth Ave., Newark 4, N. J.—R
 United Cinephone Corp., 65 New Litchfield St., Torrington, Conn.—EE, L, PC, R
 Victoreen Instrument Co., 5606 Hough Ave., Cleveland 3, Ohio—PM
 Ward Leonard Electric Co., 31 South St., Mt. Vernon, N. Y.—R
 Westinghouse Elec. Corp., East Pittsburgh, Pa.—EE, L, PC, R
 Weston Electrical Instrument Corp., 614 Frelinghuysen Ave., Newark 5, N. J.—"Photronic"—PC, R
 White Research, 899 Boylston St., Boston 15, Mass.—EE, R
 Worner Electronic Devices, 609 W. Lake St., Chicago 6, Ill.—EE, L, PC, R
 Zetka Laboratories, Inc., 198-10-12 32nd Ave., Bayside, N. Y.—L

(27) Plastic Materials

- AcrylicsA
- Aniline-formaldehyde resinAF
- Cast resinCR
- Cellulose acetateC
- Cellulose acetate butyrateCB
- Cellulose nitrateCN
- Ethyl celluloseEC
- LaminatesL
- MelaminicsM
- PhenolsPH
- PolyethylenePE
- PolystyreneP
- Silicone compoundsS
- UreaU
- Vinyl resinsV

Acadia Synthetic Products Div., Western Felt Works, 4035 Olden Ave., Chicago, Ill.—P
 Alvar—Shawmigan Prod. Corp.
 American Cyanamid Co., Plastics Division, 30 Rockefeller Plaza, New York 20, N. Y.—"Beetle"—M, U

(28) Plastic Molders and Fabricators



Cabinet molders	C
Extruded shapes	E
Fabricators	F
Parts molders	P

American Molding Powder & Chemical Corp., 44 "U" St., Brooklyn, N. Y.—C
 American Phenolic Corp., 1830 S. 54th St., Cicero, Ill.—"Amphenol"—PH, P
 American Products Mfg. Co., Oleander & Dublin Sts., New Orleans 18, La.—C, CN, EC
 Amphenol—American Phenolic Corp.
 Arco Co., 7301 Bessemer Ave., Cleveland 4, Ohio—A, AF, CR, CN, EC, L, M, PH, P, U
 Baer Co., N. S., 9-11 Montgomery St., Hillside, N. J. L, PH
 Bakelite Corp., 30 E. 42nd St., New York 17, N. Y.—"Bakelite," "Vinylseal," "Vinylite," "Vinyon"—CR, PH, P, U, V
 Baker Oil Tools, Inc., 6000 S. Boyle St., Los Angeles 11, Calif.—CR
 Beetle—American Cyanamid Co.
 Bend-A-Lite Plastics Division, 423 South Honore St., Chicago 12, Ill.—A, CR, C, CB, PH, P, V
 Butacite—E. I. DuPont de Nemours & Co., Inc.
 Butvar—Shawinigan Prod. Corp.
 Catalin Corp., 1 Park Ave., New York 16, N. Y.—"Loalin"—CR, PH, P
 Celanese Plastics Corp., 180 Madison Ave., New York 16, N. Y.—"Celluloid," "Lumarith"—C, CN, EC
 Celeron—Continental Diamond Fibre Co.
 Cellanite—Continental Diamond Fibre Co.
 Celluloid—Celanese Plastics Corp.
 Chemaco Corp., Berkley Heights, N. J.—C, EC, P, V
 Coffite—Formica Insulation Co.
 Colonial Kolonite Co., 2214 Armitage Ave., Chicago 47, Ill.—A, CR, C, L, PH, P
 Condenser Products Co., 1375 N. Branch St., Chicago 22, Ill.—S
 Continental-Diamond Fibre Co., Newark 50, Del.—"Celeron," "Cellanite," "Dilectene," "Dilecto," "Vulcoid"—AF, L, M, PH
 Courmand & Co., E. L., 3835 Ninth Ave., New York 34, N. Y.—A, C, CN, P
 Creative Plastics Corp., 963 Kent Ave., Brooklyn 5, N. Y.—A, CR, L, PH
 Dilectene—Continental-Diamond Fibre Co.
 Dilecto—Continental-Diamond Fibre Co.
 Dow Chemical Co., Midland, Mich.—"Ethocel," "Styron"—EC, P, V
 Dow Corning Corp., Midland, Mich.—S
 DuPont de Nemours Co., Inc., E. I., Plastics Dept., 626 Schuyler Ave., Arlington, N. J.—"Butacite," "Luette," "Plastacele," "Pyralin"—A, CR, C, CN
 Durez Plastics & Chemicals, Inc., 1926 Walek Rd., North Tonawanda, N. Y.—"Durez"—PH
 Durite Plastics, 5000 Summerdale Ave., Philadelphia 24, Pa.—PH
 Electrical Insulation Co., Inc., 12 Vestry St., New York 13, N. Y.—PH
 Ethocel—Dow Chemical Co.
 Extruded Plastics, Inc., New Canaan Ave., Norwalk, Conn.—C, CB, EC, P, V
 Felsenthal & Sons, G., 4108 W. Grand, Chicago 51, Ill.—L
 Fibestos—Monsanto Chemical Co.
 Formica Insulation Co., 4614 Spring Grove Ave., Cincinnati 32, Ohio—"Coffite" "Formica"—L, M, PH, U
 Formvar—Shawinigan Prod. Corp.
 Franklin Mfg. Corp., A. W., 175 Varick St., New York 14, N. Y.—L, PH
 Franklin Fibre-Lamitex Corp., Wilmington, Del.—"Lamitex"—L, PH
 General Cement Mfg. Co., 919 Taylor Ave., Rockford, Ill.—C, EC, P
 General Electric Co., 1 River Rd., Schenectady 5, N. Y.—S
 General Electronic Chemical Dept., Plastics Div., 1 Plastics Ave., Pittsfield, Mass.—"Textolite"—L
 General Laminated Products, Inc., 2857 S. Halsted St., Chicago 8, Ill.—L, PH
 Gering Products, Inc., Kenilworth, N. J.—A, C, CB, CN, EC, P, V
 Glyco Products Co., Inc., 26 Court St., Brooklyn 2, N. Y.—U
 Goodrich Chemical Co., B. F., Rose Bldg., Cleveland 15, Ohio—"Koroal"—CR, V
 Hercules Powder Co., 900 Market St., Wilmington 99, Del.—"Herculoid"—C, EC, CN
 Herculoid—Hercules Powder Co.
 Heresite & Chemical Co., Manitowoc, Wis.—"Heresite"—CR, PH
 Howard Mfg. Corp., 1401 S. Main St., Council Bluffs, Iowa—M, PH, U
 Indur—Reilly Tar & Chemical Corp.
 Industrial Synthetics Corp., 60 Woolsey St., Irvington 11, N. J.—C, CB, EC, V
 Insulating Fabricators of New England, Inc., 69 Grove St., Watertown, Mass.—L, M, PH
 Insulating Tube Co., Inc., 26 Cottage St., P. O. Box 1, Poughkeepsie, N. Y.—L
 Insulation Manufacturers Corp., 565 W. Washington Blvd., Chicago 6, Ill.—L
 Insulation Products Co., 504 North Richland St., Pitts-burgh 8, Pa.—PH
 Insurok—Richardson Co.
 Interlake Chemical Corp., Plastics Div., 1401 S. Circle Ave., Forest Park, Ill.—CR, L, PH
 Irvington Varnish & Insulator Co., 6 Argyle Terrace, Irvington 11, N. J.—PH
 Keystone Electronics Co., 50-52 Franklin St., New York 13, N. Y.—L
 Knoedler Chemical Co., 651 High St., Lancaster, Pa.—CR
 Koroal—Goodrich Co., B. F.

Lamicoid—Mica Insulator Co.
 Lamitex—Franklin Fibre-Lamitex Corp.
 Loalin—Catalin Corp.
 Lucite—DuPont de Nemours Co., Inc., E. I.
 Lumarith—Celanese Plastics Corp.
 Lustron—Monsanto Chemical Co.
 Libbey-Owens-Ford Glass Co., Plaskon Div., 2112 Sylvan Ave., Toledo 6, Ohio—M, U
 Manufacturers Chemical Corp., Snyder Ave., Berkeley Heights, N. J.—C, EC, P, V
 Marblette Corp., 37-21 Thirtieth St., Long Island City 1, N. Y.—"Marblette"—CR, PH
 Mica Insulator Co., 200 Varick St., New York 14, N. Y.—"Lamicoid"—L, M, PH
 Mica Products Mfg. Co., 69 Wooster St., New York 12, N. Y.—L
 Micarta Fabricators, Inc., 5324 Ravenswood Ave., Chicago 40, Ill.—L, PH
 Micarta—Westinghouse Elec. Corp.
 Miles Reproducer Co., Inc., 812 Broadway, New York 3, N. Y.—C, EC
 Millen Mfg. Co., Inc., 150 Exchange St., Malden 48, Mass.—P
 Milprint, Inc., 431 West Florida St., Milwaukee 1, Wis.—L
 Monsanto Chemical Co., Plastics Div., 600 Monsanto Ave., Springfield 2, Mass.—"Fibestos," "Lustron," "Opalon," "Resinox"—C, CN, M, PH, P, V
 National Vulcanized Fibre Co., Maryland Ave., & Beech St., Wilmington 99, Del.—"Phenolite"—L
 Nixon Nitration Works, Nixon, N. J.—"Nixonite"—C, CN, EC
 Nixonite—Nixon Nitration Works
 Norton Laboratories, Inc., 360 Mill St., Lockport, N. Y.—A, C, EC, PH, P, U, V
 Ohmoid—Wilmington Fibre Specialty Co.
 Opalon—Monsanto Chemical Co.
 Owens-Corning Fiberglass Corp., Nicholas Bldg., Toledo 1, Ohio—L
 Panelyte—St. Regis Paper Co.
 Parisian Novelty Co., 3510 South Western Ave., Chicago 9, Ill.—A, C, CN, L, M, PH, U
 Penn Fibre & Specialty Co., 2024 to 2030 E. Westmoreland St., Philadelphia 34, Pa.—L
 Pennsylvania Coal Products Co., Petrolia, Pa.—PH
 Phenolite—National Vulcanized Fibre Co.
 Plastacele—E. I. DuPont de Nemours & Co., Inc.
 Plastic Fabricators Co., 440 Sansome St., San Francisco 11, Calif.—C, V
 Plex Corporation, 133 Walnut St., Hartford 5, Conn.—C, CB, EC, P
 Plexiglas—Rohm & Haas Co.
 Precision Paper Tube Co., 2035 W. Charleston St., Chicago 47, Ill.—C, EC, P
 Pyralin—E. I. DuPont de Nemours & Co., Inc.
 Reichhold Chemicals, Inc., 601 Woodward Heights Blvd., Detroit 20, Mich.—PH
 Reilly Tar & Chemical Corp., 1617 Merchants Bank Bldg., Indianapolis 4, Ind.—"Indur"—PH
 Resinox—Monsanto Chemical Co.
 Resistoflex Corp., 39 Planseon St., Belleville, N. J.—V
 Richardson Co., 27th & Lake Sts., Melrose Park, Ill.—"Insurok"—L
 Rogers Corporation, Mill & Oakland Sts., Manchester, Conn.—PH
 Rohm & Haas Co., Washington Square, Philadelphia 5, Pa.—"Plexiglas"—A
 St. Regis Paper Co., 230 Park Ave., New York 17, N. Y.—"Panelyte"—L, M, PH, U
 Sandee Mfg. Co., 3945 N. Western Ave., Chicago 18, Ill.—CN, EC, P, V
 Schott Co., Walter L., 9306 Santa Monica Blvd., Beverly Hills, Calif.—P
 Shawinigan Products Corp., 350 Fifth Ave., New York, N. Y.—"Alvar," "Butvar," "Formvar"—V
 Silcock-Miller Co., 10 West Parker Ave., Maplewood, N. J.—L
 Spaulding Fibre Co., 310 Wheeler St., Tonawanda, N. Y.—"Spauldite"—C
 Spauldite—Spaulding Fibre Co.
 Special Chemicals Co., 1545 E. 18th St., Cleveland 14, Ohio—PH, V
 Standard Products Co., 505 Blvd. Bldg., Detroit 2, Mich.—A, AF, CR, C, CB, CN, EC, L, M, PH, P, U, V
 Stokes Rubber Co., Joseph, Trenton, N. J.—C, P
 Styron—Dow Chemical Co.
 Synthane Corp., Oaks, Pa.—"Synthane"—L, M, PH
 Taylor Fibre Co., Norristown, Pa.—L
 Tenite—Tennessee Eastman Corp.
 Tennessee Eastman Corp., Kingsport, Tenn.—"Tenite"—C
 Textolite—General Electric Co., Plastics Div.
 Tingstol Co., 1461 W. Grand Ave., Chicago 22, Ill.—A, L
 United Radio Mfg. Co., 191 Greenwich St., New York, N. Y.—PH
 Varflex Corp., N. Jay St., Rome, N. Y.—V
 Vinylite—Bakelite Corp.
 Vinylseal—Bakelite Corp.
 Vinyon—Bakelite Corp.
 Vulcoid—Continental-Diamond Fibre Co.
 Western Lithograph Co., 600 E. 2nd St., Los Angeles 54, Calif.—L
 Westinghouse Elec. Corp., East Pittsburgh, Pa.—"Micarta"—L, M, PH, S, U
 Wilmington Fibre Specialty Co., P. O. Drawer 1028, Wilmington 99, Del.—"Ohmoid"—L, PH

A.B.C. Products Inc., 2131 Stoner Ave., West Los Angeles 25, Calif.—F
 Adrem Co., 143 Newbury St., Boston 16, Mass.—P
 Airtronics Development Corp., 131-133 E. 3rd St., Dayton 2, Ohio—P
 Alden Products Co., 117 N. Main St., Brockton 64, Mass.—P
 Allmetal Screw Products Co., 33 Greene St., New York 13, N. Y.—P
 American Hard Rubber Co., 11 Mercer St., New York 13, N. Y.—P
 American Insulator Corp., New Freedom, Pa.—C, P
 Anchor Plastics Co., 541 Canal St., New York, N. Y.—E
 Atlas Products Corp., 30 Rockefeller Plaza, New York 20, N. Y.—C, E, F, P
 Auburn Button Works, Inc., Auburn, N. Y.—C, E, P
 Baer Co., N. S., 9-11 Montgomery St., Hillside, N. J.—F
 Bakelite Corp., 30 E. 42nd St., New York 17, N. Y.—"Bakelite"—P
 Barker & Williamson, Upper Darby, Pa.—F
 Bastian Bros. Co., 1600 N. Clinton Ave., Rochester, N. Y.—F
 B & C Insulation Products Inc., 261 Fifth Ave., New York, N. Y.
 Bend-A-Lite Plastics Div., 423 S. Honore St., Chicago 12, Ill.—F
 Boonton Molding Co., 326 Myrtle Ave., Boonton, N. J.—F, P
 Brillhart Ltd., Arnold, 435 Middle Neck Rd., Great Neck, L. I., N. Y.—F, P
 Burke Electric Co., 12th and Cranberry, Erie, Pa.—P
 Burton Mfg. Co., 3855 N. Lincoln Ave., Chicago 13, Ill.—P
 Carter Products Corp., 6921 Carnegie Ave., Cleveland 3, Ohio—E
 Celluplastic Corp., 50 Ave., L., Newark, N. J.—E, F, P
 Chase Brass & Copper Co., 236 Grand St., Waterbury 91, Conn.—E
 Chicago Die Mold Corp., 4001 Wrightwood Ave., Chicago 39, Ill.—C, P
 Chicago Molded Products Corp., 1020 N. Kolmar Ave., Chicago 51, Ill.—C, P
 Cinch Mfg. Corp., Div. United-Carr Fastener Co., 2355 W. Van Buren St., Chicago, Ill.—E, F, P
 Cleveland Plastics Inc., 1611 E. 21st St., Cleveland 14, Ohio—P
 Colonial Kolonite Co., 2214 Armitage Ave., Chicago 47, Ill.—F
 Consolidated Molded Products Corp., 309 Cherry St., Scranton 2, Pa.—C, P
 Continental-Diamond Fibre Co., Newark 50, Del.—F, P
 Courmand & Co., E. L., 3835 Ninth Ave., New York 34, N. Y.—F
 Creative Plastics Corp., 963 Kent Ave., Brooklyn 5, N. Y.—C, F
 Crowley & Co., Inc., Henry L., 1 Central Ave., West Orange, N. J.—E, P
 Davies Molding Co., Harry, 1428 N. Wells St., Chicago 10, Ill.—C, F, P
 Davis Plastics Co., Joseph, Arlington, N. J.—EP
 Dayton Insulating Molding Co., Dayton, Ohio—P
 Diemolding Corp., Rashach St., Canastota, N. Y.—P
 Dillon Beck Mfg. Co., 103 Montgomery Ave., Irvington 11, N. J.—P
 Eclipse Moulded Products Co., 5150 N. 32nd St., Milwaukee 9, Wis.—C, E, F, P
 Edwards, Inc., T. J., 210 South St., Boston 5, Mass.—F
 Electric Coding Machine Co., 57 Franklin St., New York 13, N. Y.—F
 Electrical Insulation Co., Inc., 12 Vestry St., New York 13, N. Y.—F
 Electronic Mfg. Co., 339-347 W. 8th Ave., Dubuque, Iowa—F
 Electronic Processes Corp., 249 Richards Rd., Ridge-wood, N. J.—F
 Emeloid Co., Inc., Laurel Ave., Arlington, N. J.—F, P
 Felsenthal, G., & Sons, 4108 W. Grand, Chicago 51, Ill.—F, P
 Franklin, A. W., Mfg. Corp., 175 Varick St., New York 14, N. Y.—F, P
 Franklin Fibre-Lamitex Corp., Wilmington, Del.—F
 Gemold Corp., 7910-7930 Alhion Ave., Elmhurst, L. I., N. Y.—"Gemute"—E, F, P
 Gemute—Gemold Corp.
 General Cement Mfg. Co., 919 Taylor Ave., Rockford, Ill.—E
 General Electronic Chemical Dept., Plastics Div., 1 Plastics Ave., Pittsfield, Mass.—E, P
 General Industries Co., Taylor & Olive Sts., Elyria, Ohio—P

General Laminated Products, Inc., 2857 S. Halsted St., Chicago 8, Ill.—P
 Goodall Electric Mfg. Co., Third & Main St., Ogallala, Nebr.—E, P
 Grayhill, 1 N. Pulaski Rd., Chicago 24, Ill.—P
 Hawley Products Co., 333-839 N. 6th St., St. Charles, Ill.—C
 Heath Co., 305 Territorial, Benton Harbor, Mich.—F
 Hopp Press, Inc., 460 W. 34th St., New York 1, N. Y.—E, F, P
 Howard Mfg. Corp., 1401 S. Main St., Council Bluffs, Iowa—C, P
 Imperial Molded Products Corp., 2925 W. Harrison St., Chicago 12, Ill.—P
 Industrial Fabricators, Inc., 1890 Carter Rd., Cleveland 13, Ohio—F
 Industrial Molded Products Co., 2035 Charleston St., Chicago, Ill.—P
 Industrial Synthetics Corp., 60 Woolsey St., Irvington 11, N. J.—Synflex—E
 Insulating Tube Co., Inc., 26 Cottage St., P. O. Box 1, Poughkeepsie, N. Y.—E
 Insulation Mfg. Co., 11 N. Y. Ave., Brooklyn 16, N. Y.—P
 Insurok—Richardson Co.
 International Products Corp., 2254 Greenmount Ave., Baltimore 18, Md.—F
 Irvington Varnish & Insulator Co., 6 Argyle Terrace, Irvington 11, N. J.—E, F, P
 Jorgensen Mfg. Co., 1547 W. Farms Rd., New York 60, N. Y.—F
 Keasby & Mattison Co., Ambler, Pa.—P
 Kellough Switchboard & Supply Co., 6650 S. Cicero Ave., Chicago 38, Ill.—P
 Keystone Electronics Co., 50-52 Franklin St., New York 13, N. Y.—F
 Kirk Molding Co., 142 Brook St., Clinton, Mass.—P
 Klise Mfg. Co., 50 Cottage Grove St., S. W., Grand Rapids 2, Mich.—F
 Kulka Electric Mfg. Co., Inc., 30 South St., Mt. Vernon, N. Y.—F, P
 Kurz Kasch, Inc., Dayton 1, Ohio—C, P
 Long Island Engraving Co., 19 W. 21st St., New York 10, N. Y.—F
 Mack Molding Co., Wayne, N. J.—E, C, P
 Maico Co., Inc., 21 N. Third St., Minneapolis 1, Minn.—C, E, F, P
 Mastcraft Plastics Co., Inc., 95-01 150th St., Jamaica 4, N. Y.—F
 Mayfair Molded Products Corp., 4440 N. Elston Ave., Chicago 30, Ill.—P
 McInerney Plastics Co., 25 Commerce Ave., S. W., Grand Rapids 2, Mich.—FI
 Metaplast Co., 205 W. 19th St., New York 11, N. Y.—P
 Micarta Fabricators, Inc., 5324 Ravenswood Ave., Chicago 40, Ill.—P
 Midwest Molding & Mfg. Co., 335 N. Whipple St., Chicago 12, Ill.—P
 Mills Corp., Elmer E., 153 W. Huron St., Chicago, Ill.—E, P
 Mitchell Rand Insulation Co., 51 Murray St., New York 7, N. Y.—E
 Molded Insulation Co., Aircraft Control Div., 335 E. Price St., Philadelphia 44, Pa.—C, P
 Mycalex Corp. of America, 60 Clifton Blvd., Clifton, N. J.—P
 National Co., Inc., 61 Sherman St., Malden 48, Mass.—E
 National Fabricated Products, 2650 W. Belden Ave., Chicago 47, Ill.—I
 National Lock Co., 1902 Seventh St., Rockford, Ill.—C, P
 National Molding Co., 2141 W. Washington Blvd., Los Angeles 7, Calif.—F, P
 National Varished Products Corp., 211 Randolph Ave., Woodbridge, N. J.—E
 National Vulcanized Fibre Co., Maryland Ave. & Beech St., Wilmington 99, Del.—F
 New England Radiocrafters, 1156 Commonwealth Ave., Boston 34, Mass.—F
 Niagara Insul Bake Specialty Co., Inc., 483 Delaware Ave., Albany, N. Y.—P
 Northeastern Plastics, 588 Commonwealth Ave., Boston 15, Mass.—P
 Northern Industrial Chemical Co., 7-11 Elkins St., South Boston 27, Mass.—C, P
 Norton Laboratories, Inc., 560 Mill St., Lockport, N. Y.—C, P
 Olek A. & Son, Inc., 4757-59 Melrose St., Philadelphia 37, Pa.—F
 Oris Mfg. Co., Inc., Jackson St., Thomaston, Conn.—P
 Panelyte—St. Regis Paper Co.
 Parisian Novelty Co., 8510 S. Western Ave., Chicago 9, Ill.—P
 Patent Button Co., 41 Brown St., Waterbury 88, Conn.—P
 Peerless Roll Leaf Co., Inc., 4511 New York Ave., Union City, N. J.—F
 Plastex Corp., 402 Mt. Vernon Ave., Columbus 3, Ohio—E, F
 Plastic Accessories, Inc., 460 Broome St., New York 13, N. Y.—F
 Plastcraft Products Co., 16 Hudson St., New York 13, N. Y.—F, P
 Plastic Fabricators Co., 440 Sansome St., San Francisco 11, Calif.—F
 Plastic Manufacturers, Inc., Fairfield Ave., Stamford, Conn.—P
 Plastikmould—R. D. Werner Co., Inc.
 Plastiktrim—R. D. Werner Co., Inc.

Plastoid Corp., 19 W. 44th St., New York 18, N. Y.—E
 Plax Corp., 133 Walnut St., Hartford 5, Conn.—E, F
 Plymold Corp., Lawrence, Mass.—F
 Ports Mfg. Co., 3265 E. Belmont Ave., Fresno 3, Calif.—F
 Precision Radio Co., 210 220 N. Western Ave., Los Angeles 4, Calif.—E, F, P
 Printloid, Inc., 93 Mercer St., New York 12, N. Y.—F
 Quad Mfg. Co., 462 N. Parkside Ave., Chicago 44, Ill.—F
 R. E. C. Mfg. Corp., 1250 Highland St., Holliston, Mass.—F, P
 Reinler Co., Ltd., 2101 Bryant St., San Francisco 10, Calif.—Remler—C, E, F, P
 Richardson Co., Melrose Park, Melrose Park, Ill.—Insurok—C, E, F, P
 Rogan Bros., 2001 S. Michigan Ave., Chicago, Ill.—P
 Rohden Mfg. Co., 1753 N. Honore St., Chicago 22, Ill.—P
 Royal Moulding Co., 69 Gordon Ave., Providence 5, R. I.—P
 St. Regis Paper Co., 230 Park Ave., New York 17, N. Y.—Panelyte—F, P
 Sandee Mfg. Co., 3945 N. Western Ave., Chicago 18, Ill.—E
 Santay Corp., 351 N. Crawford Ave., Chicago 24, Ill.—C, P
 Schott, Walter L. Co., 9306 Santa Monica Blvd., Beverly Hills, Calif.—Walsco—E
 Sillocks-Miller Co., 10 W. Parker Ave., Maplewood, N. J.—F
 Slater, N. G. Corp., 3 W. 29th St., New York, N. Y.—F
 Spaulding Fibre Co., Inc., 310 Wheeler St., Tonawanda, N. Y.—F
 Special Electric Labs., 7657 S. Central Ave., Los Angeles 1, Calif.—F
 Sponge Rubber Products Co., Shelton, Conn.—P
 Standard Molding Corp., 460 Bacon St., Dayton 1, Ohio—C, F, P
 Standard Products Co., 505 Blvd. Bldg., Detroit 2, Mich.—C, E, F, P
 Standard Technical Devices, Inc., 129 Livingston St., Brooklyn 2, N. Y.—F
 Stedman, Robert L., E. Main St., Oyster Bay, N. Y.—F
 Stricker-Brunhuber Co., 19 W. 24th St., New York 10, N. Y.—E
 Synflex—Industrial Synthetics Corp.
 Synthane Corp., Oaks, Pa.—F, P
 Syracuse Ornamental Co., 581 S. Clinton St., Syracuse 2, N. Y.—C, P
 Taylor Fibre Co., Norristown, Pa.—F, P
 Tech Art Plastics Co., 41-01 36th Ave., Long Island City, N. Y.—C, E, P
 Traver Corp., 358-368 W. Ontario St., Chicago 10, Ill.—F
 Trim, Inc., 1770 W. Berceau Ave., Chicago 13, Ill.—P
 Tri-United Corp., 390 Nye Ave., Irvington 11, N. J.—C, P
 Ucinite Co., Div. United-Carr Fastener Corp., Newtonville, Mass.—E, F, P
 Union Insulating Co., Box 351, Parkersburg, W. Va.—P
 Universal Plastics Corp., 270 Madison Ave., New York, N. Y.—C, E, F, P
 Varflex Corp., N. Jay St., Rome, N. Y.—E
 Victory Mfg. Co., 1722-24 W. Arcade Pl., Chicago 12, Ill.—C, P
 Vidal Research Corp., Central Airport, Camden 1, N. J.—C
 Walsco—Walter L. Schott Co.
 Waterbury Companies, Inc., 835 S. Main St., Waterbury 90, Conn.—C, P
 Welsh, Wm. H. Co., 2241 S. Indiana Ave., Chicago 16, Ill.—P
 Wernco—R. D. Werner Co., Inc.
 Werner, R. D. Co., Inc., 295 Fifth Ave., New York 16, N. Y.—P
 Westinghouse Elec. Corp., East Pittsburgh, Pa.—F, P
 Wheeling Stamping Co., Wheeling, W. Va.—P
 White, S. S. Dental Mfg. Co., Industrial Div., 10 E. 40th St., New York, N. Y.—P
 Willson Plastics Division, Willson Magazine Camera Co., 6022 Media St., Philadelphia 31, Pa.—C, E, F, P
 Wilmington Fibre Specialty Co., P. O. Drawer 1028, Wilmington 99, Del.—E, F
 Windman Bros., 3325 Union Pacific Ave., Los Angeles 23, Calif.—C, P

(129) Power Rectifier Systems & Vibrators



Battery eliminators	BE
Electronic tube rectified	VT
Hand cranked units	HC
Inverters	INV
Mercury arc	MA
Metallic rectifiers	MM
Rectifier power units	PU
Vibrator freq. changers	VF
Vibrator power packs	VP
Vibrators	V
Voltage regulators	VR

Aarons Radio Corp., 125 E. 46th St., New York 17, N. Y.—PU
 Acme Electric & Mfg. Co., Cuba, N. Y.—VP
 Acme Fire Alarm Co., Inc., 106 Seventh Ave., New York 11, N. Y.—M
 Aerovox Corp., 740 Belleville Ave., New Bedford, Mass.—VF, VP, V
 Airplane & Marine Instruments, Inc., Clearfield, Pa.—BE, VT, PU, VP
 Airtronics Development Corp., 131-133 E. 3rd St., Dayton 2, Ohio—BE, VT, PU
 Air-Track Mfg. Co., A Div. of Aerodynamic Research Corp., 5009 Calvert Road, College Park, Md.—VT
 Ameco—American Electronics
 American Communications Corp., 306 Broadway, New York, N. Y.—BE, VT, VR
 American Electronics, 37 E. 18th St., New York 3, N. Y.—Ameco—VT, PU, VR
 American Radio Co., 611 E. Garfield Ave., Glendale 5, Calif.—VT, INV, M, PU, VR
 American Television & Radio Co., 300 E. 4th St., St. Paul 1, Minn.—BE, INV, M, PU, VF, VP, V
 American Transformer Co., Inc., 178 Emmet St., Newark 5, N. J.—VT, PU, VR
 Amplifier Co. of America, 398 Broadway, New York 13, N. Y.—INV, PU, VR
 Apex Electric Mfg. Co., 1070 E. 152nd St., Cleveland, Ohio—INV
 Applied Research Laboratories, 4336 San Fernando Rd., Glendale 4, Calif.—PU, VR
 Auto Radio Filterpac—Benwood Linze Co.
 Automatic Electric Co., 1033 W. Van Buren St., Chicago 7, Ill.—BE
 Barker & Williamson, Upper Darby, Pa.—VT, MA, PU
 Benwood Linze Co., 1815 Locust St., St. Louis 3, Mo.—Auto Radio Filterpac—B-L—BE, M, PU
 B-L—Benwood Linze Co.
 Boonton Radio Corp., 518 Main St., Boonton, N. J.—PU
 Bradley Laboratories, Inc., 82 Meadow St., New Haven 10, Conn.—M
 Brelo Corp., 55 VanDam St., New York 13, N. Y.—VT, M, PU
 Bunnell, J. H. & Co., 81 Prospect St., Brooklyn 1, N. Y.—PU
 Burlington Instrument Co., N. Fourth St., Burlington, Iowa—VR
 Carter Motor Co., 1608 Milwaukee Ave., Chicago 47, Ill.—HC, INV
 Collins Radio Co., Cedar Rapids, Iowa—PU
 Communication Measurements Laboratory, 120 Greenwich St., New York 6, N. Y.—VT
 Communications Co., Inc., 300 Greco Ave., Coral Gables 34, Fla.—PU, VP
 Conant Electrical Laboratories, 6500 "O" St., Lincoln 5, Nebr.—M
 Connecticut Telephone & Electric, Div. Great American Industries, Inc., Meriden 3, Conn.—BE, PU
 Control Corp., 718 Central Ave., Minneapolis 14, Minn.—VR
 Dietert, Harry W. Co., 9330 Roselawn Ave., Detroit 4, Mich.—VR
 Drake, R. L. Co., 11 Longworth St., Dayton 2, Ohio—PU
 Eastern Amplifier Corp., 794 E. 140th St., New York 54, N. Y.—BE, VT
 Eclipse-Pioneer Division, Bendix Aviation Corp., Teterboro, N. J.—INV, VR
 Ecor, Inc., 1501 W. Congress St., Chicago 7, Ill.—INV
 Eleco—Electron Equipment Corp.
 Electric Specialty Co., 214 South St., Stamford, Conn.—Esco—INV
 Electrical Facilities, Inc., 4224 Holden St., Oakland 8, Calif.—Rexselen—M, PU
 Electricoil Transformer Co., 421 Canal St., New York 13, N. Y.—BE, VT, M, PU
 Electro Products Laboratory, 549 W. Randolph St., Chicago 6, Ill.—BE, VT, VP
 Electron Equipment Corp., 917 Meridian Ave., So. Pasadena, Calif.—Eleco—VT, INV, MA, PU, VR
 Electronic Control Corp., 1573 E. Forest Ave., Detroit, Mich.—VT
 Electronic Enterprises, Inc., 65-67 Seventh Ave., Newark 4, N. J.—VT
 Electronic Laboratories, Inc., 122 W. New York St., Indianapolis 4, Ind.—Portapack, Portapower—INV, PU, VF, VP, V
 Electronic Measurements Co., Red Bank, N. J.—BE, PU, VP, VR

USE THE INDEX

This Directory of radio-electronic-television sources of supply is most complete and up-to-date, having been totally compiled and revised during 1946, with a final check-survey of manufacturers and their products completed as late as March and April of the present year.

Electronic Specialty Co., 3456 Glendale Blvd., Los Angeles 26, Calif.—VP
Electronic Specialties Mfg. Co., 68 High St., Worcester 2, Mass.—PU, VP, VR
Electronic Tube Corp., 1200 E. Mermaid Lane, Chestnut Hill, Philadelphia 18, Pa.—BE, VR
Electro-Tech Equipment Co., 117 Lafayette St., New York 10, N. Y.—A, R
Fansteel Metallurgical Corp., 2200 Sheridan Rd., North Chicago, Ill.—BE, M, PU
Federal Telephone & Radio Corp., 200 Mt. Pleasant Ave., Newark 4, N. J.—BE, M, PU, VP, V
Ferranti Electric, Inc., 30 Rockefeller Plaza, New York 20, N. Y.—BE, PU, VR
Ferris Instrument Co., 110 Cornelia St., Boonton, N. J.—“Ferris”—VP
Fisher Research Laboratory, 1961 University Ave., Palo Alto, Calif.—VP
Flashtron—Thordarson Electric Mfg. Co.
Franklin Transformer Mfg. Co., 65 22nd Ave., N. E., Minneapolis 13, Minn.—M
Fred Transformer Co., 72 Spring St., New York 12, N. Y.—VR
Gem Radio & Television Co., 303 W. 42nd St., New York 18, N. Y.—VR
General Communication Co., 530 Commonwealth Ave., Boston 15, Mass.—VT, PU, VP, VR
General Electric Co., 1285 Boston Ave., Bridgeport 2, Conn.—VT, M, VR
General Electric Co., Transmitter Div., Thompson Rd. Plant, Syracuse, N. Y.—PU
General Radio Co., 275 Massachusetts Ave., Cambridge 39, Mass.—BE, PU
General Transformer Corp., 1250 W. Van Buren St., Chicago 7, Ill.—PU, VP
Gibbs, Thomas B. & Co., Delavan, Wis.—INV
Goodall Electric Mfg. Co., Third & Main St., Ogallala, Nebr.—PU
Graybar Electric Co., Inc., 420 Lexington Ave., New York 17, N. Y.—PU
Green, W. Electric Co., Inc., 130 Cedar St., New York 6, N. Y.—VT, M, PU
Hannon Electric Co., 1605 Waynesburg Rd., S. E., Canton, Ohio—VT, M
Harvey Radio Laboratories, Inc., 447 Concord Ave., Cambridge 38, Mass.—VR
Herbach & Rademan Co., Mfg. Div., 517 Ludlow, Philadelphia 6, Pa.—BE, VT, PU
Hercules Electric & Mfg. Co., Inc., 2500 Atlantic Ave., Brooklyn 7, N. Y.—BE, PU
Holtzer-Cabot, Div. First Industrial Corp., 125 Amory St., Roxbury 19, Mass.—INV, VR
Horn Signal Mfg. Corp., 421 W. 54th St., New York 19, N. Y.—BE, M, PU, VR
Howard Pacific Corp., 932 N. Western Ave., Los Angeles 27, Calif.—VT
James Vibrapowr Co., 1551 Thomas St., Chicago 22, Ill.—VP, V
Kellogg Switchboard & Supply Co., 6850 S. Cicero Ave., Chicago 38, Ill.—V
Kurman Electric Co., 35-18 37th St., Long Island City, N. Y.—V
Langevin Co., Inc., 37 W. 85th St., New York 23, N. Y.—VT, PU
Linde Air Products Co., 30 E. 42nd St., New York 17, N. Y.—INV
Link, Fred M., 125 W. 17th St., New York 11, N. Y.—VP
Lyman Electronic Corp., 12 Cass St., Springfield, Mass.—VT, PU, VR
Maquire Industries, Inc., Electronics Div., 342 W. Putnam Ave., Greenwich, Conn.—VP
Mallory, P. R. & Co., Inc., 3029 E. Washington St., Indianapolis 6, Ind.—“Mallory Dry Disc”—BE, M, PU, VP, V
Mallory Dry Disc—P. R. Mallory & Co., Inc.
Mattern, F., Mfg. Co., 4647 N. Cicero Ave., Chicago 30, Ill.—VT
McColpin-Christie Corp., 4922 S. Figueroa St., Los Angeles 37, Calif.—VT, M
Megard Corp., 1601 S. Burlington Ave., Los Angeles 6, Calif.—PU
Mellaphone Corp., 1462 E. Main St., Rochester 2, N. Y.—BE, VT, MA, PU
Mohawk Electric Mfg. Co., 60-62 Howard St., Irvington 6, N. J.—M, PU
Moulic Specialties Co., 1005-1007 W. Washington St., Bloomington, Ill.—VT
M & Z Industrial Development Co., 32 W. 12th St., Bayonne, N. J.—PU, VR
National Co., Inc., 61 Sherman St., Malden 48, Mass.—BE, PU, VP
North Electric Mfg. Co., Box 417, Gallon, Ohio—BE, M
Northern Communications Mfg. Co., 210 E. 40th St., New York 16, N. Y.—VT
Oak Mfg. Co., 1280 Clybourn Ave., Chicago 10, Ill.—“Oak”—INV, VP, V
Pioneer Gen-E-Motor Co., 5841 Dickens Ave., Chicago 39, Ill.—INV
Point Mfg. Co., 5775 N. Ridge Ave., Chicago 26, Ill.—BE, M
Portapower—Electronic Laboratories, Inc.
Portapak—Electronic Laboratories, Inc.
Precision Electronics Co., 815 Washington St., Newtonville 60, Mass.—VT, PU, VR
Radiart Corp., 3571 W. 62nd St., Cleveland 2, Ohio—“Vipower”—VT, VP, V
Radio Receptor Co., Inc., 251 W. 19th St., New York 11, N. Y.—M
Radionic Controls, 3758 Belmont Ave., Chicago 18, Ill.—VR
Raytheon Mfg. Co., 55 Chapel St., Newton 58, Mass.—“Rectifier”—BE, VT, PU, VR

Ready Power Co., 3826 Grand River Ave., Detroit, Mich.—PU
Rectifier Engineering Co., 1809 E. 7th St., Los Angeles 21, Calif.—VT, M, PU
Rectifier—Raytheon Mfg. Co.
Rexsell—Electrical Facilities, Inc.
Richardson-Allen Corp., 15 W. 20th St., New York, N. Y.—INV, VT, BE, M, PU, VR
Russell Electric Co., 364 W. Huron St., Chicago 11, Ill.—INV
Schauer Machine Co., 2060 Reading Rd., Cincinnati 2, Ohio—BE, M, PU
Schuttig & Co., Ninth & Kearny Sts., N. E., Washington 17, D. C.—PU
Searle Aero Industries, Inc., P. O. Box 111, Orange, Calif.—PU
Setchell Carlson, Inc., 2233 University Ave., St. Paul 4, Minn.—V
Small Motors, Inc., 1322 Elston Ave., Chicago 22, Ill.—INV
Sorensen & Co., Inc., 375 Fairfield Ave., Stamford, Conn.—VR
Sorgel Electric Co., 838 W. National Ave., Milwaukee 4, Wis.—VT, MA, M, PU
S. O. S. Cinema Supply Corp., 449 W. 42nd St., New York 18, N. Y.—VR
Stancor—Standard Transformer Corp.
Standard Transformer Corp., 1500 N. Halsted St., Chicago 22, Ill.—“Stancor”—BE, VT, M, PU
States Co., 19 New Park Ave., Hartford 6, Conn.—VR
Stephens Mfg. Co., 10416 National Blvd., Los Angeles 34, Calif.—PU
Takk Corp., 28 W. Market St., Newark, Ohio—VT
Technical Apparatus Co., 1171 Tremont St., Boston 20, Mass.—VT
Teleregister Corp., 157 Chambers St., New York 7, N. Y.—PU
Thermionic Engineering Corp., 32 W. 12th St., Bayonne, N. J.—PU
Thompson, John E., Co., 1440 W. 47th St., Chicago 9, Ill.—VT
Thordarson Electric Mfg. Div., Maquire Industries, Inc., 500 W. Huron St., Chicago 10, Ill.—“Flashtron”—VR
Union Switch & Signal Co., Swissvale, Pa.—INV
U. S. Television Corp., 108 Seventh Ave., New York 11, N. Y.—VT, PU, VR
United Transformer Corp., 150 Varick St., New York 13, N. Y.—BE, VR
Utah Radio Products Co., 812-20 N. Orleans St., Chicago 10, Ill.—V
Viber Co., 726 S. Flower St., Burbank, Calif.—V
Vipower—Radart Co.
Vokar Corp., 7300 Huron River Drive, Dexter, Mich.—V
Ward Leonard Electric Co., 31 South St., Mt. Vernon, N. Y.—VR
Weltronic Co., 19500 W. Eight Mile Rd., Detroit 19, Mich.—BE, VT, VR
Westinghouse Elec. Corp., East Pittsburgh, Pa.—BE, VT, MA, M, PU, VR
Wincharger Corp., E. 7th at Division, Sioux City 6, Iowa—INV

Panoramic Radio Corp., 242-250 W. 55th St., New York 19, N. Y.—PI
Philco Corp., Toga & C Sts., Philadelphia 34, Pa.—ALC, PI, R
Radio Mfg. Engineers, Inc., 300-306 First Ave., Peoria 6, Ill.—R
Raytheon Mfg. Co., 55 Chapel St., Newton 58, Mass.—R
RCA Victor Division, Radio Corp. of America, Front & Cooper Sts., Camden, N. J.—R
Sperry Gyroscope Co., Inc., Great Neck, L. I., N. Y.—ALC, MN
Stromberg-Carlson Co., 100 Carlson Rd., Rochester 3, N. Y.—R
Submarine Signal Co., 160 State St., Boston, Mass.—R
U. S. Television Mfg. Corp., 106 Seventh Ave., New York 11, N. Y.—ALC, PI, R, O, RP, PPI
Western Electric Co., 195 Broadway, New York 7, N. Y.—R
Westinghouse Electric Corp., 300 W. Baltimore St., Baltimore 3, Md.—R

(31) Receivers, Home & Commercial



- AmateurA
AutomobileAU
Battery portableBP
Camera portableCP
Construction kitsCK
Facsimile (home)FH
FarmF
FM ConvertersFV
Phono-radio combinationsPR
Receivers, AM-FMFM
Recorder-radio combinationsRC
Television combinationsTC
Television convertersTV
Automatic alarmAL
AviationAN
Communication (AM)CA
Communication (FM)CF
Direction findingDF
Facsimile (radiophoto)FR
Fixed frequencyFF
MarineM
PanoramicPN
PolicePL
RailroadRR

(30) Radar Devices



- Altimeters (electronic)AL
Aircraft Landing ControlALC
Marine NavigationalMN
Plan-Position IndicatorsPPI
Proximity IndicatorsPI
Receivers (RCM, Razon, X Band)R
RepeatersRP
Oscilloscopes (Radar)O

Air Communications, Inc., 2233 Grand Ave., Kansas City, Mo.—ALC
Air-Track Mfg. Co., A Div. of Aerodynamic Research Corp., 5009 Calvert Road, College Park, Md.—R
American Electronics, 37 E. 18th St., New York 3, N. Y.—AL
Bendix Radio Division, Bendix Aviation Corp., E. Joppa Rd., Baltimore 4, Md.—ALC
Bludworth Marine, Div. National-Simplex-Bludworth, Inc., 100 Gold St., New York 7, N. Y.—MN
DeMornay-Budd, Inc., 475 Grand Concourse, New York 51, N. Y.—MN
DuMont Laboratories, Inc., Allen B., 2 Main Ave., Passaic, N. J.—O, PPI, RP
Fairchild Camera & Instrument Corp., 88-06 Van Wyck Blvd., Jamaica 1, L. I., N. Y.—R
Farnsworth Telev. & Radio Corp., 3700 Pontiac St., Ft. Wayne, Ind.—R
Federal Telephone & Radio Corp., 200 Mt. Pleasant Ave., Newark 4, N. J.—R
Galvin Mfg. Corp., 4545 Augusta Blvd., Chicago 51, Ill.—R
General Electric Co., 1 River Rd., Schenectady 5, N. Y.—R
Giffilan Bros., Inc., 1815 Venice Blvd., Los Angeles 6, Calif.—ALC
Mallicrafters Co., 2611 Indiana Ave., Chicago, Ill.—R
Hazeltime Electronics Corp., 1775 Broadway, New York, N. Y.—R

Abbott Instrument, Inc., 8 W. 18th St., New York, N. Y.—CA
Admiral Corp., 3800 Cortland St., Chicago, Ill.—“Admiral”—BP, FM, PV, PR, RC, TC
Air Associates, Inc., 5827 W. Century Blvd., Los Angeles 25, Calif.—A
Air Communications, Inc., 2233 Grand Ave., Kansas City, Mo.—DP, FM, FV, PR
Airadio, Inc., Melrose Ave. & Barry Place, Stamford, Conn.—CA, M
Aireon Corp., Fairfax & Funston Rds., Kansas City, Kans.—PR
Air King Prod. Co., Inc., 1523 63rd St., Brooklyn, N. Y.—“Air King”, “Pathe”—BP, FM, FV, PR, TC
Airplane & Marine Instruments, Inc., Clearfield, Pa.—AN, DF, M, RR, AU, A
Air-Track Mfg. Co., A Div. of Aerodynamic Research Corp., 5009 Calvert Rd., College Park, Md.—A, FV, CA, M
Alden Products Co., 117 North Main St., Brockton 64, Mass.—FR
Allied Radio Corp., 833 W. Jackson Blvd., Chicago 7, Ill.—“Knight”—BP, CK, FM, PR
American Communications Corp., 306 Broadway, New York, N. Y.—“American”—FM, FV, PR
American Radio Co., 611 E. Garfield Ave., Glendale 5, Calif.—PR, RC, CA, CP, FF
Andrea Radio Corp., 43-20 34th St., Long Island City, N. Y.—“Andrea Radio”—BP, F, FM, FV, PR, TC
Ansley Radio Corp., 41 St. Joes Ave., Trenton 9, N. J.—“Paneltone”—F, FM, FV, PR, TC
Apex Industries, 192 Lexington Ave., New York 16, N. Y.—FM
Arvin—Noblitt-Sparks Industries, Inc.
Atomic Heater & Radio Corp., 104 Park Row, New York, N. Y.—“Electro”—FM
Audar, Inc., subsidiary John Meck Industries, Argos, Ind.—A
Autocrat Radio Co., 3855 N. Hamilton Ave., Chicago, Ill.—FM, FV, PR
Automatic Radio Mfg. Co., Inc., 122 Brookline Ave., Boston, Mass.—“Automatic”, “Tom Thumb”—BP, F, FM, FV, PR
Autotone—Collins Radio Co.
Aviola Radio Corp., Sky Harbor Airport, Phoenix, Ariz.—“Aviola”—BP, CP, FM, FV, PR, RC, TV, A
Baronette Radio & Tube Corp., 220 Fifth Ave., New York, N. Y.—BP, FM, PR

Barr Electric Co., 1314 Forest Ave., Dallas, Tex.—
FM, PR, RC
Bassett, Inc., Rex, 311 N.W. 1st Ave., Fort Lauderdale, Fla.—“Radair”—AN, M, PL
Bell Radio & Television, 125 E. 46th St., New York 17, N. Y.—FM, FV, PR, TC
Belmont Radio Corp., 3921 W. Dickens Ave., Chicago, Ill.—“Belmont”—A, BP, FM, FV, PR, TC, AU
Bendix Radio, Div. of Bendix Aviation Corp., East Joppa Rd., Baltimore, Md.—“Bendix Radio”—BP, F, FM, FV, PR, TC, AN, CA, DE, FF, RR
Bendix Aviation Corp., Pacific Division, 11600 Sherman Way, No. Hollywood, Calif.—CA
Billmore Radio Corp., 15 Ave. A, New York 3, N. Y.—BP, FM, FV, PR, RC, TC
Browning Laboratories, Inc., 750 Main St., Winchester, Mass.—FV
Brunswick Radio & Telev. Div., Radio & Television, Inc., 241 Madison Ave., New York 16, N. Y.—PR, TC
Capehart Div., Farnsworth Telev. & Radio Corp., 3700 Pontiac St., Fort Wayne, Ind.—“Capehart”, “Capehart-Panamuse”—FM, PR, BP
Cavalcade Industries, Inc., 39 S. La Salle St., Chicago, Ill.—BP, FM, PR
City Radio Co., 501 E. Washington St., Phoenix, Ariz.—“Mighty Atom”—A
Clarion—Warwick Mfg. Corp.
Clearsonic—U. S. Television Mfg. Co.
Collins Radio Co., 2920 First Ave., Cedar Rapids, Iowa—“Autotune”—CA, M, A
Colonial Radio Corp., 251 Itano St., Buffalo, N. Y.—FM, FV, PR, TC, AU, BP, CP
Columbia Electronic, Inc., 185 E. 122nd St., New York, N. Y.—FM, FV, PR
Communications Co., Inc., 300 Greco Ave., Coral Gables 34, Fla.—“Conco”—AN, CA, FF, RR
Communications Equipment Corp., 134 W. Colorado St., Pasadena 1, Calif.—CA, M, PL
Concert Master—Mercury Electronic Labs., Inc.
Concord Radio Corp. (formerly Lafayette Radio Corp.), 901 W. Jackson Blvd., Chicago 7, Ill.—PR, FM, FV, AU, BP, RC
Continental Electronic Ltd., 81 Pine St., New York, N. Y.—“Sky-Weight”—BP, PR
Coronet Radio & Television Corp., 176 Seranton Ave., Lynbrook, L. I., N. Y.—FM, FV, PR
Crosley Corp., 1329 Arlington St., Cincinnati, Ohio—AU, BP, FV, FM, PR, TC
Crystal Products Co., 1519 McGee Trafficway, Kansas City, Mo.—“Coronet”—FM, FV
Delco Radio, Div. of General Motors Corp., Kokomo, Ind.—“Deleo Radio”—FM, FV, AU, BP, PR
Detrola Radio Corp.—See International Detrola Corp.
DeWald Radio Mfg. Corp., 440 Lafayette St., New York, N. Y.—“DeWald”—BP, FM, FV, PR
Dine, F. E. & Co., Inc., 2221 Warwick, Santa Monica, Calif.—A, BP, FM, FV
DuMont Laboratories, Inc., Allen B., 2 Main Ave., Passaic, N. J.—“Dumont”, “Teleset”—TC
Dynavox Corp., 40-55 21st St., Long Island City, N. Y.—PR
Eastern Electronics Corp., 41 Chestnut St., New Haven, Conn.—“Amphiphone”—BP, FM, PR
ECA Radio—Electronic Corp. of America
Echophone Div., Hallicrafters Co., 2611 S. Indiana Ave., Chicago 16, Ill.—“Echophone”—FM, PR, TC, A, BP, F
Eckstein Radio & Television Co., 1400 Harmon Pl., Minneapolis, Minn.—“Ekeko”, “Karadio”, “L.Tatro”—PR, AU, A, BP, F
Electrical Research & Mfg. Co., 3001 E. Pico Blvd., Los Angeles, Calif.—“Crest”—FM, BP
Electromatic Mfg. Co., 88 University Pl., New York, N. Y.—“Electromatic”—FM, PR, BP, CP, TC
Electronic Assembly Co., 9 Belvidere St., Boston 15, Mass.—“Tel-Rad Products”—CP
Electronic Corp. of America, 45 W. 18th St., New York, N. Y.—“Eca Radio”—FM, PR, TC, CP
Electronic Devices Co., 601 W. 26th St., New York, N. Y.—FM, FV, PR, TC, A, BP, CP, RC, TV
Electronic Engineers, 611 E. Garfield St., Garfield 5, Calif.—CA
Electronics, Inc., 645 Iowa St., Dubuque, Iowa—A, FM
Electronic Specialty Co., 3456 Glendale Blvd., Los Angeles 26, Calif.—“Ranger”—AN, DP
Emerson Radio & Phonograph Corp., 111 Eighth Ave., New York 11, N. Y.—BP, CP, F, PR, RC, TC, FM
Espey Mfg. Co., Inc., 528 E. 72nd St., New York 21, N. Y.—FM, PR, A
Fada Radio & Electric Mfg. Co., Inc., 30-20 Thomson Ave., Long Island City 1, N. Y.—“Fada”—BP, CP, F, FM, PR, RC, TC
Farnsworth Television & Radio Corp., Fort Wayne 1, Ind.—“Farnsworth”, “Capehart”, “Capehart-Panamuse”—AU, BP, RR, FM, PR, TC
Federal Telephone & Radio Corp., 591 Broad St., Newark, N. J.—“Federal”—FM, FV, PR, TC, AU, A
Ferrari, A. E., 55 W. 26th St., New York, N. Y.—BP, FM, PR
Fifth Telecommunications, Inc., 10 E. 40th St., New York 16, N. Y.—FH
Fisher Radio Co., 41 E. 47th St., New York, N. Y.—FM, FV, TC, PR
Fisher Research Laboratory, 1961 University Ave., Palo Alto, Calif.—“Fisherfone”—A
Five Star Radio Co., 416 Broadway, Cambridge, Mass.—FM, PR, RC
Flush Wall Radio Co., 15 Washington St., Newark, N. J.—FY
F. M. Radio Mfg. Co., Inc., 10408 Superior, Cleveland 8, Ohio—“Pin-Up Radio”—FM, PR

Fonda—Jefferson-Travis Radio Mfg. Corp.
Freed-Eisenmann—Freed Radio Corp.
Freed Radio Corp., 200 Hudson St., New York, N. Y.—“Freed-Eisenmann”—FM, FV, PR
Galvin Mfg. Corp., 4545 Augusta Blvd., Chicago, Ill.—“Motorola”—FM, PR, TC, AU, A, BP, CP
Garner Electronics Corp., 1100 W. Washington Blvd., Chicago 7, Ill.—“Tel-Rad”—A, BP, FM, PR
Garnet Radio Corp., 69 Glenwood Pl., East Orange, N. J.—FM
Garod Radio Corp., 70 Washington St., Brooklyn, N. Y.—FM, PR, TC, BP, CP, RC
Gem Radio & Television Co., 140 Liberty St., New York 16, N. Y.—A, FM, PR
General Communication Co., 330 Commonwealth Ave., Boston 15, Mass.—DE
General Electric Co., 1285 Boston Ave., Bridgeport, Conn.—“G.E.”—FM, PR, TC, A, BP, CP
General Television & Radio Corp., Div., Portable Products Corp., 2701 Lehmann Ct., Chicago, Ill.—“General Radio”—FM, PR, BP, F
Giffman Bros., 1815 Venice Blvd., Los Angeles, Calif.—“Giffman”—FM, A
Globe Electronics, Inc., 225 W. 17th St., New York, N. Y.—FM, PR, BP
Grady Instrument Co., 11 Bailey Ave., Watertown, Mass.—DE
Gray Radio Co., 730 Okeechobee Rd., W. Palm Beach, Fla.—DE, M
Greene Co., Charlton L., 9 Elliot St., Watertown 72, Mass.—“Musical Master”—FM, PR
Hallicrafters Co., 2611 S. Indiana Ave., Chicago, Ill.—A, AN, CA, CP, DE, FR, M, PN, PL, RR
Hamilton Radio Corp., 510 6th Ave., New York, N. Y.—“Olympic”—BP, PR, FM, FV
Hammarlund Mfg. Co., 160 W. 34th St., New York, N. Y.—“Super-Pro”—A
Har-Cam—Harvey Radio Laboratories, Inc.
Harris Mfg. Co., 2122 W. 7th St., Los Angeles, Calif.—FM, PR, F
Harvey Machine Co., Inc., 6200 Avalon Blvd., Los Angeles 3, Calif.—“Harcraft”—DE, FM, FV, PR, TC
Harvey Radio Laboratories, Inc., 447 Concord St., Cambridge, Mass.—“Har-Cam”—A
Harvey-Wells Electronics, Inc., Southbridge, Mass.—“Harvey-Wells”—CA, AN, DE, A
Heath Co., 305 Territorial, Benton Harbor, Mich.—AN
Herbach & Rademan Co., Mfg. Div., 517 Ludlow, Philadelphia 6, Pa.—AN, CA, M, PL, A
Higgins Industries, Inc., 2221 Warwick Ave., Santa Monica, Calif.—FM
Hoffman Radio Corp., 3761 S. Hill St., Los Angeles 7, Calif.—PR, FM, BP, CP, RC, TC
Howard Pacific Corp., 932 N. Western Ave., Los Angeles 27, Calif.—AM
Howard Radio Co., 1735 Belmont Ave., Chicago, Ill.—FM, PR, TC, BP, RC
Hudson American Corp., 25 W. 43rd St., New York, N. Y.—CA
Industrial Electronic Corp., 505 Court St., Brooklyn 31, N. Y.—“Simplon”—FM, PR
Industrial Electronics Co., 3370 Adeline St., Berkeley, Calif.—FM
Industrial Tool & Die Works, Inc., 2824 University Ave. S.E., Minneapolis, Minn.—“Industrial”, “Automestic”, “Mechanelec”—FM
International Detrola Corp., Beard Ave., Detroit 9, Mich.—FM, PR, TC, AU, BP, CP, F
Islip Radio Mfg. Corp., Beech St., Islip, N. Y.—“Irmco”—A, FM
Jameson Electronics Labs. Co., Inc., 115 Cooper Lane, Dayton, Ohio—“Jeleo”—FM
Jefferson, Inc., Ray, 40 E. Merrick Rd., Freeport, L. I., N. Y.—A, BP, M
Jefferson-Travis Radio Mfg. Corp., 245 E. 23rd St., New York, N. Y.—“Fonda”, “L.T.”—AU, AN, CA, M
Jewel Radio Corp., 583 Sixth Ave., New York 11, N. Y.—BP, FM, PR
Kaar Engineering Co., 619 Emerson St., Palo Alto, Calif.—CA, M, PL, A
Karadio—Eckstein Radio & Television Co.
Keith Radio Products, Bedford, Ind.—“Keith”—FM, FV, PR
Kinetic Electronics Corp., 235 E. 42nd St., New York 17, N. Y.—BP, FM, PR
Kingston Radio Co., Inc., Kokomo, Ind.—FM, FV, PR
Kluge Electronics, Inc., 1031 N. Alvarado St., Los Angeles 26, Calif.—A
Lafayette Radio—Radio Wire Television Corp.
La Magna Mfg. Co., 51 Clinton Pl., East Rutherford, N. J.—FM
Laurel Radio Mfg. Co., 3931 Monroe Ave., Wayne, Mich.—“Musique”—F, FM, CP
Lavoie Laboratories, Matawan-Freehold Rd., Morganville, N. J.—FM, PR
Lawton Products Co., Inc., 624 Madison Ave., New York 22, N. Y.—AN
Learn Inc., 110 Tonia Ave., Grand Rapids, Mich.—“Leuradio”—FM, PR, TC, BP, RC
Lertradio Corp., 4 St. Francis St., Newark, N. J.—FM
Lincoln Electronics Corp., 653 11th Ave., New York, N. Y.—FM, BP, CP, PR, RC, TC
Link, Fred M., 125 W. 17th St., New York, N. Y.—“Link Radio”—A
Magnavox Co., 2131 Buefer Rd., Ft. Wayne 4, Ind.—“Magnavox-Ilustravox”—FV, PR
Magnavox-Ilustravox—Magnavox Co.
Manuire Industries, Inc., Electronics Div., 342 W. Putnam Ave., Greenwich, Conn.—FM, FV, PR, TC, A, AN, M
Majestic Radio & Television Corp., St. Charles, Ill.—“Majestic Radio”—BP, FM, PR, TC

Marco Industries, 245 S. Beverly Dr., Beverly Hills, Calif.—“Marcola”—FM, AU, BP, PR, RC, TC
Maritime Radio Co., 24 Whitehall St., New York, N. Y.—FM, FV, TC
Mason Radio Products Co., 80 Prince St., Kingston, N. Y.—“Mason”—FM, PR, BP
McGrade Mfg. Co., E. W., 406 W. 34th St., Kansas City, Mo.—FM, FV, PR, A
Mechanelec—Industrial Tool & Die Works, Inc.
Meck Industries, John Liberty at Pennsylvania, Plymouth, Ind.—PR, FM, BP
Mec-Rad Div., Black Industries, 1400 E. 222nd St., Cleveland 17, Ohio—PR
Mectron Corp., Lawrence, Mass.—BP, FM, PR, RC, TC
Medco Mfg. Co., 5 W. 45th St., New York, N. Y.—FM, PR, TC
Megard Corp., 1601 S. Burlington Ave., Los Angeles, Calif.—“Electronix”—FM, FV, PR, TC, A
Meissner Mfg. Co., 936 N. Michigan Ave., Chicago, Ill.—FM, FV, PR, TC, TV, A, BP, CP, RC
Mercury Electronic Laboratories, Inc., 622 W. Kinzie St., Chicago 10, Ill.—“Concert Master”—BP, FM
Metropolitan Electronics & Instrument Co., 6 Murray St., New York 7, N. Y.—FM, PR, RC
Midland Mfg. Co., Decatur, Iowa—“Midland”—FM, FV
Midwest Radio Corp., 909 Broadway, Cincinnati, Ohio—“Midwest”—FM, PR
Millen Mfg. Co., James, 150 Exchange St., Malden, Mass.—“James Millen”—A
Minerva Corp. of America, 238 William St., New York, N. Y.—FM, PR, RC, TC, BP, CP
Motorola—Galvin Mfg. Corp.
Musicaire—Templeton Radio Mfg. Corp.
Music Master Radio Corp., 750 Main St., Hartford, Conn.—“Music Master”—FM, FV, PR, TC
Musitron Co., 223 W. Erie St., Chicago, Ill.—“Musitron”—FM
National Co., Inc., 61 Sherman St., Malden, Mass.—“HRO”, “NCC”—A, AN, CA, FM
Noblitt-Sparks Industries, Inc., Columbus, Ind.—“Arvin”—F, FM, PR, BP
Northeastern Engineering, Inc., Canal St., Manchester, N. H.—FM
Northern Radio Co., 2208 4th Ave., Seattle, Wash.—CA
Olympic—Hamilton Radio Corp.
Packard Mfg. Corp., 2900 Columbia Ave., Indianapolis, Ind.—“Packard”—PR
Pacific Electronics, Sprague at Jefferson, Spokane 5, Wash.—“Cruisader”—FM
Packard-Bell Co., 3443 Wilshire Blvd., Los Angeles, Calif.—“Packard-Bell”, “Phonocord”—FM, FV, PR, TC
Pan American Electric Co., Inc., 132 Front St., New York 5, N. Y.—FM, TC, PR, BP
Panamuse—Farnsworth Television & Radio Corp.
Paneltone—Asley Radio Corp.
Panoramic Radio Corp., 242-250 W. 55th St., New York 19, N. Y.—PN, A
Pathe—Air King Prod. Co., Inc.
Philco Corp., Tingo & C Sts., Philadelphia 34, Pa.—F, FM, PR, RC, TC, AU, AN, BP
Pilot Radio Corp., 37-06 36th St., Long Island City 1, N. Y.—“Pilot Radio”—BP, F, FM, PR
Pin-Up Radio—F. M. Radio Mfg. Co., Inc.
Pitometer Log Corp., 237 Lafayette St., New York 12, N. Y.—DF
Port-O-Matic Corp., 985 Madison Ave., New York, N. Y.—PR
Precision Specialties, 210 N. Western Ave., Los Angeles 4, Calif.—“Revell Plastics”—FM, PR
Premier Crystal Laboratories, Inc., 63 Park Row, New York 7, N. Y.—“Amphitron”—FM, PR
Press Wireless, Inc., 1475 Broadway, New York 18, N. Y.—A
Pro Electronics, 44 DeKalb Ave., Brooklyn, N. Y.—BP, CP, FM, PR
Promenette Radio & Television Corp., 1721 Elmwood Ave., Buffalo 7, N. Y.—FM
Puritone Radio Corp., 355 Main St., Poughkeepsie, N. Y.—FM, PR
Quality Industries, 25 E. Jackson Blvd., Chicago 4, Ill.—A
Radio Craftsmen, Inc., 1341 S. Michigan Ave., Chicago, Ill.—“Kitchenaire”—FM
Radio Development & Research Corp., 26 Cornillon Ave., Jersey City 4, N. J.—“Chromocord”, “Chronovox”—A, BP, FM, PR
Radio Engineering Laboratories, Inc., 35-54 36th St., Long Island City, N. Y.—CA
Radio Frequency Laboratories, Inc., Boonton, N. J.—AN
Radiola—RCA-Victor, Div. Radio Corp. of America
Radio Laboratories, Inc., 2701 California Ave., S.W., Seattle 5, Wash.—A, BP
Radio Mfg. Engineers, Inc., 300-306 First Ave., Peoria 6, Ill.—A, AN, FF
Radiomarine Corp. of America, 75 Varick St., New York 13, N. Y.—AL, DE, M
Radio Navigational Instrument Corp., 305 E. 63rd St., New York, N. Y.—PR, DF
Radio Process Co., 7618 Melrose Ave., Los Angeles 46, Calif.—“Aenlian”—PR
Radio Receptor Co., 251 W. 19th St., New York 11, N. Y.—CA
Radio Wire Television Corp., 100 Sixth Ave., New York, N. Y.—“Lafayette Radio”—BP, FM, PR
Rauar Products Corp., 60 E. 42nd St., New York 17, N. Y.—FM
Rauland Corp., 4245 N. Knox Ave., Chicago 41, Ill.—“Lyric”, “Magic-Tone”, “Visitron”—BP, FM, PR

RayEnergy Radio & Television Corp., 32 W. 22nd St., New York, N. Y.—Rayenergy—BP, FM, PR, RC
 RCA Victor Div., Radio Corp. of America, Camden, N. J.—"Radiola"—F, FM, PR, TC, AU, A, BP, CP
 Record-O-Vox, Inc., 721 N. Martel Ave., Hollywood 16, Calif.—"Symphony"—FM, FV, PR, RC, TC, TV, A, BP, CP
 Regal Electronics Corp., 20 W. 20th St., New York, N. Y.—"Regal"—"Ultradyn"—FM, PR, TC
 Remler Co., Lt., 2101 Bryant St., San Francisco, Calif.—BP, FM, PR
 Rex Electronic Corp., 1313 W. Randolph St., Chicago 7, Ill.—FM, PR
 RGH Mfg. Corp., 214 E. 41st St., New York 17, N. Y.—FM, PR
 Rock-Ola Mfg. Corp., 800 N. Kedzie, Chicago, Ill.—RC
 Schuttig & Co., Ninth & Kenny Sts., N.E., Washington 17, D. C.—AN, TC
 Scophony Corp. of America, 527 5th Ave., New York, N. Y.—TC
 Scott Radio Labs., Inc., 4450 Ravenswood Ave., Chicago, Ill.—"Scott"—A, FM, PR
 Sentinel Radio Corp., 2020 Ridge Ave., Evanston, Ill.—"Sentinel"—BP, CP, F, PR, FM, FV
 Setchell-Carlson, Inc., 2233 University Ave., St. Paul 1, Minn.—"Setchell-Carlson"—A, BP, FM
 Sheridan Electronics Corp., 2850 S. Michigan Ave., Chicago 16, Ill.—"Sheridan", "Vogue"—F, FM, PR, BP
 Signal Electronics, Inc., 114 E. 16th St., New York 3, N. Y.—FM, PR, BP
 Silver Co., McMurdo, 1240 Main St., Hartford 3, Conn.—A, CK, CA
 Sonora Radio & Television Corp., 325 N. Hoyne Ave., Chicago, Ill.—"Sonora"—BP, FM, FV, PR, TC, TV, AU
 Sparks-Withington Co., Jackson, Mich.—"Sparton"—F, FM, PR, BP
 Sparton Sparks-Withington Co.
 Speak-O-Phone Recording & Equipment Co., 23 W. 60th St., New York 23, N. Y.—RC
 Sperry Gyroscopic Co., Inc., Great Neck, L. I., N. Y.—AN, DF
 Stewart-Warner Corp., 1826 Diversey Pkwy., Chicago 14, Ill.—BP, F, FM, PR, TC
 Stoddard Aircraft Radio Co., 6644 Santa Monica Blvd., Hollywood 38, Calif.—AN
 Stromberg-Carlson Co., 100 Carlson Rd., Rochester 3, N. Y.—"Stromberg-Carlson"—F, FM, PR, RC, TC, BP
 Super-Pro—Hammarlund Mfg. Co.
 Symphonic Radio & Electronic Corp., 292 Main St., Cambridge 42, Mass.—"Symphonic"—BP, FM, PR
 Tac Industries, 44 DeKalb Ave., Brooklyn, N. Y.—BP, CP, FM, PR
 Tech-Master Products Co., 123 Prince St., New York 12, N. Y.—BP, FM, PR
 Teleset—Allen B. DuMont Laboratories, Inc.
 Teletone Radio Co., 609 W. 51st St., New York 19, N. Y.—"Teletone"—BP, FM, PR
 Telequip Radio Co., 1901 S. Washenaw Ave., Chicago, Ill.—PR, TC, TV
 Telicon Corp., 851 Madison Ave., New York, N. Y.—"Telicon"—FM, PR, TC
 Televox, Inc., 151 S. Fifth Ave., Mt. Vernon, N. Y.—FM, PR, RC
 Temco—Transmitter Equipment Mfg. Co.
 Templetone Radio Mfg. Corp., Garfield Ave., New London, Conn.—"Temple", "Musical"—FM, PR, TC, BP, CP
 Temple—Templetone Radio Mfg. Corp.
 Tom Thumb—Automatic Radio Mfg. Co., Inc.
 Transmitter Equipment Mfg. Co., Inc., 345 Hudson St., New York 14, N. Y.—"Hemco"—A
 Trav-Ler Karenola Radio & Tel. Corp., 571 W. Jackson, Chicago, Ill.—FM
 Trebor Radio Co., Box 497, Pasadena, Calif.—"Trebor"—F, BP
 U. S. Television Mfg. Co., 3 W. 61st St., New York 23, N. Y.—"UST", "Clearsonic", "Window to the World"—BP, FM, PR, TC
 UST—U. S. Television Mfg. Co.
 Vibraloc Mfg. Co., 325 Miguel St., San Francisco, Calif.—FM, PR
 Viewtone Co., 203 E. 18th St., New York, N. Y.—"Viewtone"—FM, PR, TC
 V-Lectrical Engineering Co., 828 N. Highland Ave., Los Angeles, Calif.—"Gilbert"—FM, PR, RC, TC
 Walker, Inc., 403 W. 8th St., Los Angeles, Calif.—FM, FV
 Warwick Mfg. Corp., 4610 W. Harrison St., Chicago, Ill.—"Clarion"—BP, FM, PR, TC
 Watterson Radio Mfg. Co., 2700 Swiss Ave., Dallas, Texas—"Watterson"—FM, PR, BP, RC
 Wells-Gardner & Co., 2701 N. Kildare Ave., Chicago 39, Ill.—"Wells-Gardner", "Arcadia"—FM, PR, AT, BP
 Western Electric Co., 195 Broadway, New York, N. Y.—AN, DF, FP, M, PL
 Western Sound & Electric Labs., Inc., 3512 W. St. Paul Ave., Milwaukee 8, Wis.—PR
 Westinghouse Electric Corp., Receiver Div., Sunbury, Penn.—F, FM, PR, TC, BP, CP
 Whiting & Davis, Inc., 23 W. Bacon St., Plainville, Mass.—FM, FV
 Wilcox Electric Co., Inc., 1400 Chestnut St., Kansas City 1, Mo.—CA, FP
 Wilcox-Gay Corp., 604 W. Seminary St., Charlotte, Mich.—F, RC
 Window to the World—U. S. Television Mfg. Co.
 Zenith Radio Corp., 6001 Dickens Ave., Chicago 39, Ill.—"Zenith Radio"—BP, F, FM, PR, AT

(32) Recording Equipment & Blanks



Code recordersCR
 Cutting headsCH
 Discs (blank)D
 EqualizersE
 Film recordersF
 Graphic recordersRG
 Magnetic wire recordersMT
 Needles (cutting)CN
 Record preforms and molding compoundsRP
 Recording machinesRM
 Recording machine assembliesRA
 Screws (feed)S
 TurntablesT

Acton Co., Inc., H. W., 370 7th Ave., New York 1, N. Y.—CN
 Advance Recording Products Co., 36-12 34th St., Long Island City, N. Y.—D
 Air King Products Co., Inc., 1523 63rd St., Brooklyn 19, N. Y.—RA
 Aireon Mfg. Corp., Electronics Div., Fairfax & Funston Rds., Kansas City 15, Kans.—MT
 Alden Products Co., 117 N. Main St., Brockton 64, Mass.—RG
 Alliance Mfg. Co., Alliance, Ohio—TT
 Allied Recording Products Co., 21-09 43rd Ave., Long Island City, N. Y.—CH, D, CN, RM, S, TT
 Ansley Radio Corp., 21-10 49th Ave., Long Island City 1, N. Y.—MT
 Astatic Corp., Harbor & Jackson, Conneaut, Ohio—CH, MT
 Audio Devices, Inc., 444 Madison Ave., New York 22, N. Y.—"Audiodesics", "Audiopoints"—D, CN
 Audiodesics—Audio Devices, Inc.
 Audiopoints—Audio Devices, Inc.
 Audio-Tone Oscillator Co., 237 John St., Bridgeport 3, Conn.—RG
 Autocrat Radio Co., 3855 N. Hamilton Ave., Chicago 18, Ill.—RM
 Automatic Electric Co., 1033 W. Van Buren St., Chicago, Ill.—MT
 Bakelite Corp., 30 E. 42nd St., New York 17, N. Y.—D, RP
 Barker & Williamson, Upper Darby, Pa.—E
 Bell Sound Systems, Inc., 1183 Essex Ave., Columbus 3, Ohio—RM
 Bendix Radio Division, Bendix Aviation Corp., E. Jopka Rd., Baltimore 4, Md.—MT
 Bernco Corp., E. M., Auricon Div., 5515 Sunset Blvd., Hollywood 28, Calif.—F, RM, RA
 Billmore Radio Corp., 15 Ave. A, New York 3, N. Y.—MT, RM
 Black Seal—Gould-Moody Co.
 Boehme, H. O., 915 Broadway, New York 10, N. Y.—CR, RG
 Bristol Co., Waterbury 91, Conn.—RG, S
 Brush Development Co., 3405 Perkins Ave., Cleveland 14, Ohio—"Soundmirror"—CH, MT
 Bunnell & Co., J. H., 81 Sprout St., Brooklyn 1, N. Y.—CR
 Caltron Co., Div. Frank Rieber, Inc., 11916 W. Pico Blvd., Los Angeles 34, Calif.—E, CH, D, MT, RM, Capitol Records, Inc., Sunset & Vine, Hollywood 28, Calif.—D
 Chase Brass & Copper Co., 236 Grand St., Waterbury 91, Conn.—S
 Commercial Radio Sound Corp., 575 Lexington Ave., New York 22, N. Y.—D, CN, RM, TT
 Conn. Ltd., C. G., 1101 E. Beardsley Ave., Elkhart, Ind.—MT, RM
 Continental Screw Co., New Bedford, Mass.—S
 Dayton Acme Co., 930 York St., Cincinnati 14, Ohio—F
 Diacoustic Laboratory, 1678 Channing Way, Pasadena 3, Calif.—CH, CN, RA
 Dickson Co., 7420 Woodlawn Ave., Chicago 19, Ill.—RG
 Dictaphone Corp., 420 Lexington Ave., New York 17, N. Y.—RM
 Duodisc—Duotone Co.
 Duotone Co., 799 Broadway, New York 3, N. Y.—"Duodisc"—CH, D, CN, RA, TT
 Eastern Amplifier Corp., 794 E. 140th St., New York 54, N. Y.—RM
 Eldeen Co., 504 N. Water St., Milwaukee 2, Wis.—CN
 Electronic Engineering Service & Labs., 114-38 Farmers Blvd. St. Albans 12, N. Y.—E, RM, RA, TT
 Electronic Engineers, 611 E. Garfield Ave., Glendale 5, Calif.—E
 Electronic Research Corp., 2655 W. 19th St., Chicago 8, Ill.—E
 Electronic Tube Corp., 1200 E. Mermald Lane, Chestnut Hill, Philadelphia 18, Pa.—F
 Elgin National Watch Co., 107 National St., Elgin, Ill.—CN
 Emerson Radio & Phonograph Corp., 111 Eighth Ave., New York 11, N. Y.—D, CN, RM, S, TT

Engineering Laboratories, Inc., 610-624 E. 4th St., Tulsa 3, Okla.—F, RG, RM
 Ericsson Screw Machine Products Co., Inc., 25 Lafayette St., Brooklyn 1, N. Y.—S
 Esterline-Angus Co., Inc., P. O. Box 596, Indianapolis 6, Ind.—RG
 Fairchild Camera & Instrument Corp., 8806 Van Wyck Blvd., Jamaica 1, N. Y.—CH, E, RM, TT
 Favorite Mfg. Co., 105 E. 12th St., New York 3, N. Y.—D
 Federal Recorder Co., Inc., 630 S. Wabash Ave., Chicago 5, Ill.—D, RM
 Film Crafts Engineering Co., 36 W. 25th St., New York 10, N. Y.—F
 Gates Radio Co., 220 Hampshire St., Quincy, Ill.—E, RM, RA, TT
 Gatti, Inc., Aurele M., 1909 Liberty St., Trenton 9, N. J.—CN
 Gem Phono Mfg., Inc., 7 W. 46th St., New York 19, N. Y.—D
 General Cement Mfg. Co., 919 Taylor Ave., Rockford, Ill.—D, CN, S
 General Electric Co., Receiver Div., 1285 Boston Ave., Bridgeport 2, Conn.—MT
 General Electric Co., Specialty Div., 1001 Wolf St., Syracuse, N. Y.—MT
 General Radio Co., 275 Massachusetts Ave., Cambridge 39, Mass.—RG
 General Winding Co., 420 W. 45th St., New York 19, N. Y.—TT
 Gentleman Products Div., Henney Motor Co., 1702 Cumling St., Omaha, Nebr.—RM
 Globe Industries, Inc., 125 Sunrise Pl., Dayton 7, Ohio—RM, RA, TT
 Goodall Electric Mfg. Co., Third & Main St., Ogallala, Nebr.—F
 Gould-Moody Co., 395 Broadway, New York 13, N. Y.—"Black Seal"—D, CN
 Graybar Electric Co., Inc., 420 Lexington Ave., New York 17, N. Y.—D, E, TT
 Gray Mfg. Co., 16 Arbor St., Hartford, Conn.—RM
 Haddorf Piano Co., 630 S. Wabash Ave., Chicago 5, Ill.—D, RM
 Hallcrafters Co., 2611 Indiana Ave., Chicago 16, Ill.—MT
 Hammond Instrument Co., 2915 N. Western Ave., Chicago 18, Ill.—MT
 Hart & Co., Inc., Frederick, 837 Main St., Poughkeepsie, N. Y.—CH, F, RM
 Hartford Machine Screw Co., 476 Capitol Ave., Hartford 2, Conn.—S
 Harvey Machine Co., Inc., 6200 Avalon Blvd., Los Angeles 3, Calif.—RA, TT
 Hathaway Instrument Co., 1315 S. Clarkson St., Denver, Colo.—RG
 Higgins Industries, Inc., 2221 Warwick Ave., Santa Monica, Calif.—MT, RM
 Home Recording Co., 699 E. 135th St., Bronx 54, N. Y.—"Melodisc"—D
 Hy-Pro Tool Co., New Bedford, Mass.—S
 Industrial Screw & Supply Co., 717 W. Lake St., Chicago 6, Ill.—S
 International Merit Products Corp., 254 W. 54th St., New York 19, N. Y.—CN, S
 Jefferson-Travis Corp., 245 E. 23rd St., New York 10, N. Y.—F
 J. F. D. Mfg. Co., 4117 Fort Hamilton Pkwy., Brooklyn 19, N. Y.—CN
 Kluge Electronics Co., 1031 N. Alvarado St., Los Angeles 26, Calif.—MT
 Lincoln Electronics Corp., 653 11th Ave., New York 19, N. Y.—MT
 Manufacturers Screw Products, 216 W. Hubbard St., Chicago, Ill.—S
 Mecanitron Corp., 711 Boylston St., Boston 16, Mass.—CR
 Megard Corp., 1601 S. Burlington Ave., Los Angeles 6, Calif.—E
 Melodisc—Home Recording Co.
 Melody Record Supply, Inc., 314 W. 52nd St., New York 19, N. Y.—CN
 Miles Reproducer Co., Inc., 812 Broadway, New York 3, N. Y.—CH, E, F, MT, CN, RM, RA
 Millco—M. A. Miller Mfg. Co.
 Miller Mfg. Co., M. A., 1169 E. 43rd St., Chicago 15, Ill.—"Millco"—CN
 Mirror Record Corp., 1133 Broadway, New York, N. Y.—D, MT
 Municipal Instrument Co., 3246 Cuyler Ave., Berwyn, Ill.—MT
 National Gasket & Washer Mfg. Co., 122 E. 25th St., New York 10, N. Y.—D
 National Screw & Mfg. Co., 2440 E. 75th St., Cleveland 4, Ohio—S
 New England Screw Co., Emerald St., Keene, N. H.—S
 Northern Communications Mfg. Co., 210 E. 40th St., New York 18, N. Y.—E, RM, RA
 Pacific Sound Equipment Co., 130 N. Beaudry Ave., Los Angeles 12, Calif.—"Port-Elec"—RM, RA, TT
 Packard Bell Co., 1115 S. Hope St., Los Angeles 15, Calif.—RM, MT
 Paralay Co., 600 S. Michigan Ave., Chicago 5, Ill.—CN, RM
 Patrick's Industries, 397 W. Marshall Ave., Ferndale 20, Mich.—RM
 Permo, Inc., 6415 Ravenswood Ave., Chicago 26, Ill.—"Permo Point"—CN
 Permo Point—Permo, Inc.
 Phonograph Needle Mfg. Co., Inc., 42-46 Dudley St., Providence 5, R. I.—S
 Plastic Fabricators Co., 440 Sansome St., San Francisco 11, Calif.—D
 Poinsettia, Inc., Cedar Ave., Pittman, N. J.—RP
 Port-Elec—Pacific Sound Equipment Co.

Presto Recording Corp., 242 W. 55th St., New York 19, N. Y.—CH, D, E, MT, CN, RM, RA, S, TT
 Quality Industries, Electronic Dept., 25 E. Jackson Blvd., Chicago 4, Ill.—RM, RA
 Radiad Service, 720 W. Schubert Ave., Chicago 14, Ill.—F, TT
 Radiotechnic Laboratory, 1328 Sherman Ave., Evanston, Ill.—MT
 Raytheon Mfg. Co., 55 Chapel St., Newton 58, Mass.—CR, MT, RM
 RCA Victor Division, Radio Corp. of America, Front & Cooper Sts., Camden, N. J.—"RCA"—CH, D, E, F, MT, CN, RM, RA, TT
 Recordisc Corp., 395 Broadway, New York, N. Y.—D, CN
 Recordit Co., 3028 Locust St., St. Louis 3, Mo.—D, CN, RM, TT
 Record-O-Vox, Inc., 721 N. Martel Ave., Hollywood 46, Calif.—MT, RM
 Recotone Corp., 212 5th Ave., New York N. Y.—D, CN
 Reeves Sound Laboratories, Div. Reeves-Ely Laboratories, Inc., 62 W. 47th St., New York, N. Y.—F
 Rek-O-Kut Co., 173 Lafayette St., New York 13, N. Y.—RM, TT
 Riggs & Jeffreys, Inc., 73 Winthrop St., Newark 4, N. J.—RM
 Robinson-Houchin Optical Co., 79 Thurman Ave., Columbus 6, Ohio—RM, RA
 Russell Electric Co., 340 W. Huron St., Chicago 10, Ill.—RA
 St. George Recording Equipment Corp., 76 Varick St., New York, N. Y.—MT, F, RM
 Schott Co., Walter L., 9306 Santa Monica Blvd., Beverly Hills, Calif.—"Walisco"—S
 Scott Radio Laboratories, Inc., E. H., 4450 Ravenswood Ave., Chicago 40, Ill.—MT
 Scovill Mfg. Co., P. O. Box 98, Waterville 48, Conn.—S
 Scully Machine Co., 62 Walter St., Bridgeport 8, Conn.—RM
 Seeburg Corp., J. P., 1500 Dayton St., Chicago, Ill.—MT, RM
 Shure Bros., 225 W. Huron St., Chicago 10, Ill.—CH, MT
 Sillocks-Miller Co., 10 W. Parker Ave., Maplewood, N. J.—D
 Sonora Radio & Television Corp., 325 N. Hoyne Ave., Chicago 12, Ill.—MT

S. O. S. Cinema Supply Corp., 449 W. 42nd St., New York 18, N. Y.—F, RM
 Sound Devices Co., Inc., 160 E. 116th St., New York, N. Y.—D
 Soundmirror—Brush Development Co.
 SoundScriber Corp., 82 Audubon St., New Haven 11, Conn.—RM
 Speak-O-Phone Recording & Equipment Co., 23 W. 60th St., New York 23, N. Y.—D, CN, RM, RA, S, TT
 Stamford Metal Specialty Co., 428 Broadway, New York 13, N. Y.—S
 Stephens Mfg. Co., 10416 National Blvd., Los Angeles 34, Calif.—E, F, CN, RM, RA, S, TT
 Stromberg-Carlson Co., 100 Carlson Rd., Rochester 3, N. Y.—MT
 United Cinephone Corp., 65 New Litchfield St., Torrington, Conn.—TT
 U. S. Television Corp., 106 Seventh Ave., New York 11, N. Y.—MT
 United Transformer Corp., 150 Varick St., New York 13, N. Y.—E
 Universal Microphone Co., 424 Warren Lane, Inglewood, Calif.—CH, RA
 Utah Radio Products Co., 812-20 N. Orleans St., Chicago 10, Ill.—MT
 V-M Corp., 4th & Park Sts., Benton Harbor, Mich.—RM, RA
 Walisco—Walter L. Schott Co.
 Webster-Chicago Corp., 5622 Bloomingdale Ave., Chicago 39, Ill.—MT
 Webster Electric Co., 1900 Clark St., Racine, Wis.—CH, MT
 Western Electric Co., 195 Broadway, New York 7, N. Y.—MT
 Western Sound & Electric Laboratories, Inc., 3512 W. St. Paul Ave., Milwaukee, Wis.—RM
 Whe-Gro Co., 3028 Locust St., St. Louis 3, Mo.—D, CN, RM, RA, S
 Wilcox-Gay Corp., Charlotte, Mich.—"Wilcox-Gay"—D, CN, RM
 Willson Plastics Division, Willson Magazine Camera Co., 6022 Media St., Philadelphia 31, Pa.—D
 WiRecorder Corp., Stroth Bldg., Detroit, Mich.—MT
 Wire Recorder Development Corp., Armour Research Foundation, 8 S. Michigan Ave., Chicago 3, Ill.—MT
 York Electric & Machine Co., Carllotone Div., 30-34 N. Penn St., York, Pa.—RA, TT
 Zephyr Products Co., 160 E. 116th St., New York 29, N. Y.—D

Chicago Recording Co., 221 N. LaSalle St., Chicago, Ill.—RS
 Chicago Recording Studios, Inc., 64 E. Jackson St., Chicago, Ill.—RS
 Chicago Sound Systems Co., 2124 S. Michigan Ave., Chicago, Ill.—ARC
 Cine-Marl, 55 W. 42nd St., New York, N. Y.—RS
 Clark Radio Equipment Corp., 4313 N. Lincoln Ave., Chicago 18, Ill.—TR, TT
 Classic Point—Elden Co.
 Coda Record Co., 1291 Sixth Ave., New York 19, N. Y.—R
 Columbia Recording Corp., 1473 Barmm Ave., Bridgeport 8, Conn.—"Columbia", "Masterworks", "Okeh"—FR, N, R, RC, S, RS
 Columbia Recording Corp., 799 7th Ave., New York, N. Y.—RS
 Comet Record Co., 420 Lexington Ave., New York, N. Y.—R
 Commercial Radio Sound Corp., 575 Lexington Ave., New York 22, N. Y.—ARC, TR, TT
 Commodore Record Co., 415 Lexington Ave., New York, N. Y.—R
 Communicating Systems, Inc., 201-200 E. 18th St., New York 3, N. Y.—EL
 Conn. Telephone & Electric Div., Great American Industries, 70 Britannia St., Meriden, Conn.—EL
 Continental Record Co., Inc., 265 W. 54th St., New York 19, N. Y.—R, RC, RM
 Contract Specialties Co., 1743 LaBrosse St., Detroit 16, Mich.—F
 Cosmopolitan Records, Inc., 745 Fifth Ave., New York, N. Y.—R
 Crescent Tool & Die Co., 4140 W. Belmont Ave., Chicago, Ill.—ARC
 Criterion Products Co., 19 W. 44th St., New York, N. Y.—R
 Davis Music Co., Inc., Joe, 331 W. 51st St., New York 19, N. Y.—R
 Decca Records, Inc., 50 W. 57th St., New York 19, N. Y.—"Decca"—R, RS
 Diacoustic Laboratory, 1678 Channing Way, Pasadena 3, Calif.—N
 Duotone Co., 799 Broadway, New York 3, N. Y.—N, TT
 D-X Radio Products Co., 1200 N. Claremont Ave., Chicago 22, Ill.—N
 Eastern Electronics Corp., 41 Chestnut St., New Haven, Conn.—EL, ARC
 Eastern Sound Recording Co., 46 W. 84th St., New York, N. Y.—RS
 Eccles Disc Recordings, Inc., 6233 Hollywood Blvd., Los Angeles, Calif.—RS
 Elden Co., 504 N. Water St., Milwaukee 2, Wis.—"Classic Point", "Maestro Point", "Merit Point", "Victory Point"—N
 Electromatic Mfg. Corp., 88 University Pl., New York 3, N. Y.—EL
 Electronic Corp. of America, 45 W. 18th St., New York 11, N. Y.—EL
 Electronic Engineering Service & Laboratories, 114-38 Farmers Blvd., St. Albans 12, N. Y.—TR, TT
 Electro Recording & Broadcasting Studio, 310 N. Verdugo Rd., Glendale, Calif.—RS
 Electro-Vox Recording Studios, 5546 Melrose Ave., Los Angeles, Calif.—RS
 Elgin National Watch Co., 107 National St., Elgin, Ill.—N
 Emerson Radio & Phonograph Corp., 111 Eighth Ave., New York 11, N. Y.—ARC, EL, N, PC, TT
 Empire Broadcasting Corp., 480 Lexington Ave., New York, N. Y.—RS
 Erwood Co., 223 W. Erie St., Chicago 10, Ill.—ARC, TR
 Espey Mfg. Co., Inc., 528 E. 72nd St., New York 21, N. Y.—EL
 Fairchild Camera & Instrument Corp., 8806 Van Wyck Blvd., Jamaica 1, N. Y.—PC, D, TR, TT
 Farnsworth Television & Radio Corp., Fort Wayne 1, Ind.—ARC
 Fidelitone—Permo, Inc.
 Film Crafts Engineering Co., 36 W. 25th St., New York 10, N. Y.—PM
 Fischer, Carl, Inc., 119 W. 57th St., New York, N. Y.—RS
 Flock Process Co., Velvetone Div., 3 Quiney St., Norwalk, Conn.—F, TT
 Gala Record Co., 350 Fifth Ave., New York, N. Y.—R
 Galvin Mfg. Corp., 4545 Augusta Blvd., Chicago 51, Ill.—"Motorola"—ARC, N
 Gamble Hinged Music Co., 228 S. Wabash, Chicago, Ill.—RS
 Garner Electronics Corp., 1100 W. Washington Blvd., Chicago 7, Ill.—EL, F, TR, TT
 Garrard Sales Corp., 401 Broadway, New York 13, N. Y.—ARC, EL, N, PC, PM, TR, TT
 Gates Radio Co., 220 Hampshire St., Quiney, Ill.—TR, TT
 Gatti, Aurele M., Inc., 1909 Liberty St., Trenton 9, N. J.—N
 Gem Phono Mfg., Inc., 7 W. 46th St., New York 19, N. Y.—N
 Gem Radio & Television Co., 303 W. 42nd St., New York 18, N. Y.—EL
 General Cement Mfg. Co., 919 Taylor Ave., Rockford, Ill.—F, N
 General Electric Co., Receiver Div., 1285 Boston Ave., Bridgeport 2, Conn.—EL
 General Electric Co., Specialty Div., 1001 Wolf St., Syracuse, N. Y.—PM
 General Industries Co., Taylor & Olive Sts., Elyria, Ohio—ARC
 General Instrument & Appliance Corp., 829 Newark Ave., Elizabeth 3, N. J.—ARC
 General Phonograph Corp., Putnam, Conn.—N

(33) Records, Transcriptions & Playing Equipment



- Automatic record changersARC
- Broadcast transcriptionsBT
- Coin record playersCM
- Electric phonographsEL
- See also Receivers, AM-FM
- Felt-flock, turntableF
- Frequency recordsFR
- Hand wound phonographs.....HW
- NeedlesN
- Pick-ups (crystal)PC
- Pick-ups (dynamic)D
- Pick-ups (magnetic)PM
- RecordsR
- Record compoundsRC
- Record pressersRM
- Recording servicesRS
- Sound effect recordsS
- Transcription record playersTR
- TurntablesTT

Acme Radio & Sound Labs., 3528 City Terr. Dr., Los Angeles, Calif.—RS
 Acton Co., Inc., H. W., 370 7th Ave., New York 1, N. Y.—"Actone"—N
 Actone—H. W. Acton Co., Inc.
 Admiral Corp., 3800 W. Cortland St., Chicago 47, Ill.—ARC
 Advance Research Corp., 214 W. 42nd St., New York, N. Y.—ARC, CM
 Adver-Disc Co., 500 N. Western Ave., Los Angeles, Calif.—RS
 Advertisers Recording Service, Inc., 113 W. 57th St., New York, N. Y.—RS
 Air-Chek Co., 5546 Melrose Ave., Los Angeles, Calif.—RS
 Aireon Mfg. Corp., Fairfax & Funston Rds., Kansas City 15, Kans.—ARC, CM
 Alliance Mfg. Co., Alliance, Ohio—F, TT
 Allied Record Mfg. Co., 1041 N. Las Palmas Ave., Los Angeles, Calif.—RS
 American Products Mfg. Co., Oleander & Dublin Sts., New Orleans 18, La.—RC
 Andrea Radio Corp., 43-20 34th St., Long Island City 1, N. Y.—ARC
 ARA Records, 686 N. Robertson Blvd., Hollywood 46, Calif.—R
 Arts Recording Co., Inc., 29 W. 57th St., New York, N. Y.—RS

Asch Recording Studios, 117 W. 46th St., New York 19, N. Y.—R, RS
 Associated Recorders, 1511 N. Cahuenga, Los Angeles, Calif.—RS
 Associated Studios, 6560 Hollywood Blvd., Los Angeles, Calif.—RS
 Astatic Corp., Harbor & Jackson, Conneaut, Ohio—N, PC
 Audak Co., 500 Fifth Ave., New York 18, N. Y.—"Audax"—PM
 Audax—Audak Co.
 Audio Devices, Inc., 444 Madison Ave., New York 22, N. Y.—"Audiopoint"—N
 Audio Industries, Michigan City, Ind.—EL
 Audionip—Audio Devices, Inc.
 Audio-Scripts, Inc., 1619 Broadway, New York, N. Y.—RS
 Audio-Tone Oscillator Co., 237 John St., Bridgeport 3, Conn.—FR
 Austin Co., O., 335 Throop Ave., Brooklyn 21, N. Y.—F
 Aviola Radio Corp., Phoenix, Ariz.—ARC
 Bakelite Corp., 30 E. 42nd St., New York 17, N. Y.—RC
 Barker & Williamson, Upper Darby, Pa.—EL
 Beacon Record Co., 331 W. 51st St., New York, N. Y.—R
 Bell Sound Systems, Inc., 1183 Essex Ave., Columbus 3, Ohio—EL, TR, TT
 Bibletone, 354 Fourth Ave., New York 10, N. Y.—R
 Biltmore Radio Corp., 15 Ave. A, New York 3, N. Y.—CM, EL
 Birch—Boetsch Bros.
 Black & White Record Co., 2117 Foster Ave., Brooklyn, N. Y.—R
 Blue Bird—RCA Victor
 Blue Note Records, 2125 Third Ave., New York, N. Y.—R, PS
 Boetsch Bros., 221 E. 144th St., New York 51, N. Y.—"Bireh"—ARC, EL
 Bogen Co., Inc., David, 668 Broadway, New York 12, N. Y.—EL, TR, TT
 Bost Records Co., 29 W. 57th St., New York 19, N. Y.—R, RS
 Bradley, Richard & Associates, 20 N. Warker Dr., Chicago, Ill.—RS
 Bronze Recording Studio, 623 E. Vernon, Los Angeles, Calif.—RS
 Brush Development Co., 3405 Perkins Ave., Cleveland 14, Ohio—PC
 Caltran Co., Div. of Frank Rieber, Inc., 11916 W. Pico Blvd., Los Angeles 34, Calif.—PM
 Capehart Div., Farnsworth Telev. & Radio Corp., 3700 Pontiac St., Fort Wayne, Ind.—CM
 Capital Records, Inc., Sunset & Vine, Hollywood 28, Calif.—BT, EL, N, R
 Carnegie Hall Recording Co., Carnegie Hall, New York, N. Y.—RS
 Cellulose Products, Inc., 500 N. Madison St., Rockford, Ill.—F

Gentleman Products Div., Henney Motor Co., 1702 Cuming St., Omaha, Nebr.—EL
 Glendale's Radio City, 310 N. Verdugo Rd., Glendale, Calif.—RS
 Glenn Glen Sound Co., 1422 Lynn Pl., Los Angeles, Calif.—RS
 Globe Industries, Inc., 125 Sunrise Pl., Dayton 7, Ohio—EL, TR, TT
 Godfrey Manufacturing Co., 171 S. 2nd St., Milwaukee 4, Wis.—EL
 Golden Point—Lowell Needle Co.
 Goldentone—Lowell Needle Co.
 Gould-Moody Co., 395 Broadway, New York 13, N. Y.—N
 Graybar Electric Co., Inc., 420 Lexington Ave., New York 17, N. Y.—D, TR, TT
 Guild Records, 665 Fifth Ave., New York, N. Y.—R
 Hallcrafters Co., 2611 S. Indiana Ave., Chicago 16, Ill.—EL
 Hamilton Radio Corp., 510 Sixth Ave., New York 11, N. Y.—EL
 Harmax Recording Studios, 1697 Broadway, New York, N. Y.—RS
 Harmonia Records, 1328 Broadway, New York, N. Y.—R
 Harrison Recording Studios, 1697 Broadway, New York, N. Y.—RS
 Hartley-Holt, 730 Fifth Ave., New York 19, N. Y.—TR, TT
 Harvey Machine Co., Inc., 6200 Avalon Blvd., Los Angeles 3, Calif.—ARC, TT
 Herback & Rademan Co., Mfg. Div., 517 Ludlow, Philadelphia 6, Pa.—EL, TR
 Heroservice, 45 W. 45th St., New York 19, N. Y.—S H. & H. Recording Co., 6306 S. Cottage Grove Ave., Chicago, Ill.—RS
 Hilo—Shure Bros.
 Hollywood Music Recdg. Studios, 6019 Hollywood Blvd., Los Angeles, Calif.—RS
 Hollywood Recording, 6225 Sunset Blvd., Los Angeles, Calif.—RS
 H. T. Hit Service, 105 Court St., Brooklyn, N. Y.—R
 Independent Music Co., 65 University Pl., New York, N. Y.—RS
 International Detrola Corp., 1501 Beard St., Detroit, Mich.—ARC
 International Merit Products Corp., 254 W. 54th St., New York 19, N. Y.—N
 Jackson Industries, 1708 S. State St., Chicago, Ill.—EL
 Jamboree Records, Inc., 1650 Broadway, New York 19, N. Y.—R
 Jensen Industries, Inc., 737 N. Michigan Ave., Chicago 11, Ill.—N
 Keeney & Co., Inc., J. H., 6610 S. Ashland Ave., Chicago 36, Ill.—CM
 Keynote Recordings, Inc., 522 Fifth Ave., New York 18, N. Y.—R
 Kismet Record Co., 227 E. 14th St., New York 3, N. Y.—R
 Kuehn, J. J., Sound Film Lab., 728 W. Buckingham, Chicago, Ill.—RS
 Lewis Sound Film Productions, 71 W. 45th St., New York, N. Y.—RS
 Lincoln Electronics Corp., 653 11th Ave., New York, N. Y.—ARC, EL, TR
 Lindam & Romaine Recording Studios, 1408 W. 48th St., Los Angeles, Calif.—RS
 Literary Classics, Inc., 1780 Broadway, New York, N. Y.—RS
 Lowell Needle Co., 1 Wildore St., Putnam, Conn.—"Goldenpoint", "Goldentone"—N
 MacGregor, C. P., Sound Studios, 729 S. Western Ave., Los Angeles, Calif.—RS
 Maestro Point—Eldeen Co.
 Magnavox Co., Fort Wayne 4, Ind.—ARC, EL
 Maguire Industries, Inc., 1437 Railroad Ave., Bridgeport, Conn.—ARC
 Maguire Industries, Inc., Electronics Div., 342 W. Putnam Ave., Greenwich, Conn.—ARC
 Majestic Radio & Television Corp., St. Charles, Ill.—R
 Manor Record Co., 5 Pomona Ave., Newark 3, N. J.—R
 Masterworks—Columbia Recording Corp.
 Megard Corp., 1601 S. Burlington Ave., Los Angeles 6, Calif.—EL
 Melody Record Supply, Inc., 314 W. 52nd St., New York 19, N. Y.—N
 Mercury Recording Studio, 232 E. Erie, Chicago, Ill.—RS
 Merit Point—Eldeen Co.
 Metropolitan Recording Studios, 1697 Broadway, New York, N. Y.—RS
 Miles Reproducer Co., Inc., 812 Broadway, New York 3, N. Y.—CM, N, D, PM
 Miller Mfg. Co., M. A., 1169 E. 43rd St., Chicago 15, Ill.—"Milico"—N
 Milwaukee Stamping Co., 800 S. 72nd St., Milwaukee 14, Wis.—ARC
 Motorola—Galvin Mfg. Corp.
 Musette Publishers, Inc., 113 W. 57th St., New York 19, N. Y.—R
 Musicraft Corp., 40 W. 46th St., New York 19, N. Y.—R
 Music Sound Track Serv., Inc., 1600 Broadway, New York, N. Y.—RS
 Mutual Recording Co., 5205 Hollywood Blvd., Los Angeles, Calif.—RS
 Muzak Corp., 151 W. 46th St., New York, N. Y.—RS
 Muzak Transcriptions, Inc., 221 N. LaSalle St., Chicago, Ill.—RS
 National Broadcasting Co., Inc., 222 W. North Bank, Chicago, Ill.—RS

National Broadcasting Co., Inc., Sunset & Vine, Los Angeles, Calif.—RS
 National Die Casting Co., 600 N. Albany Ave., Chicago 12, Ill.—ARC, CM
 National Recdg. & Film Corp., 20 N. Wacker Dr., Chicago, Ill.—RS
 National Records Co., 1841 Broadway, New York 23, N. Y.—R
 National Vocarium, 610 5th Ave., New York, N. Y.—RS
 Newcomb Audio Products Co., 2815 S. Hill St., Los Angeles 7, Calif.—CM, EL, TR, TT
 Nola Studios, 113 W. 57th St., New York, N. Y.—RS
 Northern Communications Mfg. Co., 210 E. 40th St., New York 16, N. Y.—EL, TR, TT
 Oak Mfg. Co., 1260 Clybourn Ave., Chicago 10, Ill.—ARC
 Okel—Columbia Recording Corp.
 Pacific Electronics, W. 1011-1013 First Ave., Spokane 5, Wash.—ARC, PC, TR
 Pacific Sound Equipment Co., 130 N. Beaudry Ave., Los Angeles 12, Calif.—"Port-Elec."—EL, F, N, PC, PM, TR, TT
 Paralyo Co., 600 S. Michigan Ave., Chicago 5, Ill.—N
 Paramount Radio Sales & Serv., 3477 Broadway, New York, N. Y.—RS
 Permo, Inc., 6415 Ravenswood Ave., Chicago 26, Ill.—"Fideltone", "Permo Point"—N
 Permo Point—Permo, Inc.
 Pfanstiel Chemical Co., 104 Lakeview Ave., Waukegan, Ill.—N
 Philco Corp., Tioga & C Sts., Philadelphia 34, Pa.—ARC, EL, PC, D
 Phonograph Needle Mfg. Co., Inc., 42-46 Dudley St., Providence 5, R. I.—"Supreme"—N
 Phonola—Waters-Conley Co.
 Phono-Rec. Mfg., Inc., 314 W. 52nd St., New York 19, N. Y.—N
 Pickering & Crowe Laboratories, 475 Fifth Ave., New York 17, N. Y.—PM
 Poinsettia, Inc., Cedar Ave., Pitman, N. J.—R, RC, RM
 Port-Elec.—Pacific Sound Equipment Co.
 Precise Development Parts, 28 N. Loomis St., Chicago, Ill.—ARC
 Precision Recording Co., 1912 S. Cursen Ave., Los Angeles, Calif.—RS
 Presto Recording Corp., 242 W. 55th St., New York 19, N. Y.—N, PM, TR, TT
 Radiad Service, 720 W. Schubert Ave., Chicago 14, Ill.—TR, TT
 Radio Frequency Laboratories, Inc., Boonton, N. J.—EL
 Radio Recorders, Inc., 7000 Santa Monica Blvd., Los Angeles, Calif.—RS
 Radio Recording Studio, 1619 Broadway, New York, N. Y.—RS
 Rauland Corp., 4245 N. Knox Ave., Chicago 41, Ill.—TR
 RCA Victor Division, Radio Corp. of America, Front & Cooper Sts., Camden, N. J.—ARC, EL, F, FR, N, PC, D, PM, R, RC, RM, S, TR, TT
 RCA Victor Division, Victor Recording Studio, 155 E. 24th St., New York, N. Y.—RS
 Recordit Co., 3028 Locust St., St. Louis 3, Mo.—N, RC, S, TR, TT
 Record-O-Siers Recording Studios, 6560 Hollywood Blvd., Los Angeles, Calif.—RS
 Record-O-Vox, Inc., 721 N. Martel Ave., Hollywood 46, Calif.—ARC, EL, PC, CM
 Recoton Corp., 212 5th Ave., New York, N. Y.—N
 Red Seal—RCA Victor
 Reeves Sound Studios, Inc., 1600 Broadway, New York, N. Y.—RS
 Regal Electronics Corp., 20 W. 20th St., New York 11, N. Y.—TR
 Rek-O-Kut Co., 173 Lafayette St., New York 13, N. Y.—TR, TT
 Riggs & Jeffreys, Inc., 73 Winthrop St., Newark 4, N. J.—EL, TR
 Rockfill Radio, Inc., 18 E. 50th St., New York, N. Y.—RS
 St. George Recording Equipment Corp., 76 Varick St., New York, N. Y.—PM
 Sandwick Associates, L. M., 223 W. Erie St., Chicago 10, Ill.—EL, HW, TR, TT
 Savoy Record Co., 58 Market St., Newark, N. J.—R
 Sav-Way Industries, P. O. Box 117, Harper Sta., Detroit 13, Mich.—R
 Schirmer, G., Inc., 3 E. 43rd St., New York, N. Y.—RS
 Schott Co., Walter L., 9306 Santa Monica Blvd., Beverly Hills, Calif.—"Walseco"—F, RC
 Schulmerich Electronics, Inc., 220-228 N. Main St., Sellersville, Pa.—TR
 Scranton Record Co., 100 W. Poplar St., Scranton 9, Pa.—CM, R
 Seeburg Corp., J. P., 1510 N. Dayton St., Chicago 22, Ill.—ARC, CM, EL
 Seeco Records, Inc., 1393 Fifth Ave., New York 29, N. Y.—R
 Seva Record Co., 45 E. 49th St., New York 17, N. Y.—R
 Shure Bros., 225 W. Huron St., Chicago 10, Ill.—"Hijlo"—"Zephyr"—N, PC
 Signal Electronics, Inc., 114 E. 16th St., New York 3, N. Y.—EL

Simpson Mfg. Co., Mark, 188 W. 4th St., New York 14, N. Y.—ARC, EL, TR
 Sonart Record Corp., 251 W. 42nd St., New York, N. Y.—R
 Songcraft, Inc., 1650 Broadway, New York, N. Y.—RS
 Sonora Products, Inc., 2023 W. Carroll Ave., Chicago 12, Ill.—R
 Sorkin Music Co., 251 Fourth Ave., New York 10, N. Y.—"Beltone"—M
 Sound-On-Film Recording Studios, 177 Madison Ave., New York, N. Y.—RS
 Sound Workshop, 145 N. La Cienega Blvd., Los Angeles, Calif.—RS
 Souvenir Recording Studio, 55 Olvera St., Los Angeles, Calif.—RS
 Spanish Sound Studios, 41 E. 42nd St., New York, N. Y.—RS
 Sparkes Mfg. Co., Ltd., 318 Jefferson St., Newark 5, N. J.—ARC
 Speak-O-Phone Recording & Equipment Co., 23 W. 60th St., New York 23, N. Y.—EL, N
 Spot Film Productions, Inc., 339 E. 48th St., New York, N. Y.—RS
 Standard Phonograph Co., 163 W. 23rd St., New York, N. Y.—R
 Standard Radio, 1 E. 54th St., New York, N. Y.—RS
 Standard Radio, 6404 Hollywood Blvd., Los Angeles, Calif.—RS
 Starr Piano Co., 1344 S. Flower, Los Angeles, Calif.—RS
 Stephens Mfg. Co., 10416 National Blvd., Los Angeles 34, Calif.—R, TR, TT
 Sterling Record Co., 7 W. 46th St., New York, N. Y.—R
 Studio & Artists Recorders, 6107 Sunset Blvd., Los Angeles, Calif.—RS
 Supreme—Phonograph Needle Mfg. Co.
 Sweum Studios, 636 S. Ardmore Ave., Los Angeles, Calif.—RS
 Technical Radio Co., 275 9th St., San Francisco, Calif.—EL, PM, TR, TT
 Tel-A-Recording, Inc., 2 W. 46th St., New York, N. Y.—RS
 Telefilm, Inc., 6039 Hollywood Blvd., Los Angeles, Calif.—RS
 Tongood, L. S., Recording Co., 221 N. LaSalle St., Chicago, Ill.—RS
 Transcription Broadcasting Studios, 1650 Broadway, New York, N. Y.—RS
 Transcriptions, Inc., 29 W. 57th St., New York, N. Y.—RS
 Turner Co., 909 17th St., N. E., Cedar Rapids, Iowa—PM
 United Broadcasting Co., 64 E. Lake St., Chicago, Ill.—RS
 United Cinephone Corp., 65 New Litchfield St., Torrington, Conn.—PM, TR, TT
 United Loose Leaf Co., 233 Spring St., New York 13, N. Y.—RA
 United Research Labs., 1650 Broadway, New York, N. Y.—RS
 U. S. Record Corp., 400 Madison Ave., New York, N. Y.—RS
 Universal Microphone Co., 424 Warren Lane, Inglewood, Calif.—FR
 Universal Recorders, 6757 Hollywood Blvd., Los Angeles, Calif.—RS
 Universal Recording Co., Inc., 1270 Sixth Ave., New York, N. Y.—RS
 Urab Recording Studio, 245 W. 34th St., New York, N. Y.—RS
 Victor—RCA Victor
 V-M Corp., 4th & Park Sts., Benton Harbor, Mich.—ARC
 Voice of the Church, 500 N. Western Ave., Los Angeles, Calif.—RS
 Walsco—Walter L. Schott Co.
 Warner Bros. Broadcasting Corp., 5833 Fernwood Ave., Los Angeles, Calif.—RS
 Waters-Conley Co., Rochester, Minn.—"Phonola"—EL, HW, N
 Webster-Chicago Corp., 5610 Bloomingdale Ave., Chicago 39, Ill.—ARC, EL
 Webster Electric Co., 1900 Clark St., Racine, Wis.—PC, PM
 Western Electric Co., 195 Broadway, New York 7, N. Y.—D, PM, TR
 Western Sound & Electric Laboratories, Inc., 3512 W. St. Paul Ave., Milwaukee, Wis.—EL
 Whe-Gro Co., 3028 Locust St., St. Louis 3, Mo.—EL, F, N, TT
 Wilcox-Gay Corp., Charlotte, Mich.—ARC, N
 Williams Mfg. Co., 161 W. Huron St., Chicago 10, Ill.—CM
 Willson Plastics Div., Willson Magazine Camera Co., 6022 Media St., Philadelphia 31, Pa.—RM
 WOR Recording Studios, 1440 Broadway, New York 18, N. Y.—R, RS
 World Broadcasting System, Inc., 711 Fifth Ave., New York, N. Y.—RS
 Worner Electronic Devices, 609 West Lake St., Chicago 6, Ill.—EL
 Wurflitzer Co., Rudolph, Niagara Falls Bldg., No. Tonawanda, N. Y.—ARC, CM
 Wynn Mfg. Div., Hudson Supply Co., 401 N. 27th St., Richmond 23, Va.—EL
 York Electric & Machine Co., Carllotone Div., 30-34 N. Penn St., York, Pa.—EL

Zenith Radio Corp., 6001 Dickens Ave., Chicago 39, Ill.—PC, TR
Zephyr—Shure Bros.

134) Resistors & Volume Controls



- Attenuators (precision)A
Fixed compositionFC
Fixed wirewoundFW
High frequency resis. slugHR
Industrial fixedI
Neg. temp. coeff. resis.N
Plug-in (tubes)PT
Power rheostatsPR
PrecisionPRE
Slide-wire potentiometersS
SuppressorsSU
VariableV
Volume controlsVC

Aerolite Electronic Hardware Corp., 24 Cliff St., Jersey City 6, N. J.—FW, S
Aerovox Corp., 740 Belleville Ave., New Bedford, Mass.—FC, FW, S
Allen-Bradley Co., 136 W. Greenfield Ave., Milwaukee 4, Wis.—"Bradleyometer", "Bradleyunit"—FC, PR, SU, V, VC
Alpha Meter Service, 71 Nassau St., New York 7, N. Y.—PRE
Amalgamated Electronics Associated, 60 E. 42nd St., New York 17, N. Y.—FW, I, PR, V, VC
American Coil & Engineering Co., 1271 N. Hermitage Ave., Chicago 22, Ill.—FW
Amperite Co., 561 Broadway, New York, N. Y.—V
Associated Research, Inc., 231 S. Green St., Chicago 7, Ill.—FW, PRE
Atlas Resistor Co., 423 Broome St., New York 13, N. Y.—"Atlas"—FW, V
Audio-Tone Oscillator Co., 237 John St., Bridgeport 3, Conn.—A
Automatic Electric Co., 1033 W. Van Buren St., Chicago 7, Ill.—FW
Barker & Williamson, Upper Darby, Pa.—FW, V
Bidde Co., James G., 1211 Arch St., Philadelphia 7, Pa.—PR
Bradleyometer—Allen-Bradley Co.
Bradleyunit—Allen-Bradley Co.
Brown Devit—Ohmite Mfg. Co.
Brown Engineering Co., 4635 S.E. Hawthorne Blvd., Portland 15, Ore.—FW, PRE, S, V
Candohms—Muter Co.
Carborundum Co., Global Div., Buffalo Ave., Niagara Falls, N. Y.—FC, I, N, SU
Carter Radio Division, Precision Parts Co., 213 Institute Place, Chicago 10, Ill.—FW, V
Centralab Div. of Globe-Union, Inc., 900 E. Keefe Ave., Milwaukee 1, Wis.—PR, V, VC
Chicago Telephone Supply Co., W. Beardsley Ave., Elkhart, Ind.—V, VC
Cinema Engineering Co., 1510 W. Verdugo Ave., Burbank, Calif.—V, VC
Clarostat Mfg. Corp., 130 Clinton St., Brooklyn 2, N. Y.—"Clarostat"—A, FC, FW, HR, I, N, PT, PR, PRE, V, VC
Collins Radio Co., Cedar Rapids, Iowa—A, VC
Conn, Ltd., C. G., 1101 E. Beardsley Ave., Elkhart, Ind.—E
Corning Glass Works, Corning, N. Y.—A
Corrib—Ohmite Mfg. Co.
Cover Dual Signal Systems, Inc., Div. Electra-Voice Corp., 5215 N. Ravenswood Ave., Chicago 40, Ill.—PRE
Cutler-Hammer, Inc., 315 N. 12th St., Milwaukee 1, Wis.—FW, I, PR, S
Daven Co., 191 Central Ave., Newark 4, N. J.—A, PRE, VC
Dayton Acme Co., 930 York St., Cincinnati 14, Ohio—PRE
DeJur Amco Corp., Northern Blvd. at 45th St., Long Island City 1, N. Y.—PR, PRE, V
Dividohm—Ohmite Mfg. Co.
Eagle Electric Mfg. Co., Inc., 23-10 Bridge Plaza S., Long Island City 1, N. Y.—FW
Eastern Electronics Corp., 41 Chestnut St., New Haven, Conn.—A, FW, N, PRE, S
Eastern Specialty Co., 3617 N. 8th St., Philadelphia 40, Pa.—PRE
Electrical Reactance Corp., 49 Elm St., Franklinville 3, N. Y.—FW, PRE, V

Electronic Components Co., 423 N. Western Ave., Los Angeles 4, Calif.—A
Electronic Research Corp., 2655 W. 19th St., Chicago 8, Ill.—A, FW
Electro-Tech Equipment Co., 117 Lafayette St., New York 13, N. Y.—FW, I, PR, PRE, S, V
Emerson Radio & Phonograph Corp., 111 Eighth Ave., New York 11, N. Y.—FC, FW, PT, VC
Erie Resistor Corp., 640 W. 12th St., Erie, Pa.—FC, SU
Ex-Stat—Tilton Electric Co.
Fairchild Camera & Instrument Corp., 88-06 Van Wyck Blvd., Jamaica 1, N. Y.—A, PRE, V
Gamewell Co., 1238 Chestnut St., Newton Upper Falls 64, Mass.—V
General Electronics Mfg. Co., 2225 S. Hoover St., Los Angeles 7, Calif.—FW, PRE
General Radio Co., 275 Massachusetts Ave., Cambridge 39, Mass.—"G-R"—A, FW, HR, PR, PRE, S, V, VC
General Winding Co., 420 W. 45th St., New York 19, N. Y.—FW, PRE
Giannini & Co., Inc., G. M., Autoflight Instrument Div., 4522 Lankershim Blvd., North Hollywood, Calif.—V
G-M Laboratories, Inc., 4300 N. Knox Ave., Chicago 41, Ill.—S
Goodall Electric Mfg. Co., 3rd and Main St., Ogallala, Nebr.—FC
G-R—General Radio Co.
Graybar Electric Co., Inc., 420 Lexington Ave., New York 17, N. Y.—A
Groves Corp., 42 N. Sprigg St., Cape Girardeau, Mo.—FW, PRE, V
Haines Mfg. Co., 248-274 McKibbin St., Brooklyn 6, N. Y.—FW
Hanovia Chemical & Mfg. Equipment, 233 N. J. R. R. Ave., Newark 5, N. J.—FW
Hardwick, Hindle, Inc., 40 Hermon St., Newark 5, N. J.—FW, I, PR, PRE, S, V
Helipoint Corp., 1015 Mission St., So. Pasadena, Calif.—PRE, S, V
Hickok Electrical Instrument Co., 10514 DuPont Ave., Cleveland, Ohio—PRE
Hudson American Corp., 25 W. 43rd St., New York 18, N. Y.—HR, I, N
Industrial Instruments, Inc., 17 Pollock Ave., Jersey City 5, N. J.—PRE
Instrument Resistors Co., 25 Amity St., Little Falls, N. J.—FW, I, PRE
International Resistance Co., 401 N. Broad St., Philadelphia 8, Pa.—"IRC"—A, FC, FW, HR, I, N, PR, PRE, S, SU, V, VC
IRC—International Resistance Co.
Jeffers Electronics, Hoover St., DuBois, Pa.—FW, N
J. F. D. Mfg. Co., 4111 Ft. Hamilton Pkwy., Brooklyn 19, N. Y.—"JFD"—PT, SU
Keystone Carbon Co., Inc., 1935 State St., St. Marys, Pa.—N
Lectrohm, Inc., 5125 W. 25th St., Cicero 50, Ill.—FW, V
Leeds & Northrup Co., 4970 Stenton Ave., Philadelphia 44, Pa.—S, PRE
Lenoxite Div., Lenox, Inc., 65 Prince St., Trenton 5, N. J.—HR, PRE
Lewis Engineering Co., 52 Rubber Ave., Naugatuck, Conn.—S
Madison Electrical Products Corp., 78 Main St., Madison, N. J.—"Mecpo"—FW, I, PRE
Maguire Industries, Inc., 1437 Railroad Ave., Bridgeport, Conn.—HR
Mallory & Co., Inc., P. R., 3029 E. Washington St., Indianapolis 6, Ind.—A, FW, V, VC
Marion Electrical Instrument Co., Stark Street Gate Manufacturer, N. H.—FW, PRE
Megard Corp., 1601 S. Burlington Ave., Los Angeles 6, Calif.—A
Mecpo—Madison Electrical Products Corp.
Microhm—Precision Resistor Co.
Miller Electro-Research Labs., 4021 S. Whitnall Ave., Milwaukee 7, Wis.—PRE
Milwaukee Resistor Co., 748 W. Virginia St., Milwaukee 4, Wis.—FW, I, V
Monitor Controller Co., 51 S. Gay St., Baltimore 2, Md.—FW, I, PR
Multivolt—Ohmite Mfg. Co.
Muter Co., 1255 S. Michigan Ave., Chicago 5, Ill.—"Candohms", "Zipohms"—FW, V
National Electric Controller Co., 5307 Ravenswood Ave., Chicago, Ill.—"National"—PR
Nilsson Electrical Laboratory, Inc., 103 Lafayette St., New York 13, N. Y.—PRE
Ohio Carbon Co., 12508 Berea Rd., Cleveland 11, Ohio—FC, FW, SU
Ohmite Mfg. Co., 4935 W. Flournoy St., Chicago 44, Ill.—"Brown Devit", "Corrib", "Dividohm", "Multivolt", "Riteohm", "Wirewatt"—FW, I, PR, PRE, S, SD, V
Ohmspun—States Co.
Precision Resistor Co., 334 Badger Ave., Newark, N. J.—"Microhm"—A, I, PR, PRE, RW, V
Presto Electric Co., 4511 New York Ave., Union City, N. J.—FW, PRE, S
Quid Mfg. Co., 462 N. Parkside Ave., Chicago 44, Ill.—A
Reinners Electric Appliance Co., 596 56th St., West New York, N. J.—FW, PRE
Rex Rheostat Co., 3 Foxhurst Rd., Baldwin, L. I., N. Y.—FW, I, PR, S, V
Richardson-Allen Corp., 15 W. 20th St., New York 11, N. Y.—PRE
Riteohm—Ohmite Mfg. Co.
Rubicon Co., Ridge Ave. at 35th St., Philadelphia 32, Pa.—FW, PRE

Scientific Radio Products Co., 738 W. Broadway, Council Bluffs, Iowa—PRE
Shallcross Mfg. Co., Jackson & Pusey Aves., Collingdale, Pa.—FW, PRE, A
Sneer Resistor Corp., Theresia St., St. Marys, Pa.—FC, N
Sprague Electric Co., 189 Beaver St., North Adams, Mass.—FW, I, PRE
Sprague Products Co., North Adams, Mass.—FW, I, PRE
Stackpole Carbon Co., P. O. Box 327, St. Marys, Pa.—FC, SU, V, VC
States Co., 19 New Park Ave., Hartford 6, Conn.—"Ohmspun"—FW
Stupakoff Ceramic & Mfg. Co., Latrobe, Pa.—N
Tech Laboratories, 337 Central Ave., Jersey City 7, N. J.—A, VC
Techtmann Industries, Inc., 828 N. Broadway, Milwaukee 2, Wis.—I
Tilton Electric Corp., 15 E. 26th St., New York, N. Y.—"Ex-Stat"—FW, SU, VC
Trefz Mfg. Co., 38-11 Main St., Flushing, N. Y.—FW, I, PT, V, VC
Utah Radio Products Co., 812-20 N. Orleans St., Chicago 10, Ill.—FW, PT, V, VC
Victoreen Instrument Co., 5806 Hough Ave., Cleveland 3, Ohio—FC, PRE
Ward Leonard Electric Co., 31 South St., Mt. Vernon, N. Y.—FW, I, PR, S, V
Westinghouse Elec. Corp., East Pittsburgh, Pa.—FW, I, N, PR, PRE
Weymouth Instrument Co., 1440 Commercial St., East Weymouth 89, Mass.—FW, HR
Wheelco Instruments Co., 847 W. Harrison St., Chicago 7, Ill.—S
White Dental Mfg. Co., S. S., Industrial Div., 10 E. 40th St., New York, N. Y.—FC
Winstow Co., 9 Liberty St., Newark 5, N. J.—PRE
Wirewatt—Ohmite Mfg. Co.
Wirt Co., 5221 Greene St., Philadelphia 44, Pa.—FW, I, SU, V, VC
Zipohms—The Muter Co.

135) Sound Systems, Intercommunicators & Hearing Aids



- Acoustic materialsAM
Bell, buzzersBB
Carrier current systemsCC
Electronic megaphonesEM
Electronic musical equip.E
Hearing aidsH
IntercommunicatorsI
Mobile amplifiersMA
Power amplifiersPA
PreamplifiersPRE
Remote controllersRC
Sound systems (complete)SS
Car-top speaker racksCR

Advance Research Corp., 214 W. 42nd St., New York, N. Y.—AM
Airplane & Marine Instruments, Inc., Clearfield, Pa.—PA, PRE
Air-Trak Mfg. Co., A Div. of Aerodynamic Research Corp., 5009 Calvert Road, College Park, Md.—PA, PRE, SS
Allied Radio Corp., 833 W. Jackson Blvd., Chicago 7, Ill.—I, PA, PRE
Altec Lansing Corp., 1161 N. Vine St., Hollywood 28, Calif.—PA, PRE, SS
Ameco—American Electronics
American Coil & Engineering Co., 1271 N. Hermitage Ave., Chicago 22, Ill.—B, H, I
American Communications Corp., 306 Broadway, New York, N. Y.—EM, I, PA, PRE, SS
American Earphone Co., 10 E. 43rd St., New York 17, N. Y.—H
American Electronics, 37 E. 18th St., New York 3, N. Y.—"Amecon"—M, PA, PRE, SS
American Radio Co., 611 E. Garfield Ave., Glendale 5, Calif.—PA, PRE, SS
Amplifier Co. of America, 398 Broadway, New York 18, N. Y.—M, PA, PRE, SS
Ampro Corp., 2839-51 N. Western Ave., Chicago 18, Ill.—SS
Ansley Radio Corp., 21-10 49th Ave., Long Island City 1, N. Y.—E
Atlas Sound Corp., 1443 39th St., Brooklyn 18, N. Y.—CR, EM, PA, PRE, SS
Audiograph—John Meek Industries
Audio-Tone Oscillator Co., 237 John St., Bridgeport 3, Conn.—PRE, SS
Aurex Corp., 1117 N. Franklin St., Chicago, Ill.—H, PRE
Auth Electric Specialty Co., Inc., 422-430 E. 53rd St., New York 22, N. Y.—B, I, SS

- Automatic Electric Co., 1033 W. Van Buren St., Chicago 7, Ill.—I
- Aviola Radio Corp., 703 W. Iry St., Glendale 4, Calif.—I, SS
- Aviometer Corp., 370 W. 35th St., New York 1, N. Y.—I
- Bank's Mfg. Co., 1105 W. Lawrence Ave., Chicago 40, Ill.—E, I, PA, PRE, RC, SS
- Barker & Williamson, Upper Darby, Pa.—M, PA, PRE, RC
- Belfone—Bell Sound Systems, Inc.
- Bell & Howell Co., 7100 McCormick Rd., Chicago 45, Ill.—SS
- Bell Sound Systems, Inc., 1183 Essex Ave., Columbus 3, Ohio—Belfone—E, I, M, PA, PRE, RC, SS
- Bendix Radio Division, Bendix Aviation Corp., E. Joppa Rd., Baltimore 4, Md.—I, M
- Bendix Aviation Corp., Pacific Div., 11600 Sherman Way, North Hollywood, Calif.—I, M
- Biltmore Radio Corp., 15 Ave. "A", New York 3, N. Y.—I, SS
- Bogen Co., Inc., David, 663 Broadway, New York 12, N. Y.—I, M, PA, PRE, RC, SS
- Boom Electric & Amplifier Co., Inc., 1227 W. Washington Blvd., Chicago 7, Ill.—I, SS
- Breco Corp., 55 Van Dam St., New York 13, N. Y.—E, I, M, PA, PRE, RC, SS
- Caltron Co., Div. Frank Rieber, Inc., 11916 W. Pico Blvd., Los Angeles 34, Calif.—PRE
- Cambridge Instrument Co., Inc., 3005 Grand Central Terminal, New York 17, N. Y.—H
- Chicago Sound Systems, Inc., 2124 S. Michigan Ave., Chicago, Ill.—M, SS
- Clark Radio Equipment Corp., 4313 N. Lincoln Ave., Chicago 18, Ill.—M, PRE, SS
- Cline Electric Mfg. Co., 4550 W. Lexington Ave., Chicago, Ill.—PA, RC
- Collins Radio Co., Cedar Rapids, Iowa—PA, PRE
- Commercial Radio Sound Corp., 575 Lexington Ave., New York 22, N. Y.—B, E, H, I, M, PA, PRE, RC, SS, CR
- Commercial Research Laboratories, Inc., 20 Bartlett Ave., Detroit 3, Mich.—PRE
- Communicating Systems, Inc., 201-209 E. 18th St., New York 3, N. Y.—I, PA, PRE, SS
- Communication Equipment & Engineering Co., 5646 W. Race St., Chicago 44, Ill.—PA, SS
- Communications Co., Inc., 300 Greco Ave., Coral Gables 34, Fla.—M, PA, PRE, RC
- Concord Radio Corp., 901 W. Jackson Blvd., Chicago 7, Ill.—H, I, M, PA, PRE, SS
- Connecticut Telephone & Electric, Div. Great American Industries, Inc., Meriden 3, Conn.—B, I
- Convers-O-Call—National Inter-Communicating Systems
- Cover Dual Signal Systems, Inc., Div. Electra-Voice Corp., 5215 N. Ravenswood Ave., Chicago 40, Ill.—RC
- Dalmo Victor, Div. Goldfield Consolidated Mines Co., 1414 El Camino Real, San Carlos, Calif.—I, RC, SS
- Dayton Acme Co., 930 York St., Cincinnati 14, Ohio—I
- DeVry Corp., 1111 Armitage Ave., Chicago, Ill.—SS
- Dilks, Inc., 520 West Ave., Norwalk, Conn.—PA, SS
- Drake Co., R. L., 11 Longworth St., Dayton 2, Ohio—SS
- Eastern Amplifier Corp., 794 E. 140th St., New York 54, N. Y.—H, I, M, PA, PRE, RC, SS
- Eckstein Radio & Television Co., 914-918 La Salle Ave., Minneapolis 2, Minn.—M, PA
- Electro Products Laboratories, 549 W. Randolph St., Chicago 6, Ill.—RC
- Electronic Apparatus, Inc., 347 Madison Ave., New York 17, N. Y.—I, M, PA, PRE, SS
- Electronic Engineering Service & Laboratories, 114-36 Farmers Blvd., St. Albans 12, N. Y.—PA, PRE, SS
- Electronic Engineers, 611 E. Garfield Ave., Glendale 5, Calif.—E, RC
- Electronic Mfg. Co., 339-347 W. Eighth Ave., Dubuque, Iowa—I, SS
- Electronic Measurements Co., Red Bank, N. J.—PA, PRE
- Electronic Sound Engineering Co., 109 N. Dearborn St., Chicago 2, Ill.—CC, E, H, I, PA, SS
- Electronic Specialties Mfg. Co., 68 High St., Worcester 2, Mass.—I, M, PA, PRE, SS
- Erwood Co., 223 W. Erie St., Chicago 10, Ill.—E, I, M, PA, PRE, RC, SS, CR
- Executone, Inc., 415 Lexington Ave., New York 17, N. Y.—I, SS, E, I, PA
- Fairchild Camera & Instrument Corp., 88-06 Van Wyck Blvd., Jamaica 1, N. Y.—PRE
- Faraday Electric Corp., Adrian, Mich.—B
- Federal Telephone & Radio Corp., 200 Mt. Pleasant Ave., Newark 4, N. J.—I, PRE
- Ferranti Electric, Inc., 30 Rockefeller Plaza, New York 20, N. Y.—Ferranti—M, PA, PRE
- Flashtron—Thordarson Electric Mfg. Div.
- Freud Transformer Co., 72 Spring St., New York 12, N. Y.—PA, PRE
- Garner Electronics Corp., 1100 W. Washington Blvd., Chicago 7, Ill.—E, I, M, PA, PRE, SS
- Gates Radio Co., 220 Hampshire St., Quincy, Ill.—PA, PRE, RC, SS
- Gem Radio & Television Co., 303 W. 42nd St., New York 18, N. Y.—I, PA, PRE, SS
- General Communication Co., 530 Commonwealth Ave., Boston 15, Mass.—I
- General Electric Co., Specialty Div., 1001 Wolf St., Syracuse, N. Y.—I, M, PA, PRE, SS
- Gentleman Products, Div. Henney Motor Co., 1702 Cum- ing St., Omaha, Neb.—H, I, M, PA, PRE, RC, SS
- Gibson, Inc., 225 Parson St., Kalamazoo 13F, Mich.—E
- Globe Phone Mfg. Corp., 2 Linden St., Reading, Mass.—AM, B, H, PA, SS
- Godfrey Mfg. Co., 171 S. 2nd St., Milwaukee 4, Wis.—I, PA, PRE, SS
- Goodall Electric Mfg. Co., Third & Main Sts., Ogallala, Neb.—SS
- Graybar Electric Co., Inc., 420 Lexington Ave., New York 17, N. Y.—H, I, M, PA, PRE, SS
- Guided Radio Corp., 161 Sixth Ave., New York 13, N. Y.—SS
- Hallicrafters Co., 2611 S. Indiana Ave., Chicago 16, Ill.—M
- Hammond Instrument Co., 2915 N. Western Ave., Chicago 18, Ill.—E
- Harvey Machine Co., Inc., 6200 Avalon Blvd., Los Angeles 3, Calif.—M, PA, PRE, RC, SS
- Harvey Radio Laboratories, Inc., 447 Concord Ave., Cambridge 38, Mass.—M, PA, PRE
- Herbach & Rademan Co., Mfg. Div., 517 Ludlow, Philadelphia 6, Pa.—E, M, PA, PRE, SS
- Higgins Industries, Inc., 2221 Warwick Ave., Santa Monica, Calif.—M, PA, PRE, RC, SS
- Hoffmann Corp., C. L., 436 Boulevard of the Allies, Pittsburgh, Pa.—H
- Holland Sound Engineering, 3730 Division St., Chicago, Ill.—AM, E, I, M, PA, PRE, RC, SS
- Holtzer-Cabot, Div. First Industrial Corp., 125 Amory St., Roxbury 19, Mass.—SS
- Huber Radio Co., 260 S. Center St., Casper, Wyo.—CC
- Hudson American Corp., 25 W. 43rd St., New York 18, N. Y.—M, PA, PRE, RC, SS
- Industrial Transformer Corp., 2540 Belmont Ave., New York 58, N. Y.—PA, PRE, SS
- Instrument Electronics, 253-21 Northern Blvd., Little Neck, L. I., N. Y.—PRE
- Intercall Systems, Inc., 201 Hickory St., Dayton, Ohio—I
- Intex Co., 303 W. 42nd St., New York 18, N. Y.—PA, SS
- Kepron Mfg. Co., Inc., 18 W. 20th St., New York 11, N. Y.—B, I, PA
- Kellogg Switchboard & Supply Co., 6650 S. Cleero Ave., Chicago 38, Ill.—B, I
- Kinetic Electronics Corp., 235 E. 42nd St., New York 17, N. Y.—PA, SS
- Kirkland Co., H. R., 8-10 King St., Morristown, N. J.—I
- Kluge Electronics Co., 1031 N. Alvarado St., Los Angeles 26, Calif.—CC
- Lake Mfg. Co., 2323 Chestnut St., Oakland 7, Calif.—"Vocall"—B, I
- Langevin Co., Inc., 37 W. 65th St., New York 23, N. Y.—M, PA, PRE, RC, SS
- Laurehk Radio Mfg. Co., 3931 Monroe Ave., Wayne, Mich.—"Laurehk"—H, PA
- Lawton Products Co., Inc., 624 Madison Ave., New York 22, N. Y.—PA, PRE
- Lektra Labs., Inc., 30 E. 10th St., New York 3, N. Y.—E, I
- Lenkur Electric Co., 1138 Howard St., San Francisco 3, Calif.—CC
- Lincoln Electronics Corp., 653 11th Ave., New York, N. Y.—E, H, I, PA, PRE, SS
- Lincophone Co., Inc., 1661 Howard Ave., Utica 3, N. Y.—SS
- Logan Co., Les., 530 Gough St., San Francisco 2, Calif.—"Speed-X"—B
- Lope Sound Engineers, J. M., 986 S. Western Ave., Los Angeles 6, Calif.—I, M, PA, PRE, RC, SS
- Long Co., L. J., 186 Grand St., New York 13, N. Y.—I
- Lymann Electronic Corp., 12 Cass St., Springfield, Mass.—PA, PRE
- Maquire Industries, Inc., 1437 Railroad Ave., Bridgeport, Conn.—PA
- Maquire Industries, Inc., Electronics Div., 342 W. Putnam Ave., Greenwich, Conn.—M, PA, PRE
- Maico Co., Inc., 21 N. Third St., Minneapolis 1, Minn.—E, H, I, M, PRE, SS
- Marshall Radio Engineering Laboratories, 5008 Lanker- shin Blvd., North Hollywood, Calif.—SS
- Meck Industries, Inc., John, Liberty at Pennsylvania, Plymouth, Ind.—"Audlograph"—SS
- Megard Corp., 1601 S. Rurlington Ave., Los Angeles 6, Calif.—E, I, M, PA, PRE, SS
- Miessner Inventions, Inc., Van Beuren Rd., Morristown, N. J.—E
- Miles Reproducer Co., Inc., 812 Broadway, New York 3, N. Y.—"Miles"—I, M, PA, PRE, RC, SS
- Milprint, Inc., 431 W. Florida St., Milwaukee 1, Wis.—AM
- Mohawk Electric Mfg. Co., 60-62 Howard St., Irvington 6, N. J.—B
- Molded Insulation Co., Aircraft Control Div., 335 E. Price St., Philadelphia 44, Pa.—I, M, PA, PRE, RC Myers & Sons, E. A., 306 Beverly Rd., Pittsburgh 16, Pa.—"Radioear"—H
- National Co., Inc., 61 Sherman St., Malden 48, Mass.—PA
- National Inter-Communicating Systems, 1531 Devon Ave., Chicago 26, Ill.—"Convers-O-Call"—I, PA, PRE, SS
- Newcomb Audio Products Co., 2815 S. Hill St., Los Angeles 7, Calif.—E, I, M, PA, PRE, RC, SS
- North Electric Mfg. Co., Box 417, Gallon, Ohio—I
- Northern Communications Mfg. Co., 210 E. 40th St., New York 16, N. Y.—M, PA, PRE, SS
- Orcam Corp., Auburn Rd., Seneca Falls, N. Y.—"Orcam"—B
- Operadio Mfg. Co., St. Charles, Ill.—"Operadio"—B E, I, M, PA, PRE, RC, SS, CR
- Otarion, Inc., 25 E. Washington St., Chicago, Ill.—H
- Pacific Sound Equipment Co., 130 N. Beaudry Ave., Los Angeles 12, Calif.—SS
- Paraloy Co., 600 S. Michigan Ave., Chicago 5, Ill.—SS
- Polytron Corp., 401 Broadway, New York 13, N. Y.—I, PA, PRE
- Powers Electronic & Communication Co., New St., Glen Cove N. Y.—EM, I, M, PA, PRE, SS
- Presto Electric Co., 4511 New York Ave., Union City, N. J.—B, I
- Racon Electric Co., Inc., 52 E. 19th St., New York 3, N. Y.—AM, I
- Radiat Service, 720 W. Schubert Ave., Chicago 14, Ill.—SS
- Radioear—E. A. Myers & Sons
- Radio Frequency Laboratories, Inc., Boonton, N. J.—I
- Radio Laboratories, Inc., 2701 California Ave., Seattle 6, Wash.—I, M, PA, SS, CR
- Rauland Corp., 4245 N. Knox Ave., Chicago 41, Ill.—I, M, PA, PRE, SS
- Raytheon Mfg. Co., 55 Chapel St., Newton 58, Mass.—I
- RCA Victor Division, Radio Corp. of America, Front & Cooper Sts., Camden, N. J.—AM, E, H, I, M, PA, PRE, RC, SS, CR
- Record-O-Vox, Inc., 721 N. Martel Ave., Hollywood 46, Calif.—PA, SS
- Regal Electronics Corp., 20 W. 20th St., New York 11, N. Y.—I
- Reihtron Corp., 4313 Lincoln Ave., Chicago 18, Ill.—M, PA, PRE, SS
- Remler Co., Ltd., 2101 Bryant St., San Francisco 10, Calif.—"Remler"—I, SS, M
- Riggs & Jeffreys, Inc., 73 Winthrop St., Newark 4, N. J.—H, PA, PRE, SS
- Robinson-Houchin Optical Co., 79 Thurman Ave., Columbus 6, Ohio—E, H
- Ruby Electric Co., 729 Seventh Ave., New York, N. Y.—I, PA, SS
- Saxi Instrument Co., 38-40 James St., East Providence 14, R. I.—H
- Schulmerich Electronics, Inc., 220-228 No. Main St., Sellersville, Pa.—E, H, PA, PRE, SS
- Scientific Radio Products Co., 738 W. Broadway, Council Bluffs, Iowa—CC
- Selectograph Mfg. Co., 502 W. Colo. Ave., Colorado Springs, Colo.—I
- Select-O-Phone Co., Div. Screw Machine Products Co., Inc., 1012 Eddy St., Providence 5, R. I.—I
- Setchell Carlson, Inc., 2333 University Ave., St. Paul 4, Minn.—"Setchell-Carlson"—M, PA, SS
- Signal Engineering & Mfg. Co., 154 W. 14th St., New York 11, N. Y.—B, SS
- Silver Co., McMurdo, 1240 Main St., Hartford 3, Conn.—PA
- Simpson Mfg. Co., Mark, 188 W. 4th St., New York 14, N. Y.—E, I, M, PA, PRE, RC, SS
- Sonotone Corp., Saw Mill River Rd., Elmsford, N. Y.—H
- S. O. S. Cinema Supply Corp., 449 W. 42nd St., New York 18, N. Y.—PA, PRE, SS
- Speed-X—Les Logan Co.
- Standard Electric Time Co., 89 Logan St., Springfield 2, Mass.—B
- Standard Transformer Corp., 1500 N. Halsted St., Chicago 22, Ill.—H, PA
- Stephens Mfg. Co., 10416 National Blvd., Los Angeles 34, Calif.—"Trusonic"—PA, PRE, SS
- Stromberg-Carlson Co., 100 Carlson Rd., Rochester 3, N. Y.—"Stromberg-Carlson"—I, PA, PRE, SS, CR
- Sylvania Electric Products, Inc., 500 Fifth Ave., New York 18, N. Y.—PA, PRE
- Talk-A-Phone Mfg. Co., 1512 S. Pulaski Rd., Chicago 23, Ill.—I
- Task Electronics Co., 245 W. 54th St., New York, N. Y.—E, I, M, SS
- TelAutograph Corp., 16 W. 61st St., New York 23, N. Y.—I
- Telemotor Corp., 260 5th Ave., New York, N. Y.—I
- Telex Products Co., Minneapolis, Minn.—H, I
- Thordarson Electric Mfg. Div., Maquire Industries, Inc., 500 W. Huron St., Chicago 10, Ill.—"Tru Fidelity," "Flashtron"—PA, PRE
- Transmitter Equipment Mfg. Co., Inc., 345 Hudson St., New York 14, N. Y.—PA, PRE, RC, SS
- Trimm, Inc., 1770 W. Berteau Ave., Chicago 13, Ill.—H
- Triumph Mfg. Co., 913 W. Van Buren St., Chicago 7, Ill.—I, PA, PRE
- Tru-Fidelity—Thordarson Electric Mfg. Div.
- Trusonic—Stenhens Mfg. Co.
- Turner Co., 909 17th St., N. E., Cedar Rapids, Iowa—B
- U. S. Television Mfg. Corp., 106 Seventh Ave., New York 11, N. Y.—I, PRE
- Vac-O-Grip Co., 2025 Detroit Ave., Toledo 6, Ohio—CR
- Vacofite Co., 3001-3 N. Henderson, Dallas, Tex.—H
- Vibraclo Mfg. Co., 325 Miguel St., San Francisco, Calif.—I, PA, PRE, SS
- Walsh Engineering Co., 34 De Hart Pl., Elizabeth 2, N. J.—PA
- Waterman Products Co., Inc., 2445-63 Emerald St., Philadelphia 25, Pa.—PA
- Watterson Radio Mfg. Co., 2700 Swiss Ave., Dallas 1, Tex.—I, PA, SS
- Webster Electric Co., 1900 Clark St., Racine, Wis.—I, M, PA, PRE, SS

Wellman Mfg. Co., 7122 Melrose Ave., Los Angeles 46, Calif.—M, PA, PRE, SS
Western Electric Co., 195 Broadway, New York 7, N. Y.—H, SS
Western Sound & Electric Laboratories, Inc., 3512 W. St. Paul Ave., Milwaukee, Wis.—E, I, M, PA, PRE, RC, SS
Westinghouse Elec. Corp., East Pittsburgh, Pa.—I, M, PA, PRE, RC
Worner Electronic Devices, 609 W. Lake St., Chicago 6, Ill.—I
Wurritzer Co., Rudolph, Falls Blvd., North Tonawanda, N. Y.—E
York Electric & Machine Co., Carllitone Div., 30-34 N. Penn St., York, Pa.—PA, SS
Zenith Radio Corp., 6001 Dickens Ave., Chicago 39, Ill.—H

Fairfield Lumber Co., 1700 Post Rd., Fairfield, Conn.—B
Federal Telephone & Radio Corp., 200 Mt. Pleasant Ave., Newark 4, N. J.—HM, PM
Flock Process Co., Velvetone Div., 3 Quincy St., Norwalk, Conn.—GC
Garner Electronics Corp., 1100 W. Washington Blvd., Chicago 7, Ill.—PD, PH
G-C—General Cement Mfg. Co.
General Cement Mfg. Co., 919 Taylor Ave., Rockford, Ill.—“G C”—GC, S
General Electric Co., Receiver Div., 1285 Boston Ave., Bridgeport 2, Conn.—PM
General Electric Co., Specialty Div., 1001 Wolf St., Syracuse, N. Y.—GC
General Instrument Corp., 829 Newark Ave., Elizabeth 3, N. J.—D, PM
Gentleman Products, Div. Henney Motor Co., 1702 Cuming St., Omaha, Nebr.—CH, B
Goodall Electric Mfg. Co., Third & Main St., Ogallala, Nebr.—M, PH
Graybar Electric Co., Inc., 420 Lexington Ave., New York 17, N. Y.—HM, PD, PM, PH
Guided Radio Corp., 161 Sixth Ave., New York 13, N. Y.—PM
Hallcrafters Co., 2611 S. Indiana Ave., Chicago 16, Ill.—PM
Hawley Products Co., 333-339 N. 6th St., St. Charles, Ill.—CH, B, C, PH
Illinois Wood Products Corp., 2512 S. Damen Ave., Chicago 8, Ill.—B
Industrial Fabricators, Inc., 1890 Carter Rd., Cleveland 13, Ohio—B
Industrial Transformer Corp., 2540 Belmont Ave., New York 58, N. Y.—F
Jensen Radio Mfg. Co., 6601 S. Laramie Ave., Chicago 38, Ill.—CH, B, C, D, F, FE, PD, PM, PH, ST
J. F. D. Mfg. Co., 4111 Ft. Hamilton Parkway, Brooklyn 19, N. Y.—F
Langevin Co., Inc., 37 W. 65th St., New York 23, N. Y.—CH, PH
Magnavox Co., Ft. Wayne 4, Ind.—D, F, PD, PM
Maico Co., Inc., 21 N. Third St., Minneapolis 1, Minn.—HD, D, HA, HM—
Megard Corp., 1601 S. Burlington Ave., Los Angeles 6, Calif.—CH
Miles Reproducer Co., Inc., 812 Broadway, New York 3, N. Y.—CH, B, PH
Murdock Co., Wm. J., 158 Carter St., Chelsea 50, Mass.—HM
National Co., Inc., 61 Sherman St., Malden 48, Mass.—CH, B
National Molding Co., 2141 W. Washington Blvd., Los Angeles 7, Calif.—C
Newcomb Audio Products Co., 2815 S. Hill St., Los Angeles 7, Calif.—B, PD, PM, PH
Olek & Son, Inc., A., 4757-59 Melrose St., Philadelphia 37, Pa.—GC
Operadio Mfg. Co., St. Charles, Ill.—CH, B, C, HD, D, F, PD, PM, PH
Oxford-Tartak Radio Corp., 3911 S. Michigan Ave., Chicago, Ill.—B, C, D, F, FE, HF, M, PD, PH, PM
Perfection Electric Co., 829 S. State St., Chicago 5, Ill.—D
Permolux Corp., 4900 W. Grand Ave., Chicago 39, Ill.—HD, D, M, HM, PM
Powers Electronic & Communication Co., New St., Glen Cove, N. Y.—PH
Quadriga Mfg. Co., 213 W. Grand Ave., Chicago 10, Ill.—S
Quam-Nichols Co., 33rd Place & Cottage Grove Ave., Chicago 16, Ill.—D, PM
Racon Electric Co., Inc., 52 E. 19th St., New York 3, N. Y.—CH, B, C, D, M, PD, PM, PH, ST
Radell Corp., 215 W. Michigan St., Indianapolis 2, Ind.—D, PM
Radio Speakers, Inc., 221 E. Cullerton St., Chicago, Ill.—HD, HM, D, PM
RCA Victor Division, Radio Corp. of America, Front & Cooper Sts., Camden N. J.—C, F, PD, PM
Remier Co., Ltd., 2101 Bryant St., San Francisco 10, Calif.—R, HD
Robinson-Houchin Optical Co., 79 Thurman Ave., Columbus 6, Ohio—CH, HA, HM
Rola Co., Inc., 2530 Superior Ave., Cleveland 14, Ohio—D, FE, PM
Schott Co., Walter L., 9306 Santa Monica Blvd., Beverly Hills, Calif.—“Walsco”—GC, S
Searle Aerr Industries, Inc., P. O. Box 111, Orange, Calif.—D, PM
Shure Bros., 225 W. Huron St., Chicago 10, Ill.—HA, HM
Simpson Mfg. Co., Mark, 188 W. 4th St., New York 14, N. Y.—CH, B, PM, PH, ST
Smith Mfg. Co., Nathan R., 105 Pasadena Ave., South Pasadena, Calif.—F
Sontone Corp., Saw Mill River Rd., Elmsford, N. Y.—HA, HM
S. O. S. Cinema Supply Corp., 449 W. 42nd St., New York 18, N. Y.—CH, B, FE
South Shore Radio & Electric Corp., 6815 Stony Island Ave., Chicago 19, Ill.—D
Stephens Mfg. Co., 10418 National Blvd., Los Angeles 34, Calif.—CH, B, D, F, PD, PM, PH
Stromberg-Carlson Co., 100 Carlson Rd., Rochester 3, N. Y.—CH, B, C, PD, PM, PH
Telex Products Co., Minneapolis, Minn.—HA, HM
Trim, Inc., 1770 W. Berteau Ave., Chicago 13, Ill.—HD, HA, HM
University Laboratories, 225 Varlek St., New York 14, N. Y.—CH, B, D, PD, PM, PH, ST

Utah Radio Products Co., 812-20 N. Orleans St., Chicago 10, Ill.—CH, B, D, PD, PM, PH
Vibralec Mfg. Co., 325 Miguel St., San Francisco, Calif.—CH, B
Walsco—Walter L. Schott Co.
Watterson Radio Mfg. Co., 2700 Swiss Ave., Dallas 1, Tex.—B
Welsh Co., Wm. H., 2241 S. Indiana Ave., Chicago 16, Ill.—C
Western Sound & Electric Laboratories, Inc., 3512 W. St. Paul Ave., Milwaukee, Wis.—B, S
York Electric & Machine Co., Carllitone Div., 30-34 N. Penn St., York, Pa.—CH, B

136) Speakers & Headphones



- Acoustic chambersCH
BafflesB
ConesC
Crystal headphonesHC
Crystal speakersCS
Dynamic headphonesHD
Electro-dynamic speakersD
Field coilsF
Field excitersFE
Grille clothsGC
Hearing aid headphonesHA
Magnetic speakersM
Magnetic headphonesHM
PM driversPD
PM dynamic speakersPM
Projector hornsPH
Shims, adjustingS
StandsST

Acme Wire Co., New Haven 14, Conn.—F
Aireon Mfg. Corp., Fairfax & Funston Rds., Kansas City 15, Kans.—CH, B, C, D, PM, PH
Altec Lansing Corp., 1161 N. Vine St., Hollywood 28, Calif.—CH, D, M, PH
American Communications Corp., 306 Broadway, New York, N. Y.—CH, B, FE
American Earphone Co., 10 E. 43rd St., New York 17, N. Y.—HA
Astatic Corp., Harbor & Jackson, Conneaut, Ohio—HC, HA
Atlas Sound Corp., 1443 39th St., Brooklyn 18, N. Y.—CH, B, C, D, FE, GC, PD, PH, ST, PM
Audio-Tone Oscillator Co., 237 John St., Bridgeport 3, Conn.—CH
Aurex Corp., 1117 N. Franklin St., Chicago, Ill.—HC, HD, HM
Aviometer Corp., 370 W. 35th St., New York 1, N. Y.—HD, HM
Bell Sound Systems, Inc., 1183 Essex Ave., Columbus 3, Ohio—B, ST
Best Mfg. Co., Inc., 1200 Grove St., Irvington 11, N. J.—D, F, M
Bittermann Electric Co., 50 Henry St., Brooklyn 2, N. Y.—F
Bogen Co., Inc., David, 663 Broadway, New York 12, N. Y.—B
Brush Development Co., 3405 Perkins Ave., Cleveland 14, Ohio—HC, CS, HA
Cannon Co., C. F., Springwater, N. Y.—HM
Carran Mfg. Co., 415 S. Aberdeen St., Chicago 7, Ill.—C, F, GC, S
Castlewood Mfg. Co., 12th & Burnett Sts., Louisville, Ky.—B, PH
Cellusuede Products, Inc., 500 N. Madison St., Rockford, Ill.—GC
Cinaudagraph Corp., 2 Selleck St., Stamford, Conn.—D, PM, PH
Cinaudagraph Speakers, Inc., 3911 S. Michigan Ave., Chicago, Ill.—D, M, PM
Clark Radio Equipment Corp., 4313 N. Lincoln Ave., Chicago 18, Ill.—CH
Commercial Radio Sound Corp., 575 Lexington Ave., New York 22, N. Y.—B, M, PH
Connecticut Telephone & Electric, Div. Great American Industries, Inc., Meriden 3, Conn.—HM
Consolidated Radio Products Co., 350 W. Erie St., Chicago 10, Ill.—D, HM, PM
Contract Specialties Co., 1743 Labrosse St., Detroit 16, Mich.—GC
Crescent Industries, Inc., 4140 Belmont Ave., Chicago 41, Ill.—D, PM
Dazor Mfg. Co., 4483 Dunean Ave., St. Louis 10, Mo.—ST
D-X Radio Products Co., 1200 N. Claremont Ave., Chicago 22, Ill.—D, F, PM
Electro Products Laboratories, 549 W. Randolph St., Chicago 6, Ill.—FE
Erwood Co., 223 W. Erie St., Chicago 10, Ill.—D, FE, HA, PD, PM, PH, ST

137) Switches & Relays



- Capacitance relaysCR
Circuit breakersCB
Counters, electricC
Differential relaysDR
Float switchF
Fluorescent lamp startersFS
Key switchSK
Mercury relaysM
Mercury switchesMS
Polarized relaysRP
Pressure switchPS
Push buttonPB
RelaysR
Rotary selector switchesSL
Safety interlocksS
Slide switchesSS
SolenoidsSO
Stepping relaysSR
Thermal switchesT
Time delay relaysTD
TimersTE
Toggle switchesTO
Vacuum switchesV
Wave change (receiver)W
Wave change (transmitter)WT

Acme Fire Alarm Co., Inc., 106 7th Ave., New York 11, N. Y.—R
Acro Electric Co., 1305 Superior Ave., Cleveland 14, Ohio—“Acronap”—PB, TO
Acronap—Acro Electric Co.
Adams & Westlake Co., N. Michigan, Elkhart, Ind.—M, MS, R, TD
Advance Electric & Relay Co., 1280 W. 2nd St., Los Angeles 26, Calif.—R, TD
Air Communications, Inc., 2233 Grand Ave., Kansas City, Mo.—PS
Aireon Mfg. Corp., Fairfax & Funston Rds., Kansas City 15, Kans.—CB
Allen-Bradley Co., 136 W. Greenfield Ave., Milwaukee 4, Wis.—F, PS, PB, R, SO, TD, TE, V
Allied Control Co., Inc., 2 East End Ave., New York 21, N. Y.—R, RP, SO, SR, TD, TE
Allis-Chalmers Mfg. Co., P. O. Box 512, Milwaukee 1, Wis.—R, SL
American Coil & Engineering Co., 1271 N. Hermitage Ave., Chicago 22, Ill.—R, SO
American Electronics Co., 216 Centre St., New York 13, N. Y.—SK, PB, R, T, TO
American Gas Accumulator Co., 1027 Newark Ave., Elizabeth 3, N. J.—TD
American Instrument Co., 8030 Georgia Ave., Silver Spring, Md.—R
American Television & Radio Co., 300 E. Fourth St., St. Paul 1, Minn.—SO
American Time Products, Inc., 580 Fifth Ave., New York 19, N. Y.—TE
American Type Founders, 11 W. 42nd St., New York.—TE
Amperite Co., 561 Broadway, New York, N. Y.—R, T, TE
Ansonia Clock Co., Inc., 103 Lafayette St., New York 13, N. Y.—TE
Aray Mfg. & Supply Co., 3107 Pine St., St. Louis 3, Mo.—CR, R
Arkay Laboratories, Inc., 1570 S. First St., Milwaukee 4, Wis.—TD
Ark-Les Switch Corp., 51 Water St., Watertown 72, Mass.—SL
Arrow-Hart & Hegeman Elec. Co., 103 Hawthorn St., Hartford 6, Conn.—F, FS, PB, R, SL, T, TO
Austin Co., M. B., 108-116 S. Desplaines St., Chicago 6, Ill.—TE
Auth Electrical Specialty Co., Inc., 422 E. 53rd St., New York 22, N. Y.—C, R, SR, TE, DR, TD
Autocall Co., 1142 Tucker Ave., Shelby, Ohio—R, RP, SR, MS, TD
Automatic Electric Co., 1033 W. Van Buren St., Chicago 7, Ill.—C, SK, M, RP, PB, R, SO, SR, TD, TO
Automatic Electric Mfg. Co., 10 State St., Mankato 1, Minn.—“Automatic”—RP, R, SO, TD, TE
Automatic Switch Co., 41 E. 11th St., New York 3, N. Y.—R, SO

Automatic Temperature Control Co., Inc., 34 E. Logan St., Philadelphia 44, Pa.—R, TD, TE
 Avimeter Corp., 370 W. 35th St., New York 1, N. Y.—PB
 Bacon Electric Timer Corp., 4513 Brooklyn Ave., Cleveland 9, Ohio—TE
 Bank's Mfg. Co., 1105 W. Lawrence Ave., Chicago 40, Ill.—R
 Barber-Colman Co., River & Loomis Sts., Rockford, Ill. R, RP, TE
 Barker & Williamson, Upper Darby, Pa.—SL, WT
 Bendix Aviation Corp., Pacific Div., 11600 Sherman Way, North Hollywood, Calif.—V
 Benwood-Linze Co., 1815 Locust St., St. Louis 3, Mo.—SL
 Betts & Betts Corp., 551 W. 52nd St., New York 19, N. Y.—R, T, TD, TE
 Bird Electronic Corp., 1800 E. 38th St., Cleveland 14, Ohio—SL
 Birtcher Corp., 5087 Huntington Dr., Los Angeles 32, Calif.—R
 Birmbach Radio Co., Inc., 145 Hudson St., New York 13, N. Y.—PB, TO
 Bristol Co., Waterbury 91, Conn.—TE
 Brown Engineering Co., 4635 S.E. Hawthorne Blvd., Portland 15, Ore.—SL
 Browne Electric Co., J., 3774 Surf Ave., Brooklyn 24, N. Y.—CB, FS, R, T, TD
 Browning Laboratories, Inc., 750 Main St., Winchester, Mass.—CR
 Brush Development Co., 3405 Perkins Ave., Cleveland 14, Ohio—TE
 Bunnell & Co., J. H., 81 Prospect St., Brooklyn 1, N. Y.—R
 Burlington Instrument Corp., 214 N. 4th St., Burlington, Iowa—R, TD
 Cannon Electric Development Co., 3209 Humboldt St., Los Angeles 31, Calif.—R, SO
 Carter Radio Division. Precision Parts Co., 213 Institute Place, Chicago 10, Ill.—PB, SK
 Centralab Div., Globe-Union, Inc., 800 E. Keefe Ave., Milwaukee 1, Wis.—SL, TO, W, WT
 Cinema Engineering Co., 1510 W. Verdugo Ave., Burbank, Calif.—SL
 Clare & Co., C. P., 612 N. Michigan Ave., Chicago 11, Ill.—SK, M, PB, R, SL, SR, TD
 Clark Controller Co., 1146 E. 152nd St., Cleveland 10, Ohio—F, PB, R, SL, TD
 Cole-Hersee Co., 54 Old Colony Ave., Boston 27, Mass.—TE
 Collins Radio Co., Cedar Rapids, Iowa—WT
 Connecticut Tele. & Elec. Div. of Great American Industries, Inc., Meriden 3, Conn.—SK, RP, PB, SL, SR
 Continental X-Ray Corp., 1536 N. Clybourne, Chicago, Ill.—SL
 Control Corp., 718 Central Ave., Minneapolis 14, Minn.—R, TE
 Cook Electric Co., 2700 Southport Ave., Chicago 14, Ill.—PS, R, SO, T, TD, TO, V
 Cover Dual Signal Systems, Inc., Div. of Electra Voice Corp., 5215-25 Ravenswood Ave., Chicago 40, Ill.—SR, SL, TD
 Cramer Co., Inc., R. W., Centerbrook, Conn.—TD, TF
 Curtis Development & Mfg. Co., 3266 N. 33rd St., Milwaukee 10, Wis.—T, TD
 Cutler-Hammer, Inc., 315 N. 12th St., Milwaukee 1, Wis.—CB, C, F, PS, PB, R, SL, S, SO, T, TD, TE, TO, V
 Cyclotron Specialties Co., Moraga, Calif.—TE
 Daven Co., 191 Central Ave., Newark 4, N. J.—SL
 Dayton Acme Co., 930 York St., Cincinnati 14, Ohio—T, TD
 Diamond H.—Hart Mfg. Co.
 Dietz Mfg. Co., 2310 S. La Cienega Blvd., Los Angeles 34, Calif.—T, V
 Distillation Products, Inc., Vacuum Equipment Div., 755 Ridge Road West, Rochester 13, N. Y.—R, V
 Doehler-Jarvis Corp., Robertson St., Batavia, N. Y.—CB, SK, PB
 Dual Remote Control Co., 31776 Cowan Road, Wayne, Mich.—R
 Durakool, Inc., 1010 N. Main St., Elkhart, Ind.—M, MS
 Eagle Electric Mfg. Co., Inc., 23-10 Bridge Plaza S., Long Island City 1, N. Y.—PB
 Eagle Signal Corp., 202 20th St., Moline, Ill.—PB, R, SR, TD, TE
 Eastern Air Devices, Inc., 585 Dean St., Brooklyn 17, N. Y.—SO
 Eastern Electronics Corp., 41 Chestnut St., New Haven, Conn.—SL, W
 Ecco High Frequency Corp., 7020 Hudson Blvd., North Bergen, N. J.—SL
 Eclipse-Pioneer Div., Bendix Aviation Corp., Teterboro, N. J.—PS, R
 Eimac—Eitel-McCullough, Inc.
 Eitel-McCullough, Inc., San Bruno, Calif.—“Eimac”—V
 Electric Auto Lite Co., Port Huron, Mich.—B
 Electric Controller & Mfg. Co., 2700 E. 79th St., Cleveland 4, Ohio—F, PS, PB, R, TD, TE
 Electric Switch Corp., 14th at Union St., Columbus, Ind.—TE
 Electrical Products Supply Co., 1140 Venice Blvd., Los Angeles 15, Calif.—R, TD
 Electrical Windings, Inc., 2015 N. Kolmar Ave., Chicago 39, Ill.—SO
 Electrical Transformer Co., 421 Canal St., New York 13, N. Y.—SO
 Electronic Control Corp., 1573 E. Forest St., Detroit, Mich.—TE

Electronic Measurements Co., Red Bank, N. J.—TE
 Electronic Products Co., 19 N. First St., Geneva, Ill.—TE
 Electronic Sound Engineering Co., 109 N. Dearborn St., Chicago 2, Ill.—TE
 Electro-Tech Equipment Co., 117 Lafayette St., New York 13, N. Y.—R, SL, SO, T, TD, TE
 Engineering Laboratories, Inc., 610-624 E. 4th St., Tulsa 3, Okla.—RP, R, TD, TE
 Espey Mfg. Corp., 528 E. 72nd St., New York 21, N. Y.—SL, TD
 Faraday Electric Corp., Adrian, Mich.—R
 Federal Anti-Capacity Switch Corp., 1200 Niagara St., Buffalo 13, N. Y.—SK
 Federal Electric Co., 8700 S. State St., Chicago, Ill.—CB, FS
 Federal Instrument Co., 3917 47th Ave., Long Island City, N. Y.—R
 Federal Telephone & Radio Corp., 200 Mt. Pleasant Ave., Newark 4, N. J.—C, SK, R, SL, SR, TD
 Fenwal, Inc., Ashland, Mass.—T
 Foxboro Co., Foxboro, Mass.—TE
 Gaertner Scientific Corp., 1201 Wrightwood Ave., Chicago, Ill.—TE
 General Cement Mfg. Co., 919 Taylor Ave., Rockford, Ill.—PS, PB, TO
 General Control Co., 1200 Soldiers Field Road, Boston 34, Mass.—C, SK, MS, PB, SL, TD, TE, W, WT
 General Controls Co., 801 Allen Ave., Glendale, Calif.—R
 General Electric Co., 1285 Boston Ave., Bridgeport 2, Conn.—FS, SK, MS, PB, SL, T, TO
 General Electric Co., Specialty Div., 1001 Wolf St., Syracuse, N. Y.—SL, S
 General Electric Co., Tube Div., 1 River Rd., Schenectady 5, N. Y.—V, TE, R, RP, TD
 General Electric X-Ray Corp., 2012 Jackson Blvd., Chicago, Ill.—TE
 General Radio Co., 275 Massachusetts Ave., Cambridge 39, Mass.—“G-R.” “Variac”—SL
 General Time Instruments Corp., Seth Thomas Clocks Div., Thomaston, Conn.—TE
 Geophysical Instrument Co., 1820 N. Nash St., Arlington, Va.—R
 Gibbs & Co., Thomas B., Div. of George W. Borg Corp., 814 Michigan St., Delavan, Wis.—“Gibbs”—TD
 Gilbert Clock Co. Wm. M., Winsted, Conn.—TE
 G-M Laboratories, Inc., 4300 N. Knox Ave., Chicago 41, Ill.—R, TD
 Goodall Electric Mfg. Co., 3rd & Main Sts., Ogalala, Neb.—FS
 Gorrell & Gorrell, Haworth, N. J.—TE
 G-R—General Radio Co.
 Graybar Electric Co., Inc., 420 Lexington Ave., New York 17, N. Y.—V
 Grayhill, I. N., Pulaski Rd., Chicago 24, Ill.—PB, R
 Gregory Mfg. Co., 67 Franklin St., New Haven 11, Conn.—PS
 Guardian Electric Mfg. Co., 1400 W. Washington Blvd., Chicago 7, Ill.—C, M, R, S, SO, SR, TD, TE
 Hart Mfg. Co., Hamilton St., Hartford 1, Conn.—“Diamond H.”—M, R, TO
 Hartman Electrical Mfg. Co., 175 N. Diamond St., Mansfield, Ohio—RP, PB, R, T
 Haydon Mfg. Co., Inc., Forestville, Conn.—TD, TE
 H-B Instrument Co., 2524 N. Broad St., Philadelphia 32, Pa.—T
 Heinemann Circuit Breaker Co., Trenton 2, N. J.—CB
 Heine Electric Co., Lowell, Mass.—R
 Hercules Electric & Mfg. Co., Inc., 2500 Atlantic Ave., Brooklyn 7, N. Y.—PS, SO, TE
 Hetherington & Son, Inc., Robert, 1216 Elmwood Ave., Shiron Hill, Pa.—PB, SO, T
 Holtzer Cabot Signal Div., 400 Stuart St., Boston 17, Mass.—R, TD
 Industrial & Commercial Electronics, Belmont, Calif.—V
 Industrial Electronics Corp., 80 Bank St., Newark, N. J.—CR, FS
 Industrial Engineering Corp., Rea Bldg., Terre Haute, Ind.—TE
 Industrial Timer Corp., 115 Edison Place, Newark 5, N. J.—C, TD, TE
 Insuline Corp. of America, 36-02 35th Ave., Long Island City 10, N. Y.—PB, TO
 International Register Co., 2620 W. Washington Blvd., Chicago 12, Ill.—TD, TE
 I-T-E Circuit Breaker Co., 19th & Hamilton Sts., Philadelphia 30, Pa.—CB
 J-B-T Instruments, Inc., 441 Chapel St., New Haven 8, Conn.—SL
 Jefferson Electric Co., 25th Ave. & Madison St., Bellwood, Ill.—SO
 Jennings Radio Mfg. Co., McLaughlin Rd., San Jose 12, Calif.—R
 J.F.D. Mfg. Co., 4111 Ft. Hamilton Pkwy., Brooklyn 19, N. Y.—SL, TO
 Johnson Co., E. F., Waseca, Minn.—R
 Keeney & Co., Inc., J. H., 6810 S. Ashland Ave., Chicago 36, Ill.—PB, R, SO, SR, TD, TE
 Kegron Mfg. Co., Inc., 18 W. 20th St., New York 11, N. Y.—PS
 Kellogg Switchboard & Supply Co., 6650 S. Cleere Ave., Chicago 38, Ill.—CB, SK, M, RP, PB, R, T, TD
 Kirkland Co., H. R., 8-10 King St., Morristown, N. J.—PB
 Kolton Electric Mfg. Co., 123 New Jersey Railroad Ave., Newark 5, N. J.—CB
 Kulka Electric Mfg. Co., Inc., 30 South St., Mt. Vernon, N. Y.—TO

Kurman Electric Co., 35-18 37th St., Long Island City, N. Y.—R, TD
 Lake Mfg. Co., 2323 Chestnut St., Oakland 7, Calif.—R
 Leach Relay Co., 5915 Avalon Blvd., Los Angeles, Calif.—R, TD
 Lear, Inc., Piqua, Ohio—SO
 Leich Electric Co., 585 W. Washington Blvd., Chicago 6, Ill.—R
 Lektra Labs., Inc., 30 E. 10th St., New York 3, N. Y.—TD, TE
 Leupold & Stevens Instruments, 4445 N.E. Glisan St., Portland 13, Ore.—F
 Lewis Electronics, Inc., Los Gatos, Calif.—R
 Lewis Engineering Co., 52 Rubber Ave., Naugatuck, Conn.—SL
 Littelfuse, Inc., 4757 Ravenswood Ave., Chicago 40, Ill.—CB, MS, R
 Lumenite Electronic Co., 407 S. Dearborn St., Chicago 5, Ill.—C, F, TD, TE, R
 Magnavox Co., Fort Wayne 4, Ind.—SO
 Magnetic Gauge Co., 60 E. Bartges St., Akron, Ohio—TD
 Maguire Industries, Inc., 1437 Railroad Ave., Bridgeport, Conn.—TE
 Maico Co., Inc., 25 N. Third St., Minneapolis, Minn.—R, SR
 Mallory & Co., Inc., P. R., 3029 E. Washington St., Indianapolis 6, Ind.—PB, SL, TE
 Mark Time—M. H. Rhodes, Inc.
 Mattern Mfg. Co., F., 4647 N. Cicero Ave., Chicago 30, Ill.—SL
 McDonnell & Miller, 400 N. Michigan Ave., Chicago, Ill.—F
 Megard Corp., 1601 S. Burlington St., Los Angeles 6, Calif.—TD, TE
 Meletron Corp., 950 N. Highland Ave., Los Angeles 38, Calif.—PS, SO, TD, V
 Mendelsohn Speedgun Co., 457 Bloomfield Ave., Bloomfield, N. J.—TE
 Mercoird Corp., 4201 Belmont Ave., Chicago 41, Ill.—MS, PS, R
 Meyers Safety Switch Co., Inc., 423 Tehama St., San Francisco 3, Calif.—SK
 Michigan Fluorescent Light Co., 71-77 S. Parke St., Pontiac, Mich.—FS
 Micro Switch Div. of First Industrial Corp., Freeport, Ill.—“Microswitch”—SK, PB, T
 Miles Reproducer Co., Inc., 812 Broadway, New York, N. Y.—R
 Minneapolis-Honeywell Reg. Co., 2753 Fourth Ave. S., Minneapolis, Minn.—R, TE
 Mohawk Electric Mfg. Co., 60-62 Howard St., Irvington 6, N. J.—CB, F, R, SO, TD
 Molded Insulation Co., Aircraft Control Div., 335 E. Price St., Philadelphia 44, Pa.—SK, PB
 Monitor Controller Co., 51 S. Gay St., Baltimore 2, Md.—F, PB, R, SL, TD, TE, V
 Mossman, Inc., Donald P., 612 N. Michigan Ave., Chicago 11, Ill.—R, SK, PB, SL
 Mu-Switch Corp., 110 Pequit St., Canton, Mass.—SK, PS, PB, S, T
 Muter Co., 1255 S. Michigan Ave., Chicago 5, Ill.—“Muter”—PB, R
 National Co., Inc., 61 Sherman St., Malden 48, Mass.—PB, W
 National Research Corp., 100 Brookline Ave., Boston 15, Mass.—V
 Naxon Utilities Corp., 2101-11 W. Walnut St., Chicago 12, Ill.—R
 New England Radiocrafters, 1156 Commonwealth Ave., Boston 34, Mass.—SL
 New Haven Clock Co., New Haven 4, Conn.—TD
 North Electric Mfg. Co., Box 417, Gallon, Ohio—M, R, SL, SR, TD, TE
 Northwestern Clock Co., 514-15 Brown Bldg., Omaha, Neb.—TE
 Oak Mfg. Co., 1260 Clybourn Ave., Chicago 10, Ill.—“Oak”—PB, R, SL, SR, W
 Ohmite Mfg. Co., 4835 W. Flournoy St., Chicago 44, Ill.—SL
 Paragon Electric Co., 37 W. Van Buren, Chicago 5, Ill.—R, TE, TD
 Paramount Electric Mfg. Co., 419 Tehama St., San Francisco, Calif.—TO
 Parker Engineering Products Co., 16 W. 22nd St., New York, N. Y.—R
 Partlow Corp., 2 Campion Rd., New Hartford, N. Y.—TD, TE
 Pass & Seymour, Inc., Syracuse 9, N. Y.—SK, MS, PB
 Peerless Laboratories, 467 10th Ave., New York 18, N. Y.—SL
 Philadelphia Thermometer Co., 6th & Cayuga Sts., Philadelphia, Pa.—R, M
 Phillips Control Corp., 612 N. Michigan Ave., Chicago 11, Ill.—SO
 Photoswitch, Inc., 77 Broadway, Cambridge, Mass.—TD, TE
 Photovolt Corp., 95 Madison Ave., New York 16, N. Y.—TD, TE
 Pierce Laboratory, Inc., Summit, N. J.—“Pierceway”—CB, R
 Pierce Laboratory, Inc.
 Plating Processes Corp., 109 Lyman St., Holyoke, Mass.—F
 Portable Products Co., C. J. Tagliabue Div., 550 Park Ave., Brooklyn 5, N. Y.—TE
 Potter & Brumfield Mfg. Co., Inc., 617 N. Gibson St., Princeton, Ind.—R, TD
 Potter Instrument Co., 136-56 Roosevelt Ave., Flushing, L. I., N. Y.—TE

Precision Thermometer & Instrument Co., 1434 Brandywine St., Philadelphia, Pa.—R, M, RP, TD
 Premier Crystal Laboratories, Inc., 63 Park Row, New York 7, N. Y.—T, TE
 Presto Electric Co., 4511 New York Ave., Union City, N. J.—SK, PB
 Price Electric Corp., East Church and 2nd Sts., Frederick, Md.—RP, R, SL, SO, SR, TD
 Radio Frequency Laboratories, Inc., Boonton, N. J.—C
 Radionic Controls, 3758 Belmont Ave., Chicago 18, Ill.—R, SO
 Rawson Electrical Instrument Co., Inc., 110 Potter St., Cambridge 42, Mass.—TE
 R-B-M Mfg. Co., Div. of Essex Wire Corp., Hanna St., Logansport, Ind.—CB, RP, PB, R, SO, TD, TO
 Rehtron Corp., 4313 Lincoln Ave., Chicago 18, Ill.—TD
 Reliance Automatic Lighting Co., 1927 Mead St., Racine, Wis.—TD, TE
 Remler Co., Ltd., 2101 Bryant St., San Francisco 10, Calif.—SK, R
 Reynolds Electric Co., 2650 W. Congress St., Chicago 12, Ill.—T, TD, TE
 Rhodes, Inc., M. H., 1 Hudson St., Hartford, Conn.—"Mark Time"—TD, TE
 Richardson-Allen Corp., 15 W. 20th St., New York, N. Y.—TD, TE, WT
 Rogers Precision Products Co., 270 Lafayette St., New York 12, N. Y.—CB, FS
 Roller-Smith Div., Realty & Industrial Corp., 1760 W. Market St., Bethlehem, Pa.—CB, R, SL
 Rowe Radio Research Laboratory Co., 2422 N. Pulaski Rd., Chicago 39, Ill.—TE
 Rubicon Co., Ridge Ave. at 35th St., Philadelphia 32, Pa.—SL
 Sangamo Electric Co., Springfield, Ill.—TE
 Schaar & Co., 754 W. Lexington St., Chicago 7, Ill.—TE
 Self Winding Clock Co., 205 Willoughby Ave., Brooklyn 5, N. Y.—TE
 Shallcross Mfg. Co., Jackson & Pusey Aves., Collingdale, Pa.—"Shallcross"—SL
 Sheldon Electric Co. Inc., 76 Colt St., Irvington 11, N. J.—FS
 Sigma Instruments, Inc., 70 Ceylon St., Boston 21, Mass.—RP, R, TD
 Signal Electric Mfg. Co., 1939 Troam St., Menominee, Mich.—CB, RP, R, TE
 Signal Engineering & Mfg. Co., 154 W. 14th St., New York 11, N. Y.—RP, PB, R, SR, TD, TE
 Simonds Machine Co. Inc., 246-48 Worcester St., Southbridge, Mass.—PS
 Smith Mfg. Co., S. A., Union & Augusta, Rochester 2, N. Y.—CB
 Smith Mfg. Co., Nathan R., 105 Paadena Ave., South Pasadena, Calif.—PS, R, SO
 Sorenson & Co., 375 Fairfield Ave., Stamford, Conn.—CB, R, TD, TE
 Special Electric Labs., 7657 S. Central Ave., Los Angeles 1, Calif.—TE
 Spencer Thermostat Co., 34 Forest St., Attleboro, Mass.—CB, T, TD
 Sperti, Inc., Beech & Kenilworth, Norwood Sta., Cincinnati 12, Ohio—M, V, SO
 Square D Co., 6060 Rivard St., Detroit 11, Mich.—R, TD
 Stackpole Carbon Co., P. O. Box 327, St. Marys, Pa.—PB, SL
 Staco—Standard Electric Co.
 Standard Electric Time Co., 89 Logan St., Springfield 2, Mass.—C, TE
 Standard Electric Co., 400 Linden Ave., Dayton 3, Ohio—"Staco"—R, TD
 Stoelting Co., C. H., 424 N. Homan Ave., Chicago, Ill.—TE
 Stronberg-Carlson Co., 100 Carlson Rd., Rochester 3, N. Y.—SK, R, SR, TD
 Struthers-Dunn, Inc., 1321 Arch St., Philadelphia 7, Pa.—M, MS, RP, R, SO, SR, TD, TE
 Sundt Engineering Co., 4763 Ravenswood Ave., Chicago, Ill.—CB
 Taffer & Cooper, 75 Front St., Brooklyn 1, N. Y.—C, SK, SL, TE
 Taylor Tubes, Inc., 2312 Wabansia Ave., Chicago 47, Ill.—V
 Tech Laboratories, 337 Central Ave., Jersey City 7, N. J.—"Tech-Lab"—SL, SO, SR
 Technical Products Co., 158 Madison Ave. at 3rd St., Memphis, Tenn.—R, TE
 Telegraph Apparatus Co., 412 S. Green St., Chicago, Ill.—SK
 Teleoptic Co., 1251 Mound Ave., Racine, Wis.—TD, TE, TO
 Teleregister Corp., 157 Chambers St., New York 7, N. Y.—C
 Thermador Electric Mfg. Co., 5119 S. Riverside Drive, Los Angeles 22, Calif.—SO
 Thomson Clock Co., H. C., 38 Federal St., Bristol, Conn.—TE
 Thordarsen Electric Mfg. Div., Maguire Industries, Inc., 500 W. Huron St., Chicago 10, Ill.—R
 Thwing-Albert Instrument Co., Penn St., & Pulaski Ave., Philadelphia 44, Pa.—SL
 Tork Clock Co., 1 Grove St., Mt. Vernon, N. Y.—R, TE
 Triplett Electrical Instrument Co., Harmon Rd., Bluffton, Ohio—R, SL
 Trumbull Electric Mfg. Co., Woodford Ave., Plainville, Conn.—CB, PB, T
 Tung-Sol Lamp Works, Inc., 95 Eighth Ave., Newark 4, N. J.—T
 Tunngsten Contact Mfg. Co., 7311 Cottage Ave., North Bergen, N. J.—R, SK

Ulanet Co., George, 413 Market St., Newark 5, N. J.—T, TD, TE
 Union Switch & Signal Co., Swissvale, Pa.—SR, RP, TD, TE
 United Cigarette Corp., 65 New Litchfield St., Torrington, Conn.—R, TE
 United Electric Controls Co., 71 A St., S. Boston 27, Mass.—PS, T
 United Electronics Co., 42 Spring St., Newark 2, N. J.—V
 U. S. Rubber Co., 1230 Sixth Ave., New York 20, N. Y.—R
 Universal X-Ray Products, Inc., 1800 N. Francisco Ave., Chicago 47, Ill.—C, TE, V
 Utah Radio Products Co., 812-20 N. Orleans St., Chicago 10, Ill.—SK, PB, R, SL, TO
 Variac—General Radio Co.
 Veeder-Root, Inc., Hartford, Conn.—C
 Victoreen Instrument Co., 5806 Hough Ave., Cleveland 3, Ohio—TD, V
 Voker Corp., 7300 Huron River Dr., Dexter, Mich.—PB, SL, W
 Wallace & Tiernan Products, Inc., Main & Mill Sts., Belleville 9, N. J.—R, TE
 Ward Leonard Electric Co., 31 South St., Mt. Vernon, N. Y.—M, PB, R, SO, T, TD, SR
 Warren Telechron Co., Ashland, Mass.—C, TE
 Wellman Mfg. Co., 7122 Melrose Ave., Los Angeles 46, Calif.—SO
 Western Electric Co., Inc., 195 Broadway, New York 5, N. Y.—R
 Western Electro-Mechanical Co., Inc., 300 Broadway, Oakland, Calif.—R
 Westinghouse Electric Corp., East Pittsburgh, Pa.—CB, FS, F, RP, R, PS, PB, SL, S, SO, T, TD, TE, TO, WT
 Westinghouse Electric Corp., Meter Div., 95 Orange St., Newark 1, N. J.—R
 Weston Electrical Instrument Corp., 614 Frelinghuysen Ave., Newark 5, N. J.—R, TD
 Weymouth Instrument Co., 1440 Commercial St., East Weymouth 89, Mass.—SO
 Williams Mfg. Co., 161 W. Huron St., Chicago 10, Ill.—R, SR
 Wilson Mfg. Co., Inc., 600 N. Andrews Ave., Ft. Lauderdale, Fla.—TE
 Wirt Co., 5221-27 Greene St., Philadelphia 14, Pa.—PB, SL, SS
 World Wide Electronics, Inc., 72 E. 13th St., New York 3, N. Y.—SO
 Warner Electronic Devices, 609 W. Lake St., Chicago 6, Ill.—TD

(38) Transformers & Chokes



Audio (receiving)	A
Auto transformers	AU
Bridge	B
Chokes	C
Coils & windings	CW
Current transformers	T
Deflection yokes	DY
Fence controllers	FA
Fluorescent reactors	R
Mike cable transformers	MT
Plug-in transformers	PT
Power, receiving-transmitting	P
Rotatable transformers	RT
Voltage regulating	VR
Welding transformers	WT

ACA—Amplifier Co. of America
 Acme Electric & Mfg. Co., Cuba, N. Y.—"Acme"—A, AU, C, FA, R, P, RT, VR, WT
 Acme Wire Co., New Haven 14, Conn.—CW
 Advance Transformer Co., 1161 W. Madison St., Chicago 7, Ill.—C, VR
 Aerolite Electronic Hardware Corp., 24 Cliff St., Jersey City 6, N. J.—CW
 Agnew Electric Co., Milford, Mich.—WT
 Airdesign, Inc., 241 Fairfield Ave., Upper Darby, Pa.—A, P, C
 Airtrons Development Corp., 131-133 E. Third St., Dayton 2, Ohio—C, CW, T, P
 Alte Lansing Corp., 1161 N. Vine St., Hollywood 28, Calif.—AU, C, P
 American Coil & Engineering Co., 1271 N. Hermitage Ave., Chicago 22, Ill.—A, AU, C, CW, T, R, P
 American Communications Corp., 306 Broadway, New York, N. Y.—C
 American Television & Radio Co., 300 E. 4th St., St. Paul 1, Minn.—AU, C, CW, P
 American Transformer Co., Inc., 178 Emmet St., Newark 5, N. J.—"Amertran"—A, AU, B, C, CW, T, R, P, VR, WT, MT, RT
 Amertran—American Transformer Co.

Amplifier Co. of America, 398 Broadway, New York 13, N. Y.—"ACA"—A, AU, B, C, CW, T, P, VR
 Associated Research, Inc., 231 S. Green St., Chicago 7, Ill.—T
 Audio Development Co., 2833 13th Ave., South, Minneapolis 7, Minn.—AU, C
 Auston Co., M. B., 108-116 S. Desplaines St., Chicago 6, Ill.—FA
 Automatic Mfg. Corp., 900 Passale Ave., East Newark, N. J.—AU, C, R, P
 Benwood-Linze Co., 1815 Locust St., St. Louis 3, Mo.—A, C, T
 Berger Electronics, 109-01 72nd Rd., Forest Hills, N. Y.—R
 Best Mfg. Co., Inc., 1200 Grove St., Irvington 11, N. J.—A, AU, C, CW
 Bittermann Electric Co., 50 Henry St., Brooklyn 2, N. Y.—AU, C, CW, T
 Bogen Co., Inc., David, 663 Broadway, New York 12, N. Y.—A, C, P
 Burnett Radio Laboratory, William W. L., 4814 Idaho St., San Diego 4, Calif.—AU, C
 Cambridge Thermionic Corp., 445 Concord Ave., Cambridge 38, Mass.—A, AU, C, CW, T, P
 Camabell X-Ray Corp., 2 Overland St., Boston 15, Mass.—AU, CW, T, P, WT
 Chicago Transformer Division, Essex Wire Corp., 3601 Addison St., Chicago 18, Ill.—"Chltran"—A, AU, B, C, T, FA, R, P, VR, WT
 Chltran—Chicago Transformer Div. Essex Wire Co.
 Clifton Products, Inc., Blackbrook Rd., Painesville, Ohio—R
 Cole Radio Works, 86 Westville Ave., Caldwell, N. J.—P
 Communication Parts, 1101 N. Paulina St., Chicago 22, Ill.—A, B, C, CW
 Condenser Products Co., 1375 N. Branch St., Chicago 22, Ill.—R
 Connecticut Telephone & Electric, Div. Great American Industries, Inc., Meriden 3, Conn.—R
 Control Corp., 718 Central Ave., Minneapolis 14, Minn.—A, C, CW, P
 Coto-Coil Co., Inc., 65 Pavilion Ave., Providence 5, R. I.—CW
 Curtis Development & Mfg. Co., 3266 N. 33rd St., Milwaukee 10, Wis.—CW, T, FA
 Davis & Co., Inc., Dean W., 549 Fulton St., Chicago, Ill.—AU, C, CW
 Dinion Coil Co., Inc., North St., Caledonia, N. Y.—A, AU, C, CW, R, P
 Dongan Electric Mfg. Co., 2987 Franklin St., Detroit 7, Mich.—A, AU, B, C, CW, T, FA, R, PT, P
 D-X Radio Products Co., 1200 N. Claremont Ave., Chicago 22, Ill.—C, CW, T, DY, R
 Eastern Specialty Co., 3617 N. 8th St., Philadelphia 40, Pa.—T
 Ecco High Frequency Corp., 7020 Hudson Blvd., North Bergen, N. J.—AU, C, P
 Eisler Engineering Co., 750 S. 13th St., Newark 3, N. J.—C, CW, VR, WT
 Elco—Electron Equipment Corp.
 Electric Heat Control Co., 9123 Inman Ave., Cleveland 5, Ohio—CW, FA, WT
 Electrical Equipment, Inc., 1622 Mass. Ave., Cambridge 38, Mass.—CW
 Electrical Facilities, Inc., 4224 Holden St., Oakland 8, Calif.—T
 Electrical Reactance Corp., 49 Elm St., Franklinville 3, N. Y.—C, CW
 Electrical Specialty Co., 2304 Washington St., Boston 19, Mass.—A, AU, C, CW, P, VR
 Electrical Windings, Inc., 2015 N. Kolmar Ave., Chicago 39, Ill.—A, AU, C, CW, P
 Electricoil Transformer Co., 421 Canal St., New York 13, N. Y.—A, AU, B, C, CW, T, PT, P, WT
 Electron Equipment Corp., 917 Meridian Ave., So. Pasadena, Calif.—"Elo"—P, VR
 Electronic Components Co., 423 N. Western Ave., Los Angeles 4, Calif.—A, AU, C, CW, P
 Electronic Engineering Co., 3223 W. Armitage Ave., Chicago 47, Ill.—VR
 Electronic Transformer Co., 207 W. 25th St., New York 1, N. Y.—A, AU, B, C, CW, T, FA, MT, PT, P, RT, WT
 Electro-Tech Equipment Co., 117 Lafayette St., New York 13, N. Y.—T, RT, VR
 Electro-Voice, Inc., P. O. Box 897, South Bend 24, Ind.—MT
 Emerson Radio & Phonograph Corp., 111 Eighth Ave., New York 11, N. Y.—A, C, MT, P
 Ensign Coil Co., 2516 S. Pulaski, Chicago 23, Ill.—A, C, CW
 Excel Transformer Co., 2567 38th Ave., Oakland 1, Calif.—A, AU, C, T, P
 Fairchild Camera & Instrument Corp., 88-06 Van Wyck Blvd., Jamaica 1, N. Y.—A, AU, B, C, CW, T, MT, PT, P
 Faraday Electric Corp., Adrian, Mich.—A
 Fast & Co., John E., 3129 N. Crawford Ave., Chicago 41, Ill.—C
 Federal Telephone & Radio Corp., 200 Mt. Pleasant Ave., Newark 4, N. J.—A, C, P
 Ferranti Electric, Inc., 30 Rockefeller Plaza, New York 20, N. Y.—A, AU, B, C, CW, T, P, VR, WT
 Foster Co., A. P., 630 Reading Rd., Reading, Cincinnati 15, Ohio—A, AU, C, CW, P
 France Mfg. Co., 10325 Berea Rd., Cleveland 2, Ohio—T, FA, R
 Franklin Transformer Mfg. Co., 65 22nd Ave., N. E., Minneapolis 13, Minn.—A, AU, C, CW, P, VR, WT
 Freed Transformer Co., 72 Spring St., New York 12, N. Y.—A, AU, B, C, CW, T, P
 Gardner Electric Mfg. Co., 4227 Hollis St., Emeryville 8, Calif.—AU, C, CW, P, RT, WT

General Radio Co., 275 Massachusetts Ave., Cambridge 39, Mass.—"G-R"—"Variac"—AU, VR
General Transformer Corp., 1250 W. Van Buren St., Chicago 7, Ill.—"Streamliner"—A, AU, C, CW, T, FA, R, P
General Winding Co., 420 W. 45th St., New York 19, N. Y.—A, B, C, CW, T, R, MT, PT, P
Glenn-Roberts Co., 3100 E. Tenth St., Oakland 1, Calif.—WT
Goodall Electric Mfg. Co., Third & Main St., Ogallala, Nebr.—P, VR, WT
G-R—General Radio Co.
Gracoil—Gramer Co.
Gramer Co., 2734 N. Pulaski Rd., Chicago 39, Ill.—"Gracoil"—A, AU, B, C, CW, FA, R, P
Guided Radio Corp., 161 Sixth Ave., New York 13, N. Y.—A
Graybar Electric Co., Inc., 420 Lexington Ave., New York 17, N. Y.—AU, MT
Grayhill, I. N. Pulaski Rd., Chicago 24, Ill.—CW
Guaranteed Products, Wellington 1, Ohio—FA
Gulow Corp., 26 Waverly Pl., New York 3, N. Y.—VR
Hadley Co., Robert M., 707-711 E. 61st St., Los Angeles 1, Calif.—A, AU, C, CW, FA, P
Hallidorsen Co., 4500 Ravenswood Ave., Chicago 40, Ill.—A, AU, C, CW, T, P, RT, VR, WT
Hannon Electric Co., 1605 Waynesburg Rd., S. E., Canton, Ohio—WT
Harvey Machine Co., Inc., 6200 Avalon Blvd., Los Angeles 3, Calif.—P, VR
Harvey Radio Laboratories, Inc., 447 Concord Ave., Cambridge 38, Mass.—A, AU, C, CW, T, P
Haydu Bros., P. O. Box 1226, Plainfield, N. J.—C
Hercules Electric & Mfg. Co., Inc., 2500 Atlantic Ave., Brooklyn 7, N. Y.—A, AU, C, CW, T, R, MT, PT, P, WT
Hollywood Transformer Co., 11034 Blix St., N. Hollywood, Calif.—A, C, CW
Howard Pacific Corp., 932 N. Western Ave., Los Angeles 27, Calif.—A, AU, C, CW, P
Hudson American Corp., 25 W. 43rd St., New York 18, N. Y.—A, AU, C, CW, R, P
Industrial Electronics Corp., 80 Bank St., Newark, N. J.—C, CW, R, PT
Industrial Instruments, Inc., 17 Pollock Ave., Jersey City 5, N. J.—B
Industrial Transformer Corp., 2540 Belmont Ave., New York 58, N. Y.—A, AU, B, C, CW, T, FA, R, MT, PT, P, RT, VR, WT
Insuline Corp. of America, 36-02 35th Ave., Long Island City 10, N. Y.—C, CW
Intex Co., 303 W. 42nd St., New York 18, N. Y.—CW
Islip Radio Mfg. Corp., Islip, N. Y.—A, AU, C, CW, P
Jefferson Electric Co., 25th Ave. & Madison St., Bellwood, Ill.—A, AU, C, FA, R, P
Joyner Corp., 462 N. Parkside Ave., Chicago 44, Ill.—A, CW
Kahle Engineering Co., 1807 7th St., North Bergen, N. J.—WT
Kepron Mfg. Co., Inc., 18 W. 20th St., New York 11, N. Y.—A, AU, C, CW
Kenyon Transformer Co., Inc., 840 Barry St., New York 59, N. Y.—A, AU, B, C, CW, PT, P, WT
Kollman Instrument Div., Square D Co., 80-08 45th Ave., Elmhurst, N. Y.—RT
Kuhlman Electric Co., 1000 26th, Bay City, Mich.—A, AU, B, C, T, P, WT
Kyle Corp., South Milwaukee, Wis.—A, AU, T, P, VR
Langevin Co., Inc., 27 W. 65th St., New York 23, N. Y.—A, AU, B, C, CW, T, P, RT
Magnetic Products Co., Norwalk, Conn.—CW, P
Magnetic Windings Co., Div. Essex Wire Corp., 416 S. 16th St., Easton, Pa.—A, C, CW, T, PT, P, WT
Maguire Industries, Inc., Electronics Div., 342 W. Putnam Ave., Greenwich, Conn.—A, AU, B, C, CW, T, MT, PT, P
Maico Co., Inc., 21 N. Third St., Minneapolis 1, Minn.—CW
Mattern Mfg. Co., F., 4647 N. Cicero Ave., Chicago 30, Ill.—P
Merit Coil & Transformer Corp., 4427 N. Clark St., Chicago 40, Ill.—A, AU, C, CW, T, R, MT, PT, P, RT, VR
Michigan Fluorescent Light Co., 71-77 S. Parke St., Pontiac, Mich.—R, PT
Miller Co., B. F., P. O. Box 56 B, Trenton, N. J.—AU, C, CW, P, T, VR
Miller Co., J. W., 5917 S. Main St., Los Angeles 3, Calif.—C, CW
Mohawk Electric Mfg. Co., 60-62 Howard St., Irvington 6, N. J.—AU, CW, T, WT
Moloney Electric Co., 5390 Bircher Blvd., St. Louis 20, Mo.—P
Muter Co., 1255 S. Michigan Ave., Chicago 5, Ill.—C
National Co., Inc., 61 Sherman St., Malden 48, Mass.—"National"—A, AU, C, CW, P
Newark Transformer Co., 17 Frelinghuysen Ave., Newark 5, N. J.—C, CW, T, P, VR, WT
Newcomb Audio Products Co., 2815 S. Hill St., Los Angeles 7, Calif.—A, PT
New York Transformer Co., 62 William St., New York, N. Y.—A, AU, C, CW, T, FA, R, MT, PT, P, VR, WT
Northern Communications Mfg. Co. 210 E. 40th St., New York 16, N. Y.—A, AU, B, C, CW, T, P
Nothelfer Winding Labs., 111 Albermarle Ave., Trenton 8, N. J.—AU, C, CW, T, P, WT
Ocrum Corp., Auburn Rd., Seneca Falls, N. Y.—"Ocrum"—AU, C, CW, VR
Operadio Mfg. Co., St. Charles, Ill.—A, C, CW
Osborne Transformer Corp., 948 E. Lafayette Ave., Detroit 7, Mich.—A, AU, C, CW, T, P

Pearless Electrical Products Co., 6920-7004 McKinley Ave., Los Angeles 1, Calif.—A, AU, B, C, CW, T, FA, R, MT, PT, P
Permolux Corp., 4900 W. Grand Ave., Chicago 39, Ill.—A, C
Pilot Electric Co., 29 S. Broadway, Long Branch, N. J.—CW
Potter Co., 1950 Sheridan Rd., North Chicago 1, Ill.—R
Price Electric Corp., East Church & Second Sts., Frederick, Md.—CW
Progressive Welder Co., 3050 E. Outer Dr., Detroit 12, Mich.—WT
Quad Mfg. Co., 462 N. Parkside Ave., Chicago 44, Ill.—C, CW
Radionic Controls, 3758 Belmont Ave., Chicago 18, Ill.—A, C, CW
Radionic Transformer Co., 411 S. Sangamon St., Chicago 7, Ill.—A, AU, C, CW, T, R, PT
Raytheon Mfg. Co., 55 Chapel St., Newton 58, Mass.—A, AU, B, C, CW, T, PT, P, VR, WT
Rectifier Engineering Co., 1809 E. 7th St., Los Angeles 21, Calif.—A, C, CW
Red Arrow Electric Corp., 100 Colt St., Irvington 11, N. J.—A, AU, C, CW, T, MT, P, WT
Rittenhouse Co., A. E., Ilioneye Falls, N. Y.—AU, CW, PT
Rogers Precision Products Co., 270 Lafayette St., New York 12, N. Y.—R, MT
Shure Bros., 225 W. Huron St., Chicago 10, Ill.—MT
Sitton Transformer Corp., 763 Tifton St., N. W., Atlanta, Ga.—AU, C, CW, T, R, PT, VR
Smith Mfg. Co., Nathan R., 105 Pasadena Ave., South Pasadena, Calif.—C, CW, R
Sola Electric Co., 2525 Clybourn Ave., Chicago 14, Ill.—AU, R, VR
Sorensen & Co., Inc., 375 Fairfield Ave., Stamford, Conn.—A, AU, C, P, VR
Sorgel Electric Co., 838 W. National Ave., Milwaukee 4, Wis.—T, P, WT
Stamford Electric Products Co. Inc., Sunnyside Ave., Stamford, Conn.—A, C, CW, MT, P
Stancor—Standard Transformer Corp.
Standard Transformer Corp., 1500 N. Halsted St., Chicago 22, Ill.—"Stancor"—A, AU, C, CW, FA, R, P, VR, WT
States Co., 19 New Park Ave., Hartford 6, Conn.—AU, CW, VR, WT
Stockwell Transformer Corp., 295 N. State St., Concord, N. H.—A, AU, C, CW, T, R, MT, PT, P, RT, VR, WT

Streamliner—General Transformer Corp.
Super Electric Products Corp., 1057 Summit Ave., Jersey City, N. J.—A, C, CW, T, FA, R, MT, PT, P, RT, VR
Supreme Instruments Corp., Greenwood, Miss.—A
S-W Inductor Co., 1056 N. Wood St., Chicago 22, Ill.—CW
Swain Nelson Co., 2320 Glenview Ave., Glenview, Ill.—A, AU, C, P, VR
Sylvania Electric Products, Inc., 500 Fifth Ave., New York 18, N. Y.—R
Taylor Winfield Corp., 1052 Mahoning Ave., N. W., Warren, Ohio—AU, WT
Techno-Scientific Co., 901 Nepperhan Ave., Yonkers 3, N. Y.—VR
Telex Products Co., Minneapolis, Minn.—A, C
Thermador Electric Mfg. Co., 5119 S. Riverside Dr., Los Angeles 22, Calif.—A, AU, B, C, CW, T, FA, R, MT, PT, P
Thordarson Electric Mfg. Div., Maguire Industries, Inc., 500 W. Huron St., Chicago 10, Ill.—"Thordarson"—A, AU, B, C, CW, T, MT, PT, P, VR, WT
Times Telephoto Equipment, Inc., 229 W. 43rd St., New York 18, N. Y.—A
Transicoil Corp., 114 Worth St., New York 13, N. Y.—AU, B, C, CW, T, P
U. S. Television Mfg. Corp., 106 Seventh Ave., New York 11, N. Y.—DY
United Transformer Corp., 150 Varick St., New York 13, N. Y.—"UTC"—A, AU, B, C, CW, T, FA, R, MT, PT, P, RT, VR, WT
Universal X-Ray Products, Inc., 1800 N. Francisco Ave., Chicago 47, Ill.—CW
Utah Radio Products Co., 812-20 N. Orleans St., Chicago 10, Ill.—A, AU, C, H, R, P, VR
UTC—United Transformer Corp.
Vacolite Co., 3001-3003 N. Henderson, Dallas, Tex.—A, C
Variac—General Radio Co.
Viking Electronics Corp., 2143 West Division St., Chicago 22, Ill.—A, CW
Walker, Inc., Robert, 403 W. 8th St., Los Angeles 14, Calif.—AU, MT
Walsh Engineering Co., 34 De Hart Pl., Elizabeth 2, N. J.—A, AU, C, CW, P
Webster Electric Co., 1900 Clark St., Racine, Wis.—CW
Wheeler Insulated Wire Co., Inc., 378 Washington Ave., Bridgeport 4, Conn.—A, AU, C, CW, R, P

(39) Transmitter & Transceiver Equipment



Amateur A
Auto code senders AC
Aviation (xmitters) AV
Broadcast (xmitters) BC
Citizens' radio communication CR
Code CW
Control consoles CC
Direction finding DF
Facsimile FAC
Frequency modulation FM
Keys K
Marine (xmitters) M
Police (xmitters) P
Radioteletype RT
Speech amplifiers SA
Studio equipment SE
Television transmitters T
Transmission monitor equip. TM
Abbott Instrument, Inc., 608 W. 18th St., New York 11, N. Y.—CR
Aeronautical Radio Mfg. Co., 155 First St., Milneola, L. I., N. Y.—AV
Air Communications, Inc., 2233 Grand Ave., Kansas City, Mo.—DF, AV
Air-Track Mfg. Co., A Div. of Aerodynamic Research Corp., 5009 Calvert Road, College Park, Md.—A, AV, CR, CW, M, SA, TM
Aireon Mfg. Corp., Fairfax & Funston Rds., Kansas City 15, Kans.—AV, M, P
Airplane & Marine Instruments, Inc., Clearfield, Pa.—AV, DF, M, SA
Alden Products Co., 117 N. Main St., Brockton 64, Mass.—FAC
American Coil & Engineering Co., 1271 N. Hermitage Ave., Chicago 22, Ill.—AV, BC, P
American Communications Corp., 306 Broadway, New York, N. Y.—CC, SA
American Electronics, 37 E. 18th St., New York 3, N. Y.—FAC, SA, T
American Radio Co., 611 E. Garfield Ave., Glendale 5, Calif.—AV, BC, CC, M, P, SA
American Radio Hardware Co., 152-4 MacQueston Pkwy., S. Mt. Vernon, N. Y.—K
Amplifier Co. of America, 398 Broadway, New York 13, N. Y.—SA
Baker & Williamson, Upper Darby, Pa.—AV, BC, M, P, RT, SA, T, TM

Bassett, Inc., Rex, 311 N. W. 1st Ave., Ft. Lauderdale, Fla.—AV, M, P
Bell Sound Systems, Inc., 1183 Essex Ave., Columbus 3, Ohio—SA
Bendix Radio Division, Bendix Aviation Corp., E. Joppa Rd., Baltimore 4, Md.—AV, CC, SA
Bendix Aviation Corp., Pacific Div., 11600 Sherman Way, North Hollywood, Calif.—AV
Bludworth Marine, Div. National-Simplex-Bludworth, Inc., 100 Gold St., New York 7, N. Y.—DF
Brelco Corp., 55 Van Dam St., New York 13, N. Y.—K, M, SA
Bunnell & Co., J. H., 81 Prospect St., Brooklyn 1, N. Y.—AC, AV, BC, CC, FAC, K, M, P, RT, SA, T
Burnett Radio Laboratory, William W. L., 4814 Idaho St., San Diego 4, Calif.—M, P, TM
Clark Radio Equipment Corp., 4313 N. Lincoln Ave., Chicago 18, Ill.—CC, SA
Collins Radio Co., Cedar Rapids, Iowa—AV, BC, CC, M, P, SA
Communications Co., Inc., 300 Greco Ave., Coral Gables 34, Fla.—AV, CC, FM, K, M, P, TM
Communications Equipment Corp., 134 W. Colorado St., Pasadena 1, Calif.—A, M, P, SA
Cover Dual Signal Systems, Inc., Div. Electra Voice Corp., 5215 Ravenswood Ave., Chicago 40, Ill.—AV, P
Dahlstrom Metallic Door Co., Buffalo & E. Second, Jamestown, N. Y.—CC
DeMornay-Budd, Inc., 475 Grand Concourse, New York 51, N. Y.—AV
Doolittle Radio, Inc., 7421 S. Loomis Blvd., Chicago 36, Ill.—AV, BC, CC, M, P, SA, TM
Drake Co., R. L., 11 Longworth St., Dayton 2, Ohio—AV, FAC, M, TM
Dumont Laboratories, Inc., Allen B., 2 Main Ave., Passaic, N. J.—T, TM
Eastern Amplifier Corp., 794 E. 140th St., New York 54, N. Y.—SA
Eckstein Radio & Television Co., 914-18 La Salle Ave., Minneapolis 2, Minn.—SA
Electro-Medical Laboratory, Inc., Holliston, Mass.—K
Electronic Engineers, 611 E. Garfield Ave., Glendale 5, Calif.—AC, RT
Electronic Research Corp., 2655 W. 19th St., Chicago 8, Ill.—M, P, TM
Electronic Research & Mfg. Corp., 5805 Hough Ave., Cleveland 3, Ohio—AV, RT
Electronic Specialties Mfg. Co., 68 High St., Worcester 2, Mass.—A, CW
Electronic Specialty Co., 3456 Glendale Blvd., Los Angeles 26, Calif.—AV, DF
Electronic Tube Corp., 1200 E. Mermaid Lane, Chestnut Hill, Philadelphia 18, Pa.—SE, T
Erco Radio Laboratories, Inc., 231 Main St., Hempstead, N. Y.—AV, BC, CC, K, M, P, SA
Farnsworth Television & Radio Corp., Ft. Wayne 1, Ind.—AV, BC, M, P, T, TM
Federal Telephone & Radio Corp., 200 Mt. Pleasant Ave., Newark 4, N. J.—"Federal"—AV, BC, FAC, K, M, P, T

Finch Telecommunications, Inc., 10 E. 40th St., New York 16, N. Y.—FAC
 Fisher Research Laboratory, 1961 University Ave., Palo Alto, Calif.—AV, M, P
 Galvin Mfg. Corp., 4545 Augusta Blvd., Chicago 51, Ill.—"Motorola"—AV, CC, M, P
 Garner Electronics Corp., 1100 W. Washington Blvd., Chicago 7, Ill.—M, P, SA
 Gates Radio Co., 220 Hampshire St., Quincy, Ill.—AV, BC, M, P, SA, TM
 Gem Radio & Television Co., 303 W. 42nd St., New York 18, N. Y.—A, M, CW
 General Communication Co., 530 Commonwealth Ave., Boston 15, Mass.—DF, M, P
 General Electric Co., Transmitter Div., Thompson Rd. Plant, Syracuse, N. Y.—AV, BC, CC, M, P, RT, SA, T, TM
 Grady Instrument Co., 11 Bailey Ave., Watertown, Mass.—DF, M, P
 Gray Radio Co., 730 Okeechobee Rd., West Palm Beach, Fla.—DF, M
 Graybar Electric Co., Inc., 420 Lexington Ave., New York 17, N. Y.—AV, BC, CC, M, P, SA, T, TM
 Hallcrafters Co., 2611 Indiana Ave., Chicago 16, Ill.—A, AV, CR, DF, FM, M, P, CW, BC, SA, TM
 Hammarlund Mfg. Co., Inc., 460 W. 34th St., New York 1, N. Y.—AV, BC, FAC, M, P, T, TM
 Harvey Machine Co., Inc., 6200 Avalon Blvd., Los Angeles 3, Calif.—DF, M
 Harvey Radio Laboratories, Inc., 447 Concord Ave., Cambridge 38, Mass.—M, P
 Harvey-Wells Electronics, Inc., North St., Southbridge, Mass.—AV, BC, CC, M, P, RT, T, SA
 Hatcher & Fisk, Inc., 125 Kansas Ave., Topeka, Kans.—AV
 Heath Co., 305 Territorial, Benton Harbor, Mich.—AV
 Henry Mfg. Co., 2213 Westwood Blvd., Los Angeles, Calif.—M, P
 Herbach & Rademan Co., Mfg. Div., 517 Ludlow, Philadelphia 6, Pa.—AV, BC, M, P, SA
 Higgins Industries, Inc., 2221 Warwick Ave., Santa Monica, Calif.—M, P, SA
 Howard Pacific Corp., 932 N. Western Ave., Los Angeles 27, Calif.—BC
 Huber Radio Co., 260 S. Center St., Casper, Wyo.—P
 Hudson American Corp., 25 W. 43rd St., New York 18, N. Y.—M, P, SA
 Instructograph Co., 4701 Sheridan Rd., Chicago, Ill.—AC
 Islip Radio Mfg. Corp., Beech St., Islip, N. Y.—AV, BC, M, P, SA, TM
 Jefferson, Inc., Ray, 40 E. Merrick Rd., Freeport, L. I., N. Y.—M
 Jefferson-Travis Corp., 245 E. 23rd St., New York 10, N. Y.—AV, M, P
 Kaar Engineering Co., 619 Emerson St., Palo Alto, Calif.—M, P
 Kellogg Switchboard & Supply Co., 6650 S. Cicero Ave., Chicago 38, Ill.—K
 Kluge Electronics Co., 1081 N. Alvarado St., Los Angeles 26, Calif.—A, AV, BC, CC, M, P, SA, TM, CW
 Langevin Co., Inc., 37 W. 65th St., New York 23, N. Y.—SA
 Lavoie Laboratories, Morganville, N. J.—AV, TM, M, P
 Lawton Products Co., Inc., 624 Madison Ave., New York 22, N. Y.—AV, M
 Lear, Inc., 1480 Buchanan Ave., S. E., Grand Rapids 2, Mich.—AV
 Lewyt Corp., 60 Broadway, Brooklyn 11, N. Y.—AV
 Lincoln Electronics Corp., 653 11th Ave., New York, N. Y.—AV, BC, CC, M, P, SA, TM
 Link, Fred M., 125 W. 17th St., New York 11, N. Y.—AV, BC, CC, P, RT, T
 Logan Co., Les, 530 Gough St., San Francisco 2, Calif.—"Speed-X"—K
 Long Co., L. J., 186 Grand St., New York 13, N. Y.—M
 Maguire Industries, Inc., 1437 Railroad Ave., Bridgeport, Conn.—AV, SA
 Maguire Industries, Inc., Electronics Div., 342 W. Putnam Ave., Greenwich, Conn.—AV, M, P
 Marshall Radio Engineering Laboratories, 5008 Lankester Blvd., North Hollywood, Calif.—CR, P
 Megard Corp., 1601 S. Burlington Ave., Los Angeles 6, Calif.—CC, M, P, SA, TM
 Millen Mfg. Co., Inc., James, 150 Exchange St., Malden 48, Mass.—P, SA
 Molded Insulation Co., Aircraft Control Div., 335 E. Price St., Philadelphia 44, Pa.—SA, TM
 Motorola—Galvin Mfg. Corp.
 National Co., Inc., 61 Sherman St., Malden 48, Mass.—SA, TM
 Newcomb Audio Products Co., 2815 S. Hill St., Los Angeles 7, Calif.—SA
 North Electric Mfg. Co., Box 417, Gallon, Ohio—AC, K
 Northern Communications Mfg. Co., 210 E. 40th St., New York 16, N. Y.—AV, SA
 Northern Radio Co., 2208 Fourth Ave., Seattle 1, Wash.—M
 Oxford-Tartak Radio Corp., 3911 S. Michigan Ave., Chicago, Ill.—AV, BC, M, P, SA
 Press Wireless, Inc., 1475 Broadway, New York 18, N. Y.—AV, BC, CC, FAC, M, P, RT, SA, T, TM
 Radio Engineering Labs., Inc., 35-64 36th St., Long Island City, N. Y.—FM
 Radio Frequency Laboratories, Inc., Boonton, N. J.—AV
 Radio Inventions, Inc., 155 Perry St., New York, N. Y.—FAC

Radio Laboratories, Inc., 2701 California Ave., Seattle 6, Wash.—M
 Radio Mfg. Engineers, Inc., 300-306 First Ave., Peoria 6, Ill.—AV
 Radiomarine Corp. of America, 75 Varick St., New York 13, N. Y.—CW, DF, M
 Radio Receptor Co., Inc., 251 W. 19th St., New York 11, N. Y.—AV, BC
 Radio Specialty Mfg. Co., 403 N. W. 9th St., Portland 9, Ore.—AU, TM
 Raytheon Mfg. Co., Transmitter Div., 7517 N. Clark St., Chicago 26, Ill.—AV, BC, CC, FAC, M, P, RT, SA, T, TM
 RCA Victor Division, Radio Corp. of America, Front & Cooper Sts., Camden, N. J.—AV, BC, CC, FAC, P, SA, T, TM
 Reltron Corp., 4313 Lincoln Ave., Chicago 18, Ill.—CC, SA, TM
 Ruby Electric Co., 729 Seventh Ave., New York, N. Y.—M, SA
 Sargent Co., E. M., 212 9th St., Oakland, Calif.—DF
 Schuttig & Co., Ninth & Kearny Sts., N. E., Washington 17, D. C.—AV, RT, SA, TM
 Searle Aero Industries, Inc., P. O. Box 111, Orange, Calif.—AV, M, P
 Selectograph Mfg. Co., 502 W. Colorado Ave., Colorado Springs, Colo.—AC
 Silver Co., McMurdo, 1240 Main St., Hartford 3, Conn.—A, CW
 Smith-Meeker Engrg. Co., 125 Barclay St., New York 7, N. Y.—M
 Speed-X—Les Logan Co.
 Sperry Gyroscope Co., Inc., Great Neck, L. I., N. Y.—AV, DF
 Stancor—Standard Transformer Corp.
 Standard Engineering Laboratories, 40 S. Oak Knoll Ave., Pasadena 1, Calif.—A, AU, AV, CC, P, CV
 Standard Transformer Corp., 1500 N. Halsted St., Chicago 22, Ill.—"Stancor"—AV
 Stephens Mfg. Co., 10416 National Blvd., Los Angeles 34, Calif.—SA
 Stoddard Aircraft Radio Co., 6644 Santa Monica Blvd., Hollywood 38, Calif.—AV
 Taiter & Cooper, 75 Front St., Brooklyn 1, N. Y.—CC
 Technical Radio Co., 275 9th St., San Francisco, Calif.—M, T
 TelAutograph Corp., 16 W. 61st St., New York 23, N. Y.—FAC
 Telegraph Apparatus Co., 325 W. Huron St., Chicago, Ill.—K
 Temco—Transmitter Equipment Mfg. Co.
 Thompson Co., John E., 1440 W. 47th St., Chicago 9, Ill.—T
 Times Telephoto Equipment, Inc., 229 W. 43rd St., New York 18, N. Y.—FAC
 Transmitter Equipment Mfg. Co., Inc., 345 Hudson St., New York 14, N. Y.—"Temco"—AV, BC, CC, FAC, M, P, RT, SA, T, TM
 U. S. Rubber Co., 1230 Sixth Ave., New York 20, N. Y.—DF
 U. S. Television Mfg. Corp., 3 W. 61st St., New York 23, N. Y.—CC, DF, FM, M, P, SA, T
 Vibronex Co., 833 Broadway, New York 3, N. Y.—K
 Waterman Products Co., Inc., 2445-63 Emerald St., Philadelphia 25, Pa.—BC, SA
 Webster Electric Co., 1900 Clark St., Racine, Wis.—CC
 Western Electric Co., 195 Broadway, New York 7, N. Y.—AV, BC, CC, DF, FM, M, P, RT, SA, SE, TM
 Westinghouse Electric Corp., East Pittsburgh, Pa.—AV, BC, CC, M, SA, T, TM
 Wilcox Electric Co., Inc., 1400 Chestnut St., Kansas City 1, Mo.—AV, BC, CC, P
 Wilson Mfg. Co., Inc., 600 N. Andrews Ave., Ft. Lauderdale, Fla.—AC
 Winslow Co., 9 Liberty St., Newark 5, N. J.—K
 York Electric & Machine Co., Carlilstone Div., 30-34 N. Penn St., York, Pa.—SA

American Television Laboratories, Inc., 433 E. Erie St., Chicago 11, Ill.—CR, ST, TT
 Anglo Corp., 4234 Lincoln Ave., Chicago 18, Ill.—B, CR, I, MT, PH, R, ST, TT, T, VC
 Amperex Electronic Corp., 25 Washington St., Brooklyn 1, N. Y.—"Amperex"—CR, I, G, ST, TT, T
 Amperite Co., 561 Broadway, New York, N. Y.—"Amperite"—B, VC
 Askania Regulator Co., 1603 S. Michigan Ave., Chicago 16, Ill.—CR, ST
 Aurex Corp., 1117 N. Franklin St., Chicago, Ill.—ST
 Cetron—Continental Electric Co.
 Chatham Electronics, 475 Washington St., Newark 2, N. J.—I, G, T
 Continental Electric Co., 715 Hamilton St., Geneva, Ill.—"Cetron"—I, PH, ST
 Cyclotron Specialties Co., Moraga, Calif.—GM
 Distillation Products, Inc., Vacuum Equipment Div., 755 Ridge Rd. W., Rochester 13, N. Y.—GM
 Dumont Laboratories, Inc., Allen B., 2 Main Ave., Passaic, N. J.—CR, ST, TT
 Eimac—Eitel-McCullough, Inc.
 Eitel-McCullough, Inc., San Bruno, Calif.—I, T
 Electronic Enterprises, Inc., 65-67 Seventh Ave., Newark 4, N. J.—B, I, ST, TT, T
 Electronic Products Co., 111 E. Third St., Mt. Vernon, N. Y.—I, G, ST, T
 Electronic Tube Corp., 1200 E. Mermald Lane, Chestnut Hill, Philadelphia 18, Pa.—CR, ST, TT
 Electrons, Inc., 127 Sussex Ave., Newark 4, N. J.—I, G
 Farnsworth Television & Radio Corp., Ft. Wayne 1, Ind.—EM, PH, ST, TT
 Federal Telephone & Radio Corp., 200 Mt. Pleasant Ave., Newark 4, N. J.—I, ST, TT, T, VC
 Freeland & Olschner Products, Inc., 611 Baronne St., New Orleans 13, La.—T
 Gates & Co., Inc., Geo. W., Hempstead Turnpike & Lucille Ave., Franklin Square, L. I., N. Y.—G
 General Electric Co., Tube Div., 1 River Rd., Schenectady 5, N. Y.—B, CR, GM, I, MT, PH, R, G, ST, TT, T, VM, VC, X
 General Electric X-Ray Corp., 175 W. Jackson Blvd., Chicago 4, Ill.—X
 General Electronics, Inc., 101 Hazel St., Paterson, N. J.—B, I, ST, TT
 Geophysical Instrument Co., 1820 N. Nash St., Arlington, Va.—GM
 Goodall Electric Mfg. Co., Third & Main St., Ogallala, Nebr.—I
 Graybar Electric Co., Inc., 420 Lexington Ave., New York 17, N. Y.—R, T
 Hanovia Chemical & Mfg. Equipment, 233 N. J. R. Ave., Newark 5, N. J.—G
 Herbach & Rademan Co., Mfg. Div., 517 Ludlow, Philadelphia 6, Pa.—GM
 Heintz & Kaufman, Ltd., Tanforan Ave., S. San Francisco 4, Calif.—"HK"—I, ST, T, G
 HK—Heintz & Kaufman, Ltd.
 Hytron Radio & Electronics Corp., 76 Lafayette St., Salem, Mass.—"Hytron"—B, I, MT, R, ST, T
 Industrial & Commercial Electronics, Belmont, Calif.—I, T
 Jennings Radio Mfg. Co., McLaughlin Bld., San Jose 12, Calif.—ST, T
 J.F.D. Mfg. Co., 4111 Ft. Hamilton Parkway, Brooklyn 19, N. Y.—B
 Ken-Rad Div., Electronics Dept., General Electric Co., Owensboro, Ky.—"Ken-Rad"—CR, R, ST, T
 Kluge Electronics Co., 1031 N. Alvarado St., Los Angeles 26, Calif.—T
 Kuthe Laboratories, Inc., 150 Summit St., Newark 4, N. J.—I, G, ST, T, VC
 Lewis Electronics, 16 Lyndon Ave., Los Gatos, Calif.—CR, I, ST, T
 Litton Engineering Laboratories, P. O. Box 749, Redwood City, Calif.—ST, T, VC
 Machlett Laboratories, Inc., 1063 Hope St., Springfield, Conn.—I, ST, TT, T, X
 National Union Radio Corp., 57 State St., Newark 2, N. J.—B, CR, I, MT, PH, R, G, ST, TT, VC
 North American Philips Co., Inc., 100 E. 42nd St., New York 17, N. Y.—CR, GM, TT, X
 Northern Mfg. Co., Inc., 36 Spring St., Newark 2, N. J.—CR
 Picker X-Ray Corp., 300 Fourth Ave., New York 10, N. Y.—X
 Polk Electronics, 119 Bleeker St., New York 12, N. Y.—ST
 Radio Corp. of America, Tube Div., Harrison, N. J.—CR, EM, I, MT, PH, R, G, ST, TT, T, VC
 Radiotron—Radio Corp. of America
 Rauland Corp., 4245 N. Knox Ave., Chicago 41, Ill.—CR, PH, TT
 Raytheon Mfg. Co., 55 Chapel St., Newton 58, Mass.—B, CR, I, MT, R, G, TT, T, VM, VC
 Sheldon Electric Co., Inc., 76 Colt St., Irvington 11, N. J.—I

(40) Tubes



Ballast (regulating)	B
Cathode ray	CR
Electron multiplier	EM
Geiger-Mueller tubes	GM
Industrial and power rectifiers	I
Miniature tubes	MT
Phototubes	PH
Receiving	R
Special gaseous	G
Special tubes	ST
Television	TT
Transmitting	T
Velocity modulated	VM
Voltage control	VC
X-ray	X

Airon Mfg. Corp., Fairfax & Funston Rds., Kansas City 15, Kans.—T

Slater Electric & Mfg. Co., 728 Atlantic Ave., Brooklyn 17, N. Y.—"Slater"—B, ST, T
Sonotone Corp., Saw Mill River Rd., Elmsford, N. Y.—MT, ST
Sperry Gyroscope Co., Inc., Great Neck, L. I., N. Y.—ST, VM
Sperfi, Inc., Beech & Kenilworth, Norwood Sta., Cincinnati 12, Ohio—CH, ST, T
Standard Arcturus Corp., 30-34 Court St., Newark 2, N. J.—MT, R, TT, T
Sundt Engineering Co., 4763 Ravenswood Ave., Chicago, Ill.—ST
Sylvania Electric Products, Inc., 500 Fifth Ave., New York 18, N. Y.—"Sylvania"—B, CR, I, MT, PH, R, G, ST, TT, T, VM, VC
Takk Corp., 28 W. Market St., Newark, Ohio—G
Taylor Tubes, Inc., 2312 Wabansia Ave., Chicago 47, Ill.—"Taylor"—B, I, G, ST, T, VC
Teleso Products, Inc., 6533 Olmstead Ave., Chicago, Ill.—I, T
Transite, Inc., 639-647 Kent Ave., Brooklyn 11, N. Y.—I, R
Tung-Sol Lamp Works, Inc., 95 Eighth Ave., Newark 4, N. J.—"Tung-Sol"—I, MT, R, ST, TT, T, VM
United Electronics Co., 42 Spring St., Newark 2, N. J.—I, G, ST, TT, T
Universal X-Ray Products, Inc., 1800 N. Francisco Ave., Chicago 47, Ill.—GM, ST, X
Victoreen Instrument Co., 5806 Hough Ave., Cleveland 3, Ohio—GM, MT, ST
Western Electric Co., 195 Broadway, New York 7, N. Y.—I, PH, R, ST, T
Westinghouse Elec. Corp., MacArthur Plaza, Bloomfield, N. J.—B, I, PH, G, ST, TT, T, VM, VC, X
Westinghouse Elec. Corp., East Pittsburgh, Pa.—B, GM, I, PH, G, ST, T, VM, VC, X
Zetka Laboratories, Inc., 198-10-12 32nd Ave., Bayside, N. Y.—ST

Fansteel Metallurgical Corp., 2200 Sheridan Rd., North Chicago, Ill.—AM, G, S, TS
Feick Mfg. Div., Detroit Aircraft Prods., Inc., 10225 Meech Ave., Cleveland 5, Ohio—S
Foot Mineral Co., 12 E. Chelton Ave., Philadelphia 44, Pa.—G
Ford Radio & Mica Corp., 536 63rd St., Brooklyn 20, N. Y.—M
Freeland & Olschner Products, Inc., 611 Baronne St., New Orleans 13, La.—TR
General Ceramics & Steatite Corp., Crown Mill Rd., Keasbey, N. J.—B
General Electronics, Inc., 101 Hazel St., Paterson, N. J.—B
Glendale Vacuum Products Co., 8816 77th Ave., Brooklyn 27, N. Y.—TS
Goat Metal Stampings, Inc., 314 Dean St., Brooklyn 17, N. Y.—S
Hanovia Chemical & Mfg. Equipment, 233 N. J. R. Ave., Newark 5, N. J.—Q
Haydu Bros., P. O. Box 1226, Plainfield, N. J.—F, GS, RG, S
Hermaseal Co., Riverside Dr., Elkhart, Ind.—TS
Hermetic Seal Products Co., 416 Morris Ave., Newark, N. J.—TS
Howard Mfg. Corp., 1401 S. Main St., Council Bluffs, Iowa—B
Hydraulic Tool & Die Corp., 4625 Third Ave., New York 57, N. Y.—S
Industrial Screw & Supply Co., 717 W. Lake St., Chicago 6, Ill.—BP, S
King Laboratories, Inc., 205 Oneida St., Syracuse 4, N. Y.—G, S
Kling Metal Spinning Co., 174 Center St., New York 13, N. Y.—S
Kremenz & Co., 49 Chestnut St., Newark 5, N. J.—AM, BP, GS, S
Krischer Metal Products Co., 631-637 Kent Ave., Brooklyn 11, N. Y.—S
Lewis Electronics, 16 Lyndon Ave., Los Gatos, Calif.—TR
Linde Air Products Co., 30 E. 42nd St., New York 17, N. Y.—RG
Litton Engineering Laboratories, P. O. Box 749, Redwood City, Calif.—GS, TS
Macallen Co., Macallen St., Boston 27, Mass.—M
Mica Insulator Co., 200 Varick St., New York 14, N. Y.—"Munsell"—M

Mica Products Mfg. Co., 69 Wooster St., New York 12, N. Y.—M
Molded Insulation Co., Aircraft Control Div., 335 E. Price St., Philadelphia 44, Pa.—B
Munsell—Mica Insulator Co.
Munsell & Co., Eugene, 200 Varick St., New York 14, N. Y.—M
Mycalex Corp. of America, 60 Clifton Blvd., Clifton, N. J.—I
National Carbon Co., Inc., 30 E. 42nd St., New York 18, N. Y.—AG
Norton Laboratories, Inc., 560 Mill St., Lockport, N. Y.—B
Phonograph Needle Mfg. Co., Inc., 42-46 Dudley St., Providence 5, R. I.—BP
RCA Victor Division, Radio Corp. of America, Front & Cooper Sts., Camden, N. J.—A, G, AM, B, BP, F, G, GB, GS, M, S, TS
Reliable Spring & Wire Forms Co., 3167 Fulton Rd., Cleveland 9, Ohio—S
Remler Co., Ltd., 2101 Bryant St., San Francisco 10, Calif.—B
Rice's Sons, Bernard, 325 Fifth Ave., New York 16, N. Y.—AM, B, C, S
Scovill Mfg. Co., 99 Mill St., Waterbury 91, Conn.—AM, S
Speer Carbon Co., St. Marys, Pa.—AG
Stackpole Carbon Co., P. O. Box 327, St. Marys, Pa.—AG
Stupakoff Ceramic & Mfg. Co., Latrobe, Pa.—B
Summerill Tubing Co., Bridgeport, Pa.—S
Superior Tube Co., Norristown, Pa.—AM
Sylvania Electric Products, Inc., 500 Fifth Ave., New York 18, N. Y.—AG, AM, B, BP, C, F, G, GS, M, RG, S, TS
Tar Heat Mica Co., Plumtree, N. C.—M
Teleoptic Co., 1261 Mound Ave., Racine, Wis.—BP
U. S. Radium Corp., 535 Pearl St., New York 7, N. Y.—F
Waterbury Companies, Inc., 835 S. Main St., Waterbury 90, Conn.—B, S
Westinghouse Elec. Corp., East Pittsburgh, Pa.—AM, B, C, GS, S, TS
Wickwire Spencer Metallurgical Corp., 260 Sherman Ave., Newark 5, N. J.—GS
Winslow Co., 9 Liberty St., Newark 5, N. J.—S
York Electric & Machine Co., Carlilstone Div., 30-34 N. Penn St., York, Pa.—AM, G, GS, M, TS

(41) Tube Parts

- Anodes, graphiteAG
Anodes, metalAM
BasesB
Base pinsBP
CavitiesC
Fluorescent materialsF
Fused quartz partsQ
GettersG
Glass bulbsGB
Grid & supportsGS
Mica partsM
Rare gasesRG
Stamped partsS
Tube repairingTR
Tube seal leadsTS

Ace Mfg. Corp., Erie Ave. at "K" St., Philadelphia 24, Pa.—S
Admak Mfg. Co., 44-46 Cordler St., Irvington, N. J.—AM, S
Alden Products Co., 117 N. Main St., Brockton 64, Mass.—B
Alpha Metals, Inc., 363 Hudson Ave., Brooklyn 1, N. Y.—AM
American Brass Co., 414 Meadow St., Waterbury 88, Conn.—AM, BP, S
American Gas & Chemical Co., Harrison, N. J.—RG
American Insulator Corp., New Freedom, Pa.—B
American Lava Corp., Chattanooga 5, Tenn.—B
American Radio Hardware Co., 152-4 MacQueston Parkway, S., Mt. Vernon, N. Y.—S
Art Wire & Stamping Co., 227 High St., Newark 2, N. J.—AM
Baker Chemical Co., J. T., North Broad St., Phillipsburg, N. J.—F
Barnes Co., Wallace, P. O. Box 1521, Bristol, Conn.—S
Bead Chain Mfg. Co., 110 Mt. Grove St., Bridgeport 5, Conn.—BP, TS
Callite Tungsten Corp., 540 39th St., Union City, N. J.—AM, F, GS, S, TS, G
Cleveland Tungsten, Inc., 10200 Meech Ave., Cleveland 5, Ohio—GS, TS
Clifton Products, Inc., Blackbrook Rd., Painesville, Ohio—F
Corning Glass Works, Corning, N. Y.—GB
Crowley & Co., Inc., Henry L., 1 Central Ave., West Orange, N. J.—B
Driver Co., Wilbur B., 150 Riverside Ave., Newark 4, N. J.—AM
Du Pont de Nemours & Co., E. I., Patterson Screen Div., Main St., Towanda, Pa.—F
Eastern Engineering Co., 45 Fox St., New Haven 6, Conn.—B
Electronic Mfg. Co., 20 Orange St., Newark 2, N. J.—AM, B, BP, GS, S
Electronic Mechanics, Inc., 70 Clifton Blvd., Clifton, N. J.—B
Electronic Tube Corp., 1200 E. Mermaid Lane, Chestnut Hill, Philadelphia 18, Pa.—F
Engineering Co., 27 Wright St., Newark, N. J.—TS
Faber, Merle F., 35 Stillman St., San Francisco, Calif.—B

(42) Wire & Cable



- Antenna (receiving)A
Antenna (transmitting)AT
Antenna transmission cable (rec)AN
Antenna transmission cable (tr)ANT
Cable assembliesCA
Coaxial cableCC
Cords (attachment)CO
Filament wireF
Flat woven cableFW
GuyG
High voltageHV
Hook-upHU
Insulated cableI
LitzendrahtL
MagnetM
Mike cableMC
Radio harnessR
ResistanceR
Resistance cordsRC
ShieldedS
Shielded IgnitionSI
Solid dielectric-UHFSD
Wave guidesW
Wire shieldingWS

A.B.C. Products, Inc., 2131 Stoner Ave., West Los Angeles 25, Calif.—CA
Accurate Insulated Wire Corp., 25 Fox St., New Haven 1, Conn.—CA, CO, HU, IC, MC, SI
Acme Wire Co., New Haven 14, Conn.—"Cottonite," "Enamelite," "Hexatex," "Silkenite"—A, L, M
Acorn Insulated Wire Co., Inc., 225 King St., Brooklyn 31, N. Y.—CA, IC
Aeronautical Radio Mfg. Co., 155 First St., Mineola, L. I., N. Y.—A, AT, H, SI
Aircraft-Marine Products, Inc., 1523 N. 4th St., Harrisburg, Pa.—H
Alden Products Co., 117 N. Main St., Brockton 64, Mass.—CA, CO, FL, HV, HU, IC, H, RC, S, SI, WS
Allegheny Ludlum Steel Corp., Brackenridge, Pa.—R
Alpha Wire Corp., 50 Howard St., New York 13, N. Y.—AN, AN, RC, CA, CO, FL, G, HU, IC, L, M, MC, H, RC, S, SI, WS
American Chain & Cable Co., Bridgeport 2, Conn.—G
American Electric Cable Co., 181 Appleton St., Holyoke, Mass.—CA, CO, FL, HV, HU, IC, MC, H, RC, S, SI, WS

American Phenolic Corp., 1830 S. 54th St., Cicero, Ill.—"Amphenol"—CC, CA, AN, ANT, SD
American Steel & Wire Co., Rockefeller Bldg., Cleveland 13, Ohio—CA, CC, CO, G, HV, HU, IC, M, MC, R, RC, S
Amphenol—American Phenolic Corp.
Amy, Aceves & King, Inc., 11 W. 42nd St., New York 18, N. Y.—"Multicoupler"—AN, CC
Anaconda Wire & Cable Co., 25 Broadway, New York 4, N. Y.—A, AT, CC, FL, HV, IC, L, M, MC, R, RC, S
Andrew Co., 363 E. 75th St., Chicago 19, Ill.—AT, CC, W
Ansonia Electrical Co., 63 Main St., Ansonia, Conn.—AN, ANT, OC, HV, HU, IC, MC, S, SD
Arrow-Hart & Hegeman Elec. Co., 103 Hawthorn St., Hartford 6, Conn.—CO
Art Wire & Stamping Co., 227 High St., Newark 2, N. J.—FW
Associated Research & Engineering Laboratories, 38 Brady St., San Francisco 3, Calif.—CA, H
Austin Co., M. B., 108-116 S. Desplaines St., Chicago 6, Ill.—IC
Barker & Williamson, Upper Darby, Pa.—A, AT, CA
Belden Mfg. Co., P. O. Box 5070A, Chicago 80, Ill.—A, AT, AN, ANT, CA, CC, CO, FL, HV, HU, IC, L, M, MC, H, RC, S, SI, WS
Bendix Aviation Corp., Pacific Div., 11600 Sherman Way, North Hollywood, Calif.—H
Bird Electronic Corp., 1800 E. 38th St., Cleveland 14, Ohio—CA
Birnbach Radio Co., Inc., 145 Hudson St., New York 13, N. Y.—A, AT, AN, ANT, CC, FW, FL, G, HV, HU, IC, M, MC, R, RC, S, SI, SD, WS
Branston Electric Mfg. Co., 61-65 Gill Pl., Buffalo 13, N. Y.—CA, II
Breeze Corporations, Inc., 24 S. Sixth St., Newark 7, N. J.—"Breeze Mark"—WS
Breeze Mark—Breeze Corporations, Inc.
Brown Co., 500 5th Ave., New York 18, N. Y.—WS
Bussey Pen Products Co., 5151 W. 65th St., Chicago 38, Ill.—G
Callite Tungsten Corp., 540 39th St., Union City, N. J.—FW, CA
Chase Brass & Copper Co., 236 Grand St., Waterbury 91, Conn.—IC, M, WS
Chicago Metal Hose Corp., 1315 S. Third Ave., Maywood, Ill.—WS
Cohn & Co., Sigmund, 44 Gold St., New York 7, N. Y.—FW
Coltner Insulated Wire Co., 249 Roosevelt Ave., P. O. Box 61, Pawtucket, R. I.—CC, CO, IC, S
Columbia Wire & Supply Co., 4106 N. Pulaski Rd., Chicago 41, Ill.—A, AT, AN, ANT, CA, CO, FL, HV, HU, IC, MC, H, RC, S, WS
Commercial Radio Sound Corp., 575 Lexington Ave., New York 22, N. Y.—A, CC
Communication Equipment & Engineering Co., 5646 W. Race St., Chicago 44, Ill.—A, AT

- Communication Products, Inc., Route 36, Palmer Ave., Kearsburg, N. J.—CC
 Connecticut Cable Corp., Jewett, Conn.—CA, CO, H, RC
 Consolidated Wire & Assoc. Corp., 1635 S. Clinton St., Chicago, Ill.—A, AN, ANT, AT, CO, HU, IC, M, MC, RC, S, SI, WS
 Copperweld Steel Co., Glassport, Pa.—A, AT, CC, G
 Cords Ltd., Inc., 26 Camp St., Newark, N. J.—CA, CC, CO, H, RC, S, SI, WS
 Cornish Wire Co., Inc., 15 Park Row, New York 7, N. Y.—"Corwico"—A, AT, CA, CO, G, HU, IC, MC, S
 Corwico—Cornish Wire Co., Inc.
 Cottonite—Acme Wire Co.
 Couch Co., Inc., S. H., North Quincy 71, Mass.—IC
 Crappo—Indiana Steel & Wire Co.
 Crescent Cable Mfg. Co., Front St. & Central Ave., Pawtucket, R. I.—CA, CO, FL, IC, SI
 Crystal Research Products, Dumont, N. J.—CA
 DeMornay-Budd, Inc., 475 Grand Concourse, New York 51, N. Y.—W, CC
 Diamond Wire & Cable Co., 128 E. 16th St., Chicago Heights, Ill.—A, CA, CO, HU, IC, MC, H, RC, S, WS
 Doolittle Radio, Inc., 7421 S. Loomis Blvd., Chicago 36, Ill.—AN, ANT, CC, AT, A, CA
 Dow Corning Corp., Midland, Mich.—IC
 Driver Co., Wilbur B., 150 Riverside Ave., Newark 4, N. J.—FW, R
 Driver-Harris Co., Middlesex St., Harrison, N. J.—FW, R
 D-X Radio Products Co., 1200 N. Claremont Ave., Chicago 22, Ill.—A
 Eagle Electric Mfg. Co., Inc., 23-10 Bridge Plaza, S., Long Island City 1, N. Y.—CA, CO
 Eastern Electronics Corp., 41 Chestnut St., New Haven, Conn.—H
 Eby, Inc., Hugh H., 18 W. Chelton Ave., Philadelphia 44, Pa.—CA, H
 Electric Auto-Lite Co., Wire & Cable Div., Port Huron, Mich.—CA, CO, FL, HV, HU, IC, M, MC, H, S, SI, WS
 Electro-Marine Co., 274 Madison Ave., New York 16, N. Y.—A, AT, AN, CC
 Electro-Voice, Inc., P. O. Box 897, South Bend 24, Ind.—MC
 Electronic Mfg. Co., 339-347 W. Eighth Ave., Dubuque, Iowa—CO, H
 Electronic Plumbing Corp., 311 Nepperhan Ave., Yonkers 2, N. Y.—W
 Enamelite—Acme Wire Co.
 Essex Wire Corp., 1801 Wall St., Ft. Wayne 6, Ind.—A, CA, CO, FL, HU, IC, L, M, MC, H, S, ST, WS
 Federal Telephone & Radio Corp., 200 Mt. Pleasant Ave., Newark 4, N. J.—"Intelin"—A, AT, AN, ANT, CA, CC, FL, HV, HU, IC, H, S, SI, SD, CO, MC, H
 Flexo Wire Co., 638 W. Genesee, Syracuse 1, N. Y.—A, AT, FL, WS
 Franklin Mfg. Corp., A. W., 175 Varick St., New York 14, N. Y.—A
 Gamewell Co., 1238 Chestnut St., Newton Upper Falls 64, Mass.—H
 Gates & Co., Inc., Geo. W., Hempstead Tpke. & Lucille Ave., Franklin Square, L. I., N. Y.—CO
 Gavitt Mfg. Co., Inc., Central St., Brookfield 1, Mass.—A, AN, HU, IC, MC, H, RC, S, WS
 General Cable Corp., 420 Lexington Ave., New York 17, N. Y.—A, AT, AN, ANT, CO, HV, HU, IC, L, M, MC, S, SI
 General Cement Mfg. Co., 919 Taylor Ave., Rockford, Ill.—CO
 General Electric Co., 1285 Boston Ave., Bridgeport 2, Conn.—CA, HU, IC, M, S, SI
 General Insulated Wire Works, Inc., 69 Gordon Ave., Providence 5, R. I.—CA, CO, HU, IC, H, S, MC
 General Radio Co., 275 Massachusetts Ave., Cambridge 39, Mass.—CC
 General Television & Radio Corp., 1240 N. Homan Ave., Chicago 51, Ill.—HC
 Geophysical Instrument Co., 1820 N. Nash St., Arlington, Va.—W
 Goldmark Wire Co., James, 116 West St., New York 7, N. Y.—FL, L, M, R, WS
 Graybar Electric Co., Inc., 420 Lexington Ave., New York 17, N. Y.—A, AT, AN, ANT, CA, CC, CO, FL, G, HU, M, MC, S, SD
 Gussack Machined Products Co., 10-20 45th Rd., Long Island City, 1, N. Y.—A, CC
 Guthman & Co., Inc., Edwin I., 15 S. Throop St., Chicago 7, Ill.—L, M
 Haft & Sons, Inc., 79 Third St., Brooklyn 31, N. Y.—CA, CC
 Hallett Mfg. Co., 603 S. Redondo Blvd., Inglewood, Calif.—SI
 Hatfield Wire & Cable Co., Div. Robinson Foundation, Inc., 605 Hillside Ave., Hillside, N. J.—IC
 Hazard Insulated Wire Works, Div. Okonite Co., P. O. Box 630, Wilkes-Barre, Pa.—HV, IC
 Heatex—Acme Wire Co.
 Hoskins Mfg. Co., 4445 Lawton Ave., Detroit 8, Mich.—R
 Howard Pacific Corp., 932 N. Western Ave., Los Angeles 27, Calif.—H
 Hudson Wire Co., Winsted Div., 981 Main St., Winsted, Conn.—IC, L, M
 INCA—Pheips Dodge Copper Products Corp.
 Indiana Steel & Wire Co., 700 S. Council St., Muncie, Ind.—"Crappo"—G
 Industrial Synthetics Corp., 60 Woolsey St., Irvington 11, N. J.—HU, H
 Intelin—Federal Telephone & Radio Corp.
 Interstate Mfg. Corp., 125 Sussex Ave., Newark 4, N. J.—H
 Isolantite, Inc., 343 Cortlandt St., Belleville 9, N. J.—CA, CC, W
 Jelliff Mfg. Corp., C. O., Pequot Rd., Southport, Conn.—R
 J.F.D. Mfg. Co., 4111 Ft. Hamilton Pkwy., Brooklyn 19, N. Y.—A, CO, FL, IC, MC, H, R, RC
 Johnson Co., E. F., Waseca, Minn.—"Johnson"—AT, AN, CC, SD
 Keeney & Co., Inc., J. H., 6610 S. Ashland Ave., Chicago 36, Ill.—CA
 Kellogg Switchboard & Supply Co., 6650 S. Cicero Ave., Chicago 38, Ill.—CA, CO, FL, G, HU, IC, M, S
 Kennecott Wire & Cable Co., Phillipsdale, R. I.—M
 Kinetic Electronics Corp., 235 E. 42nd St., New York 17, N. Y.—CA, CO, H
 King Laboratories, Inc., 205 Onelda St., Syracuse 4, N. Y.—FL
 Kings Electronics Co., 372 Classon Ave., Brooklyn 5, N. Y.—A, AT, CA, W
 Kraft & Kraft, Hicksville, N. Y.—H
 Lapp Insulator Co., Inc., 24 Craigie St., Lelroy, N. Y.—CC, W
 Lenz Electric Mfg. Co., 1751 N. Western Ave., Chicago, Ill.—A, HU, IC, M, S
 Lewis Engineering Co., 52 Rubber Ave., Naugatuck, Conn.—CA, CO, IC, H, RC, WS
 Lowell Insulated Wire, 171 Lincoln St., Lowell, Mass.—A, CA, CO, HU, IC, MC
 Makepeace Co., D. E., Vine & Dunham Sts., Attleboro, Mass.—W
 Martins Instrument Co., Inc., 316 37th St., Brooklyn 17, N. Y.—H, CA
 Meissner Mfg. Div., Maguire Industries, Inc., Mt. Carmel, Ill.—L
 Miller Electric Co., 127 High St., Pawtucket, R. I.—CA, CO, H, WS
 Mines Equipment Co., 4215 Clayton Ave., St. Louis 10, Mo.—CA
 Molded Insulation Co., Aircraft Control Div., 335 E. Price St., Philadelphia 44, Pa.—H, W
 Montgomery Co., Windsor Locks, Conn.—CO, R, RC
 Multicoupler—Amy, Aceves & King, Inc.
 National Molding Co., 2141 W. Washington Blvd., Los Angeles 7, Calif.—H
 New England Electrical Works, Inc., 365 Main St., Lisbon, N. H.—A, FL, HU, IC, L, M, WS
 Ney Co., J. M., 71 Elm St., Hartford 1, Conn.—R
 Noma Electric Corp., 55 W. 13th St., New York 11, N. Y.—CC, CO, HV, IC, M
 Nonotuck Mfg. Co., Water St., Holyoke, Mass.—FL, HU
 North American Phillips Co., Inc., 100 E. 42nd St., New York 17, N. Y.—FW
 Northern Electric Co., 5224 N. Kedzie, Chicago, Ill.—RC
 Northern Mfg. Co., Inc., 36 Spring St., Newark 2, N. J.—FW
 Okonite Co., Passaic, N. J.—AN, ANT, CC, CO, HV, IC, S, SI, SD
 Packard Electric Division, General Motors Corp., Warren, Ohio—AN, CA, CO, HU, IC, H, S, ST, WS
 Pheips Dodge Copper Products Corp., 40 Wall St., New York 5, N. Y.—"TNCA"—AN, ANT, CC, HV, HU, IC, M, MC, S, SD
 Pilot Industries, Inc., 202 E. 44th St., New York 17, N. Y.—CA, W
 Plaston—Plastic Wire & Cable Corp.
 Plastic Wire & Cable Corp., 2 S. Golden St., Norwich, Conn.—"Plasticon"—TC, CO, HV, HU, IC, MC, S, SI, SD
 Plastoid Corp., 19 W. 44th St., New York 18, N. Y.—CA, CC, CO, HV, HU, IC, H, S, WS
 Porcelain Products, Inc., Parkersburg, W. Va.—G
 Precision Tube Co., 3828 Terrace St., Philadelphia 28, Pa.—WS
 Premax Products, Div. Chisholm-Ityder Co., Inc., 4612 Highland Ave., Niagara Falls, N. Y.—A, AT
 Promentele Radio & Television Corp., 1721 Elmwood Ave., Buffalo 7, N. Y.—H
 Radex Corp., 53 W. Jackson Blvd., Chicago 4, Ill.—CC
 RCA Victor Division, Radio Corp. of America, Front & Cooper Sts., Camden, N. J.—"RCA"—FW
 Rea Magnet Wire Co., Inc., E. Pontiac St., Ft. Wayne, Ind.—M
 Rhode Island Ins. Wire Co., Cranston, R. I.—HU, IC
 Rice's Sons, Bernard, 325 Fifth Ave., New York 16, N. Y.—CA
 Riggs & Jeffreys, Inc., 73 Wintthrop St., Newark 4, N. J.—CA, H
 Rittenhouse Co., A. E., Honeoye Falls, N. Y.—CA
 Riverside Metal Co., Riverside, N. J.—R
 Rockbestos Products Corp., 100 Mitchell Rd., New Haven 4, Conn.—HV, HU, IC, M, S
 Roebbling's Sons Co., John A., 640 S. Broad St., Trenton 2, N. J.—A, AT, CO, FL, G, HU, IC, M, MC, S, SI, WS
 Rome Cable Corp., 332 Ridge St., Rome, N. Y.—IC, M
 Royal Electric Co., Inc., 95 Grand Ave., Pawtucket, R. I.—CA, CO, IC
 Runzel Cord & Wire Co., 4727 W. Montrose Ave., Chicago 47, Ill.—CA, CO, HU, IC, H, WS
 Rupp's Assembling & Mfg. Works, 2341 N. Seminary Ave., Chicago 14, Ill.—CA, CO, IC
 Sandee Mfg. Co., 3945 N. Western Ave., Chicago 18, Ill.—CC, IC, WS
 Schott Co., Walter L., 9306 Santa Monica Blvd., Beverly Hills, Calif.—"Walsco"—A, CA, CO, IC, H, RC
 Searle Aero Industries, Inc., P. O. Box 111, Orange, Calif.—CA
 Selector Mfg. Corp., 21-10 49th Ave., Long Island City 1, N. Y.—CC
 Silkenite—Acme Wire Co.
 Simplex Wire & Cable Co., 79 Sidney St., Cambridge 39, Mass.—CC, HV, IC, MC, S, SI, SD
 South Shore Radio & Electric Corp., 6815 Stony Island Ave., Chicago 49, Ill.—CA
 Special Electric Labs., 7657 S. Central Ave., Los Angeles 1, Calif.—CA
 Spencer Wire Co., 68 Pleasant St., W. Brookfield, Mass.—R, WS
 Supreme Instruments Corp., Greenwood, Miss.—CA
 Suprenant Electrical Insulation Co., 84 Purchase St., Boston 10, Mass.—HU
 Swedish Iron & Steel Corp., 17 Battery Pl., New York, N. Y.—R
 Sweeco Wire Co., 138 Rowley, Winsted, Conn.—L, M
 S-W Inductor Co., 1056 N. Wood St., Chicago 22, Ill.—A
 Thermionic Engineering Corp., 32 W. 12th St., Bayonne, N. J.—CA
 Titeflex, Inc., 500 Frelinghuysen Ave., Newark 5, N. J.—"Waveflex"—W
 Uniform Tubes, Shurs Lane & Lauriston St., Philadelphia 28, Pa.—CC, S, SI, WS
 U. S. Rubber Co., 1230 Sixth Ave., New York 20, N. Y.—A, CA, CC, CO, HV, HU, M, H, S
 Walsco—Walter L. Schott Co.
 Waveflex—Titeflex, Inc.
 Western Insulated Wire Co., 1001 E. 62nd St., Los Angeles 1, Calif.—CA, CO, HV, IC, MC, S, SI, WS
 Westinghouse Elec. Corp., East Pittsburgh, Pa.—AT, FW, M, W
 Weymouth Instrument Co., 1440 Commercial St., East Weymouth 89, Mass.—CC, CO, W
 Wheeler Insulated Wire Co., Inc., 378 Washington Ave., Bridgeport 4, Conn.—L, M
 Whitaker Cable Corp., Kansas City 16, Mo.—CA, IC, H
 White Electric Cable Co., Maple Ave., Haverstraw, N. Y.—AN, ANT, CC, CO, FL, HU, IC, M, MC, S
 Whitney Blake Co., 1565 Dixwell Ave., New Haven 14, Conn.—CC, CO, HU, IC, MC, S
 Wickwire Spencer Metallurgical Corp., 260 Sherman Ave., Newark 5, N. J.—FL, FW
 Wind Turbine Co., West Chester, Pa.—A, AT, G
 Wood Electric Co., Inc., C. D., 826 Broadway, New York 3, N. Y.—CO

HOW TO USE THIS DIRECTORY

To find the manufacturer of any product, look first in the Index, beginning on page D-3. For example, "Counters, electronic 12-C", means that under Section 12, "Electronic Control Equipment", the letter "C" after a manufacturer's name indicates his ability to supply electronic counting devices.

SURVEY of WIDE READING

Electronic news in the world's press. Review of engineering, scientific and industrial journals, here and abroad

Positive Grid Current

J. L. H. Jonker and B. D. H. Telegen (Philips Research Reports, Eindhoven, Vol. 1, No. 1, October 1945)

The current resulting from electrons flowing directly from the cathode to a positive grid and the current resulting from electrons returning from the plate-grid space to the grid are computed. The article thoroughly investigates the problem, and compares the results obtained with rubber membrane studies.

Comparison of Beam Power Tubes and Triodes

J. K. Hillard (Journal of the Society of Motion Picture Engineers, January, 1946)

An experimental comparison is reported between the performance of beam power-tubes and triodes used in power amplifiers for driving loudspeakers. Since the intermodulation method of testing amplifiers appears to have the best correlation with actual listening tests, it was used in the present investigation.

It is held that if suitable precautions regarding feedback are taken and if the coupling transformer is carefully designed, simple push-pull beam power tube circuits can deliver the same audio power as triodes with the same or less distortion, a high over-all power efficiency is obtained, and the signal-to-noise ratio is improved. Intermodulation tests establish superiority of beam power tube performance regarding distortion over triodes for the same output power.

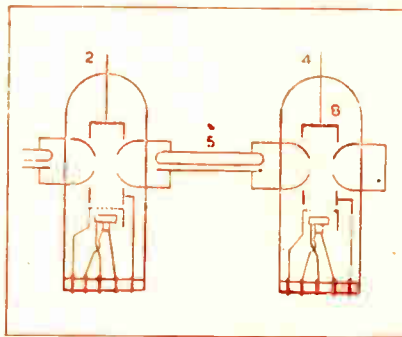
Frequency Stabilization of Resonators

E. M. I. Laboratories (Electronic Engineering, London, February 1946)

In some instances it is desirable to vary the average beam current in a Klystron tube. This results in a change in the resonant frequency of the circuit. To stabilize the resonant frequency, a second variable intensity electron beam is introduced into the system and its intensity varied to compensate for the variation in resonant frequency caused by the original beam. This

second beam must not interfere with the operation of the device in any other way and therefore must not generate any oscillations.

The figure shows a particular embodiment of the method for a reflex Klystron 2. Tube 4 is similar to tube 2 but prevented from generating oscillations by choosing a suitable potential for the plate 8. Depending on the length of coupling line 5, the beam current in tube 4 is controlled in intensity relative to the modulation of the beam intensity in tube 2 in such a manner that the frequency of oscillations set up in the resonator of tube 2 remains constant, or nearly so. If the length of line 5 is chosen appropriately, the beam current intensities of the two tubes may be modulated in antiphase.



One tube and one resonator may be employed, the system being constructed to be traversed by two electron beams. Instead of utilizing an auxiliary electron beam, a controllable gaseous discharge may be used.

Pentode and Beam Power Tube

L. Chretien (Toute La Radio, Paris, Dec. 1945)

The performance of a pentode as a power output stage is compared with that of a beam power tube, in particular with that of a 6L6. The dynamic characteristics are plotted and the generation of even harmonics for the beam power tube and of odd harmonics for the pentode is explained. Finally it is noted that the pentode is superior for a low load impedance while the tetrode is to be given preference for high load impedances.

Transmission Line Impedance Matching

C. T. Tai (Journal of Applied Physics, Jan. 1946)

The problem of using shunt and series sections of transmission lines as matching devices is investigated mathematically. When used alone both are limited to a certain range of impedances. However, the shunt sections are useful precisely in the range in which the series section cannot yield a match. If an additional section of line is included, both systems can be designed to match impedance. Simple formula for the required lengths of matching lines are derived; graphical representation is used extensively.

Spark-Generated Waves

M. G. Kelliher and E. T. S. Walton (Wireless Engineer, London, February 1946)

Short electromagnetic waves in the centimeter region generated by the spark between short tungsten rods immersed in oil are investigated by means of a concentric line resonator fitted with a crystal detector (silicon and tungsten point). The experiments establish that if the transformer used to produce the sparks is run on 50 cycles, about 20 to 30 wave trains are emitted every 0.01 second and that these wave trains show very much smaller damping than is predicted by theory. It is suggested that some mechanism may be present tending to maintain the oscillations. Whatever may be the explanation, if such a mechanism is present, the spark method of generating very short waves may be of more use in the future than has hitherto seemed likely.

Monochromatic X-Rays

H. Lipson, J. B. Nelson and D. P. Riley (Journal of Scientific Instruments, London, Oct. 1945)

Crystal-reflected X-radiation is monochromatic, i.e., it contains rays of one wavelength only. It is being increasingly used for taking diffraction photographs because it eliminates the background due to the white radiation present in the direct beam from the X-ray tube, which permits more information to be obtained from diffraction patterns. Properties essential for the use in X-ray reflection of various crystals are reported and an instrument for mounting is described.

ATOMIC

Instrument Company PRESENTS

A PRECISION ELECTRONIC
for RESEARCH and INDUSTRY

COUNTER



HERE is our Model 101 scaler whose many design innovations make it an indispensable tool to those engaged in radioactivity research. Its immediate reliability of operation and adaptability to associated equipment fulfill all necessary requirements. The ease of operation of this unit makes precise selective counting in industrial applications both simple and inexpensive.

A pulse amplitude discriminator is incorporated in the input circuit so that, if desired, only pulses greater than a pre-determined amplitude will operate the scaler. The output circuit is especially arranged to accommodate various types of electro-mechanical impulse counters.

Other Units in Our Line
Include:

- Amplifiers
- Pre-Amplifiers
- Counting Rate Meters
- Regulated High Voltage
Power Supplies
- Radiation Meters
- Precision Pulsers
- Precision Time Delay
Circuits

We welcome your inquiries
regarding specific units and
special problems which we
may assist in solving.

ATOMIC



Instrument Company

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• MANUFACTURERS

• CONSULTANTS

NEWS OF THE INDUSTRY

Aieron Induction RR Radio Authorized

In a new departure in licensing policy, the FCC late in March authorized Aieron Mfg. Corp. to engage in experimental operation of inductive carrier radiocommunications with moving trains of the Kansas City Southern Railway. Permission for the inductive radio service for railroads indicated new licensing regulations and standards for this service in which Aieron has taken a leading role, along with the Union Switch & Signal Co., which is installing the system on the Pennsylvania Railroad.

Aieron was granted temporary authority for a period of three months to operate 22 portable and 10 mobile low-frequency transmitters along the right-of-way of the Kansas City Southern for communication with moving trains, principally by means of the induction of radio frequency currents to and from wayside telegraph landline conductors.

The twenty-two portable transmitters will be located at various wayside stations and the ten mobile transmitters will be installed on five cabooses and five locomotives to be operated on the KCS railroad between Kansas City, Mo., and Shreveport, La. The portable transmitters will have a maximum power of 6 watts and the mobile transmitters will operate with 50 watts maximum power. The frequency of 175 kc has been assigned on a temporary basis. All equipment will be designed for frequency modulation.

Thermador Reorganizes Executive Personnel

Several changes have been made in the executive personnel of the Thermador Electrical Mfg. Co., Los Angeles. William E. Cranston has been elected president of the organization succeeding Harrison H. Fogwell who has advanced to the post as chairman of the board. Cranston was formerly vice-president and general manager. Other changes involve the election of Clyde I. Harding as vice-president in charge of production, F. M. Pence, vice-president in charge of

engineering and Frank A. Ballman, vice-president in charge of sales. The main office of the company is at 5119 District Blvd., Los Angeles.

Broadcast Engineers Plan Organization

Is there a need for a new, separate organization of broadcast engineers and technicians? Many engineers think there is. During the sixth annual Broadcast Engineering Conference, held March 18-23 at Ohio State University in Columbus, a movement was started looking to the formation of such a body provided sufficient interest in its possibilities should become evident. The idea originated in a letter addressed to Howard Frazier of NAB by Karl B. Hoffman, technical director for the Buffalo (N.Y.) Broadcasting Corp., which operates station WKBW. The thought, discussed by a gathering of engineers brought together during the conference by James Schultz, chief engineer of station WCAE, is that such an organization could perform a valuable service by improving the status of engineers and functioning as a sort of mutual benefit society. Idea would be to gain with station management better recognition for engineers and their accomplishments. Engineers who are interested in the formation of an organization have been invited to write to engineer Schultz and state their views.

RMA Committee Reports on Production Problems

In a dramatic presentation entitled "The Radio Industry Reports to OPA—Six Months After VJ Day," a special committee on Industry Production Problems of the Radio Manufacturers Association reports production difficulties encountered by producers of certain component radio parts, and by the set manufacturers themselves.

The report indicates that during the last quarter of 1941, the industry, with 54 licensed manufacturers, turned out 3,581,000 radio sets worth \$80,235,000. As of VJ Day the industry had 141 set manufacturers who in 1944 had produced \$2,834,000,000 worth of radio and related material.

The widely publicized statement of three and one-half to four million radio sets predicted for last Christmas by the WPB is prominently mentioned in the report and the actual production of "less than 300,000 sets—including an undetermined number of so-called 'morale' sets built under priorities for the U.S. Government," is disclosed.

Emphasizing throughout its report that competition is not only the practical way to production but also the surest price leveler, the committee cites some interesting statistics to support its claims:

Between 1922 and 1939 there were

(Continued on page 134)

Conventions and Meetings Ahead

Society of Motion Picture Engineers (J. Haber, Hotel Pennsylvania, New York); Fifty-ninth Semi-Annual Technical Conference, May 6* to 10, 1946, Hotel Pennsylvania, New York City.

Acoustical Society of America (Wallace Waterfall, Celotex Corp., 120 So. LaSalle St., Chicago, Ill.); May 10 to 11, New York.

American Institute of Electrical Engineers (H. H. Henline, 29 W. 39th St., New York); Southeastern Dist. Meeting, May 13 to 16.

Radio Parts and Electronic Equipment Conference and Trade Show (Kenneth C. Prince, 221 No. LaSalle St., Chicago, Ill.); May 13 to 16.

Institute of Radio Engineers, Chicago Section (135 So. LaSalle St., Chicago 3, Ill.); May 17.

American Society of Mechanical Engineers (Ernest Hartford, 29 W. 39th St., New York, N. Y.); Semi-Annual Meeting, June 17 to 20, Detroit, Mich.

American Society for Testing Materials (260 So. Broad St., Philadelphia, Pa.); Forty-ninth Annual Meeting, June 24 to 28. Buffalo, simultaneously, Seventh ex-

hibit of testing apparatus and related equipment.

Society for Experimental Stress Analysis (W. M. Murray, President, Central Square Station, Cambridge 39, Mass., Post Office Box 168); Spring Meeting, June 24 to 26, Hotel Statler, Buffalo, N. Y.

American Institute of Electrical Engineers (H. H. Henline, 29 W. 39th St., New York); Summer Convention, June 24 to 28, Detroit. Pacific Coast Convention, Aug. 26 to 30, Seattle.

Instrument Society of America (L. Susany, Secretary, Carnegie Institute, 4400 Forbes St., Pittsburgh); 1946 Exhibit and Conference, Sept. 16 to 20, Pittsburgh, Pa.

National Electronics Conference, October 3, 4 and 5, 1946, Edgewater Beach Hotel, Chicago.

Television Broadcasters Association, Inc. (500 Fifth Avenue, New York 18, N. Y., Room 1038, Will Baltin, Secretary); Conference, October 10 and 11, Waldorf-Astoria Hotel, New York City.

American Welding Society (Miss M. M. Kelly, 29 W. 39th St., New York, N. Y. PE 6-9220); Annual meeting, October 24, 1946, New York City, and November 17 to 22, Atlantic City, N. J.

FOR SAFE, ECONOMICAL, AUTOMATIC
Power Control at All Times...

GET ADLAKE PLUNGER-TYPE RELAYS!

HERE'S WHY Adlake Plunger-Type Mercury Relays assure safe, economical, automatic power control under any condition:

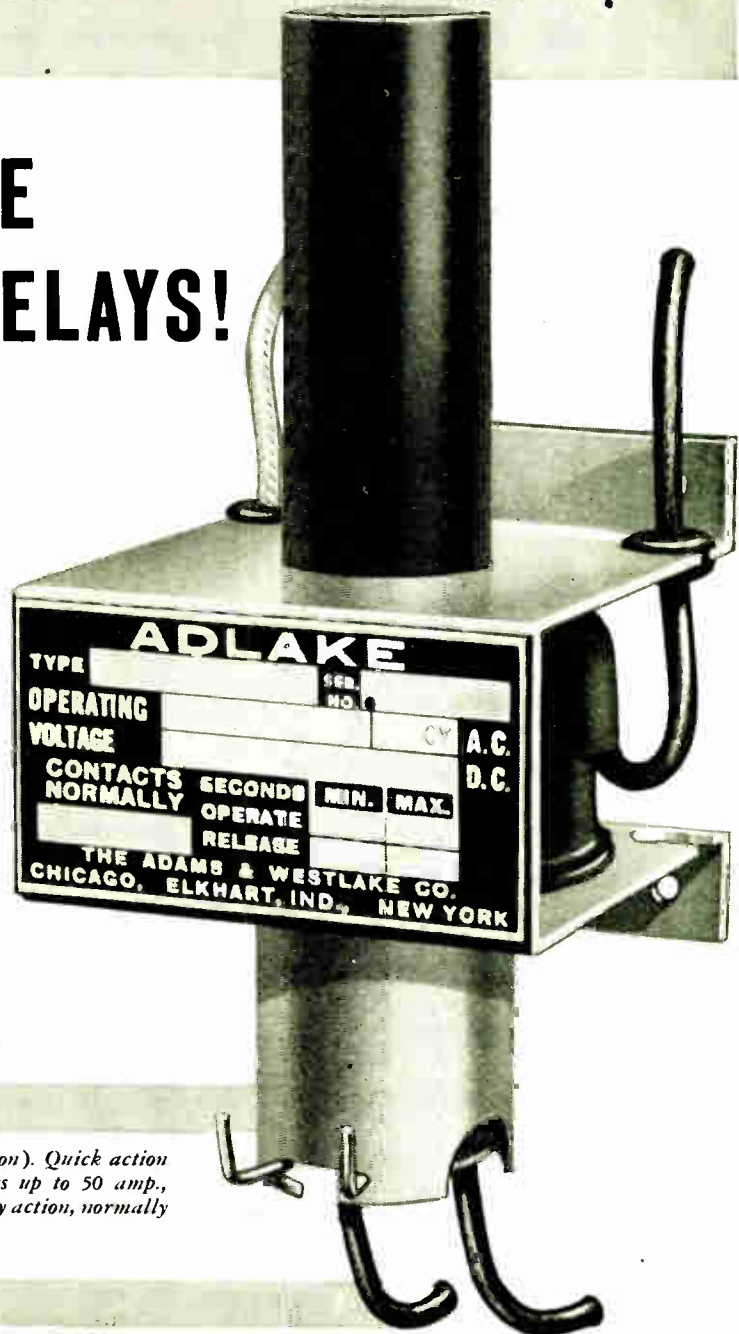
All contact mechanism is *hermetically sealed* in armored glass or metal cylinders so dirt, dust, moisture or oxidation can't possibly interfere with operation.

Liquid metal mercury is *positive* in action, chatterless, silent, impervious to burning, pitting or sticking.

They're absolutely *safe*, and since they're hermetically sealed, Adlakes perform without servicing or maintenance—no periodic cleaning of contacts needed.

And Adlakes are *dependable*—simple in design and principle, no complicated parts to wear out or get out of order!

There's an Adlake Relay for every need. May we suggest the type best suited for yours? Write today for free bulletin.



Model 1040 (for A. C. operation). Quick action available with contact ratings up to 50 amp., A. C. Either quick or time delay action, normally open or closed.



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WASHINGTON

★ ★ ★ Latest Electronic News Developments Summarized
by Electronic Industries' Washington Bureau ★ ★ ★

GOAL OF 22 MILLION SETS—The radio manufacturing industry has set its sights for volume production during the remainder of 1946, with an estimate of 21,981,810 receivers, including 85,000 adaptors and converters and 677,050 sets for export, contained in the replies furnished to the FCC's recent survey. In order to achieve this goal, the radio manufacturing industry must be well freed of the price and materials bottlenecks which have clogged its reconversion path since V-J Day. The FCC or any other Government agency cannot expect the impossible without relief from these obstacles. During May and the remaining seven months of this year volume production at well over 2 million sets per month has to be achieved, since only an estimated 4 million receivers were produced in the first four months.

FM SET PRODUCTION SMALL UNTIL STATIONS ON AIR—Manufacturers' estimates of 1946 output of only 1,800,000 FM receivers, of which almost all would be combination AM-FM sets, were distinctly disappointing to the FCC in its hopes of launching this new broadcast service. The Commission emphasized that "in the light of the rapid progress being made for the development of FM on the station side" it hoped manufacturers may revise their production schedules to include a greater portion of FM receivers. But the manufacturers naturally do not want to "put the cart before the horse" and when there is widespread FM broadcasting service the industry will produce the receivers desired by the public. The industry can convert in a very short time to manufacture great quantities of FM sets, but does not wish to go overboard until there is a real public demand for these receivers and FM broadcasting also gets out of the woods from the new CPA construction limitations on new transmitter and studio buildings.

MOBILE RADIO LICENSES—To insure stability of investment in equipment and to stimulate operations in the highway and urban mobile radiotelephone fields; the FCC has recognized the problems of the users of these new services—bus, trucking, taxicab, etc., companies, as well as telephone companies planning to furnish it. It is realized that a long-term license period under experimental grants (five years now being considered) and relaxed experimental authorization to permit commercial utilization are necessary and the FCC considered effectuation of this program. This would give the Commission a "breathing spell", in view of its tremendous load of AM-FM-TV broadcasting case docket, to postpone hearings on its future policies regarding operation and regulations of the mobile services—particularly the issue of whether telephone companies or bus-

truck-taxicab groups should operate, or a combination of both.

LARGE FIELD IN MOBILE SERVICES—Radio manufacturers are aware of the potentialities in this field. FCC furnished ELECTRONIC INDUSTRIES with recent compilation of applications for March only which comprised 43 taxicab, ambulance companies, detective agencies, customer-driven automobile companies proposing as many land stations and 650 portable-mobile units. With OPA taking off price controls from transmitters, FCC feels "flood just starting". Bell System and Independent telephone companies, likewise, have filed large group of mobile applications, including one interesting experiment by a Michigan Independent for carrier radio-telephone service. Leading manufacturers, which are to furnish equipment, include RCA, Federal Telephone & Radio, Galvin, Link, General Electric, Western Electric, and Communications Equipment Co.

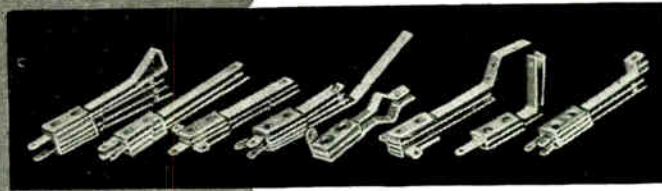
RAILROAD RADIO ON MARCH—Important departure in licensing policy in railroad radio field was made by FCC in authorization of Aireon to engage in experimental operation of inductive service radiotelephone with moving trains. Commission prognosticated new licensing regulations and standards to obviate barriers under present "low power" rules, designed to prevent interference from so-called radio "gadgets" such as mystery control and phonograph oscillator devices. New policy expected to stimulate inductive carrier method on railroads. Besides Aireon, this system has been pushed by Union Switch & Signal which is making a \$1 million installation on Pennsylvania Railroad. Another experiment, interesting to FCC, was Farnsworth's use of a satellite transmitter technic at its demonstration near Detroit. Telephone service to passengers on moving trains also has been launched by Chesapeake and Ohio Lines on its Pere Marquette railroad.

MISCELLANY—Congressional deliberations on Bamberger television tower location controversy in Washington are interesting guidepost for future situations in other cities. . . . Amateurs are coming back on air in large numbers; "hams" with 2,655 applications led all other services in March. . . . Comprehensive state-wide networks of educational FM stations in 32 states, projected by U. S. Office of Education and state school departments. . . . RCA demonstration of "air-borne television" with its potentialities for industrial use attracted interest of high Government and military officials.

National Press Building
Washington, D. C.

ROLAND C. DAVIES
Washington Editor

Switches of Tomorrow For Designs of Today

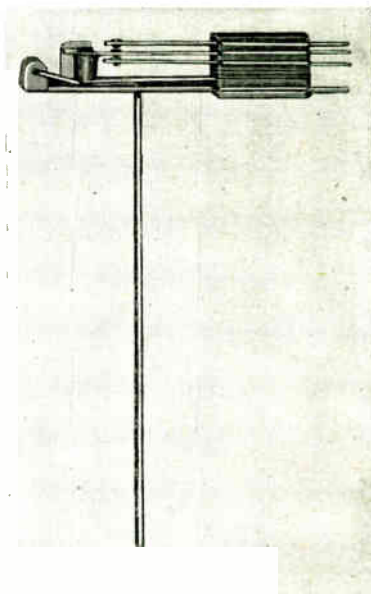


SWITCHES by GUARDIAN for every purpose

Scan the brief pictorial review of Guardian Contact Switch assemblies shown above and you will probably see a switch that is comparable to your needs. Each unit represents a switch so practical, so saving of assembly time, energy, materials and money, as to be worthy of your immediate consideration.

The Guardian Featherub Switch is an example of such true efficiency. It is shown to the lower right of this page. An original Guardian creation, it is actuated mechanically and is adaptable to manual, roll-over or cam action. The Guardian Featherub and all other units shown are standard items. There are hundreds of other types, all of the highest quality. Contact blades are obtainable in phosphor bronze tinned to withstand salt spray test, also in standard Guardian phosphor bronze. All switches are properly insulated. The switch you need is here singly or in combination... one or a million! Try Guardian Switches for performance, price and delivery. Write.

You are invited to visit Guardian's Booth, No. 51, Radio Parts and Electronic Equipment Trade Show, May 13-16, Stevens Hotel, Chicago



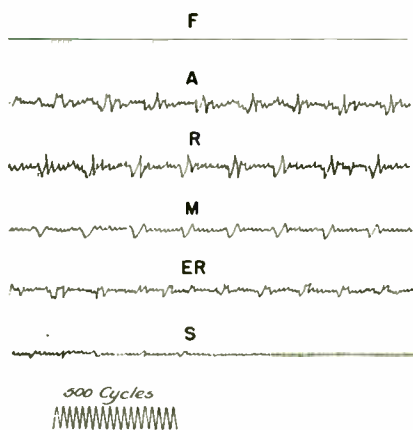
GUARDIAN
FEATHERUB
SWITCH

GUARDIAN ELECTRIC
1622-F W. WALNUT STREET CHICAGO 12, ILLINOIS

NEW PATENTS ISSUED

Voice Transmission System

It is claimed that voice currents are of a repetitious nature, as illustrated in the first figure for the word "farmer" which apparently consists of six different sounds. Each sound in turn is composed of one or more sets of repeated waveforms in continuous sequence. Based on this statement, the invention proposes to transmit only



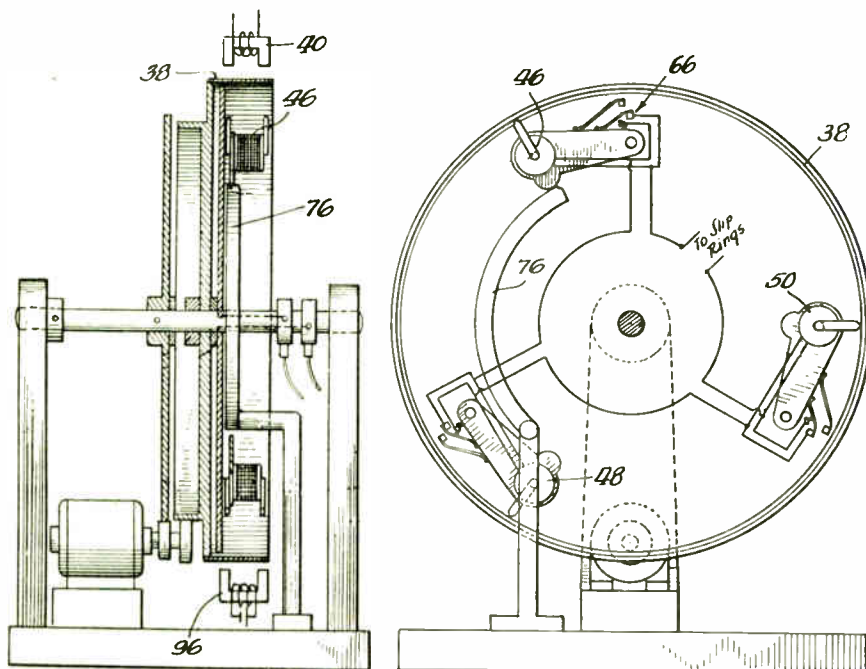
characteristic sections of the repetitious voice currents that correspond to each sound—one-tenth is mentioned as a suitable value—and to simultaneously reduce the frequency by the same factor. The transmitted signal will then occupy only one-tenth the audio frequency range but it will take up the same length of time as the original sig-

nal. At the receiver the frequency is increased by the same factor and the eliminated sections reinstated by repeating each portion as many times as the signal is a fraction of the original signal at the transmitter.

The system permits reduction in the transmitted audio frequency band by a factor of 10 in the above example. It also provides for secrecy because only a receiver of the same frequency multiplying and repetition rate as the transmitter would reproduce intelligible voice currents.

A particular apparatus for the realization of this method is claimed and illustrated in the second figure. It involves magnetically recording the voice signal on a rotating tape 38 by means of a conventional recording head 40. The pick-up coils 46, 48 and 50 connected to the output are rotatably mounted and in contact with the tape 38 only while moved outward by the stationary cam bar 76 so that at any one instant only one of the pick-up heads takes off signals from the recording tape. Each pick-up is short-circuited by switch 66 when out of engagement with the tape.

The pick-ups rotate at nine-tenths the peripheral speed of the recording tape. Consequently the signal frequencies taken off the tape are one-tenth the recorded signal frequencies, however, nine-tenths of the signal will be eliminated. The message on the tape is wiped off by means of the electromagnet 96. At the receiver, the

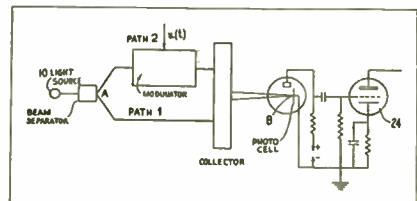


pick-up heads and the recording tape rotate in opposite direction, the pick-up heads with a speed that is nine times that of the recording tape.

T. W. W. Holden, The Magnavox Co., (F) August 19, 1942, (I) October 30, 1945, No. 2,387,906.

Modulation by Means of Light Interferences

It is known that, due to interference, the light intensity I of two superimposed, coherent, monochromatic rays emitted by the same source, will be equal to $I = 2i(1 + \cos 2\pi d/\lambda)$, where i is the intensity of the component rays, λ the wavelength, and d the difference in the equivalent optical path length traveled by the two rays between the point of separation A and the point of superposition B. If the difference in effective optical path is linearly controlled by a signal $u(t)$, the light intensity I of the combined rays will be equal to the cosine of a constant factor times $u(t)$; in other words, the light intensity will be frequency modulated.



The patent describes various methods of changing the effective optical path length to obtain frequency modulation of the light intensity which is then converted into a frequency-modulated electrical signal by means of a photo-cell. A schematic representation of this system is shown in the figure. It is claimed that a comparatively wide linear frequency deviation may be effected by the principle of light interference; a change in effective path length of one millimeter corresponding to a frequency change of 16,000 radians for violet light.

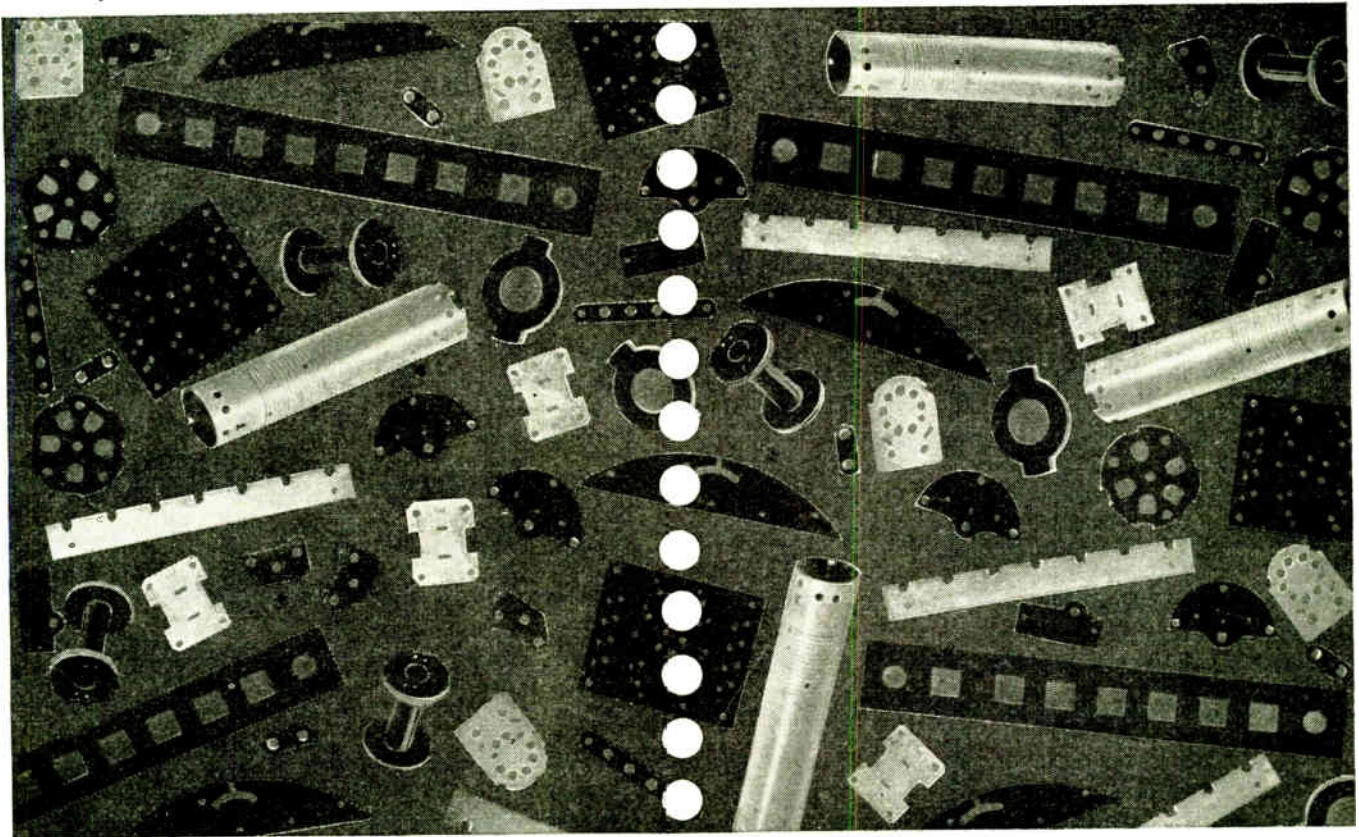
The effective optical path length may be varied by moving a reflecting mirror actuated by a relay or by a bilaminar interferometer where one or both of the laminate are made of piezo-electric material and the signal voltage is applied to the crystal faces, the thickness of the lamina in the direction of light passage then causes varia-

(Continued on page 136)

*PLENTY of
Completely Machined
Electrical
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Large increases in machining equipment for Formica electrical parts installed to meet the demands of war, now make it possible for Formica to handle the machining of a much greater volume of parts, and to provide prompt service.

Modern equipment capable of a high level of accuracy and uniformity in the output has raised the quality of Formica machined parts.



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★ TELEVISION TODAY ★

New Developments in the Video Field

Westinghouse Granted Color Tele License

First licenses to embody CBS' ultra-high frequency color inventions in television receivers and studio apparatus have been granted to the Westinghouse Electric Corp. Arrangements, on a patent royalty basis, are for five years and provide for an extension of the agreement. Royalties to CBS range from 25 cents to one dollar on receiving sets, depending on the retail price, and one per cent of the net selling price of complete color television transmitter studio apparatus.

The scale of royalties on color television receivers and combinations provides that sets made by the licensee to be sold at a retail price of less than \$100 will yield a royalty of 25c each; those from \$100 to \$180, a 50-cent royalty; from \$180 to \$250, a 75-cent royalty; from \$250 and up, a \$1 royalty unless and until the U. S. Department of Commerce Combined Index of Retail Prices (or the Bureau of Labor Statistics Cost of Living Index) rises 25% or more from the January 1, 1945, level. Thereafter, if CBS gives the licensee three months' prior notice, the contract calls for a royalty of one-third of one per cent of the proposed retail price.

UNO Council Opening Televised

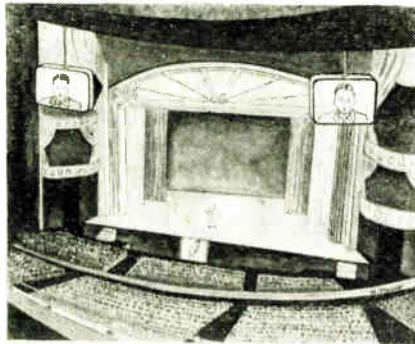
When chairman Dr. Quo Tai-chi of China opened the first United Nations Security Council conference on United States soil on March 25, a complete television pickup and receiving system swung into action to bring proceedings of the meeting to representatives of press and radio at Hunter College and in the Radio City studios of the National Broadcasting Co. The combined facilities of NBC Television and the RCA Victor Division of the Radio Corp. of America were used to make this closed-circuit television pickup possible.

Using the super-sensitive RCA Image Orthicon camera tube, the installation at Hunter College was designed to facilitate press and radio news coverage of world events. Wired television carried the signal

from a special booth overlooking the Council chamber to twelve RCA receivers in a special viewing room for the press adjoining the Council chamber. A radio-relay transmitter sent the picture signals from UNO headquarters to Radio City where they were flashed on six more television receivers placed by NBC Television in studio 8-G.

DuMont Adds

Allen B. DuMont Laboratories, Inc., Passaic, N. J., is preparing for considerable expansion. About September 1 a new plant at 1000 Main Avenue in Clifton, N. J., will be occupied and will be devoted to the manufacture of oscillographic instruments and television receivers.



Intra-Auditorium Vision Relay

For the convenience of remote audiences where people are in large auditoriums, theatres, and even outdoor assemblies, the intra-auditorium vision relay will do for the eye what the Public Address system now does for the ear, reports W. S. Stewart, Editor, International Photographer.

Eventually, the physical dimensions of such vision relay equipment may be reduced to the point where it is portable in the same sense that public address systems are portable today. Motion picture exhibitors might relay, for short intervals, portions of the films being screened inside to a screen in front of the theatre. This could supplement the marquee as a patron "teaser". Commercial development of such a system will make opera glasses obsolete, as well as create new jobs in the manufacture, operation and maintenance of equipment.

Six Tele Companies Cover Bomb Test

Television will join with other public information media in covering the atomic bomb test, "Operation Crossroads," off Bikini Atoll sometime in May. The telecasters have received permission from Joint Task Force One to send a cameraman to "Operation Crossroads" to film the event for television viewers in New York, Chicago and Philadelphia.

The six tele-participants in "Operation Crossroads" are the Columbia Broadcasting System (WCBW), New York; American Broadcasting Co., New York; Balaban & Katz Corp. (WBKB), Chicago; Allen B. DuMont Laboratories (WABD), New York; National Broadcasting Co. (WNBT), New York, and the Philco Radio and Television Corp. (WPTZ), Philadelphia.

All film made by the tele-cameraman will be forwarded through official channels to the U. S. Navy Photo Science Laboratories in Anacostia, D. C., for developing and security screening. Film approved will be turned over to the television pool for screening and selection of individual footage by participants.

Philco Withdraws in Philly-Wash

Following the decision of FCC to allot the nation's capital's fourth television channel to DuMont, Philco has withdrawn its application both there and in New York and henceforth will operate only its Philadelphia Station WPTZ. DuMont already is operating a low power experimental station in Washington, expected to have its high power commercial station there in operation coincidentally with the opening of its New York Wanamaker studios.

WBKB Switches Channels

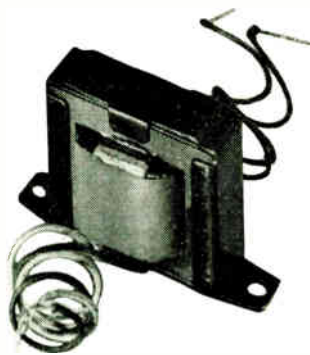
First of March the Balaban & Katz television station WBKB shut down for a two-week period to make technical adjustments incident to the switch from its present channel No. 3 to channel No. 4. The new assignment is in the 66-72 mc band.

*Title registered U. S. Patent Office.

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Jefferson Electric Transformers incorporate advancements in engineering design, with production methods and control to insure high uniform quality.

The superiority of Jefferson Transformers is based on such vital and fundamental quality characteristics as: improved steel to reduce electrical losses; advanced methods of using carefully selected iron for laminations followed by Jefferson's own process of annealing; improved compounds, materials and impregnation methods to provide greater resistance to moisture, extreme heat and cold.

In addition to these features, full control over all manufacture, assembly and inspection insures that every Jefferson Transformer is laboratory correct whether ordered in small lots or hundreds of thousands.

When making transformer replacements or considering new installations—select your transformers from the Jefferson Electric Line... JEFFERSON ELECTRIC COMPANY, Bellwood (Chicago Suburb), Illinois. *In Canada:* Canadian Jefferson Electric Co. Ltd., 384 Pape Avenue, Toronto, Ont.

T R A N S F O R M E R S

WHAT'S NEW

Devices, products and materials the manufacturers offer



DC Relay

Barber-Colman Co., Rockford, Ill., has developed the Micropositioner, a highly sensitive polarized dc relay having a floating neutral position of contacts. It is designed for use in plate circuits of electronic systems. Alnico permanent magnets are used and contacts are platinum-ruthenium. Two models are available, a voltage sensitive and a current sensitive type.—Electronic Industries



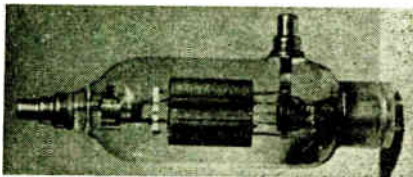
Aircraft Receiver

An aircraft range receiver model ARR-1 is now in production at the electronics Division of Maguire Industries, Inc., Bridgeport, Conn. The set weighs 3 lbs 10 oz. complete with tubes and batteries. Model ARR-1 covers the radio range from 190 to 420 kc and is provided with a voice filter permitting reception of tower instructions and weather reports.—Electronic Industries



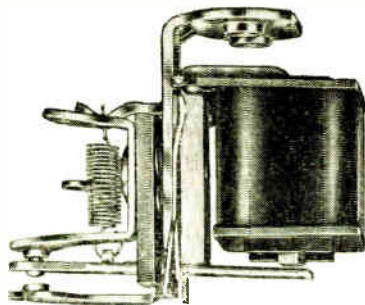
Electrical Computer

A computer for solving linear simultaneous equations up to and including twelve based on the "Gauss-Seidel" method has been developed by Consolidated Engineering Corp., 620 North Lake Ave., Pasadena 4, Cal. Originally designed for mass spectrometer and infra-red data, its application extends to any other field involving simultaneous equations, such as electrical circuits. The instrument is operated from the 115 v., 50-60 cycle ac line and is unaffected by normal voltage fluctuations. It consumes 100 watts.—Electronic Industries



Power Triode

A new air-cooled triode using a heavy graphite anode will handle 400 w of power output at a frequency up to 60 mc. Plate voltage is 2000 v dc with a terminal at the top of the tube. The grid is brought out at the side of the envelope. It was designed by Lewis Electronics, Los Gatos, Cal., primarily as a unmodulated class C rf amplifier.—Electronic Industries

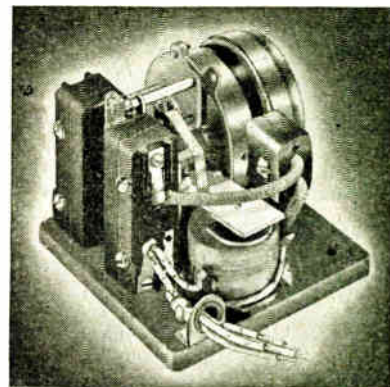


Midget Relay

Series 13, a line of midget relays having a sensitivity of .035 watt for low current operation under limited space and weight conditions has been developed by Kurman Electric Co., 35-18 37th St., Long Island City, N. Y. The relay is housed in a compact 1 oz. unit, has balanced armature construction. The contacts are single pole, double throw and are rated to carry 1/4 amp., 110 v. ac.—Electronic Industries

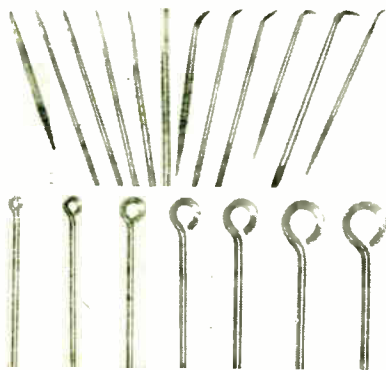
Baking Enamel

Successfully completed tests on the bases of transmitting tubes with a new high-grade baking enamel called "Porcifix," developed by H. V. Walker Co., Elizabeth, N. J., indicate this new paint to be valuable in speeding up production in all industries using organic finishes on metal. "Porcifix," when applied to metal, gives a flexible porcelain-like finish, which has very high resistance to acids, alkalis, oils and greases.—Electronic Industries



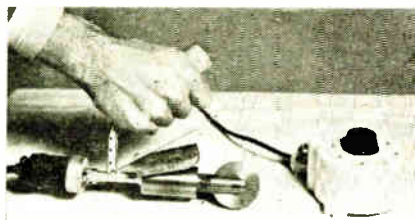
Time Delay Relay

A relay providing from one to ten minutes time delay after actuation of the relay coil has been brought out by Price Electric Corp., Frederick, Md. The standard relay is equipped with two snap action switch units, one for controlling the motor and the other providing a single pole double throw contact combination. The relay contacts are rated up to 10 amps. at 115 v. ac, non-inductive load. It is designed for 115 v. ac, 60 cycles.—Electronic Industries



Deburring Tools

Seven distinct types of hand-forged deburring tools suitable for non-ferrous hard metal work or plastics are being manufactured by Metal Products Co., South Bend, Ind. The tools are hand-propelled and may be had singly, unassembled or in ready-made complete sets with handles.—Electronic Industries



Heat Sealer

Sta-Warm Electric Co., Ravenna, Ohio, has developed a pistol-grip heat sealer considerably changed from the present line of electric heat-sealing equipment. The unit is rated 1.5 amps., and is available for 110 or 220 v. ac or dc as specified. Rheostat control with 150 temperature settings is provided. The bronze alloy sealing roller is self-lubricating.—Electronic Industries

COMPLETE

FIXED-FREQUENCY COMMUNICATIONS SYSTEMS

AM or FM

TRANSMITTERS — RECEIVERS — ANTENNAS

*Custom-built for ANY FREQUENCY
between 100 and 3000 MC's for...*

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- ▷ FORESTRY
- ▷ TELEVISION RELAYS
- ▷ INDUSTRIAL APPLICATIONS

Regardless of the type of communications system you have in mind . . . private, municipal or industrial . . . LAVOIE can supply all necessary equipment to do the job clearly, efficiently and economically. LAVOIE VHF and UHF equipment won widespread acceptance in the U. S. armed

forces during the war, and this same precision manufacture and efficient operation is found in LAVOIE fixed-frequency equipment.

If you will state the general nature of your requirements, we will recommend and quote on a system best suited for your needs.

FREQUENCY METERS
FREQUENCY STANDARDS

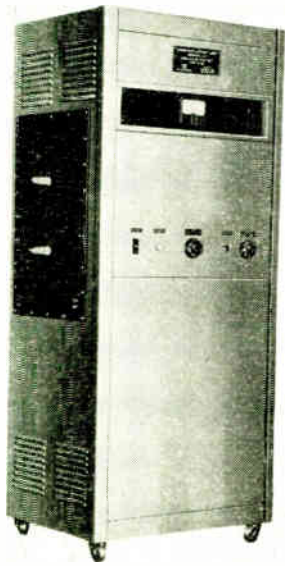


TRANSMITTERS
RECEIVERS, ANTENNAS, ETC.

Lavoie Laboratories

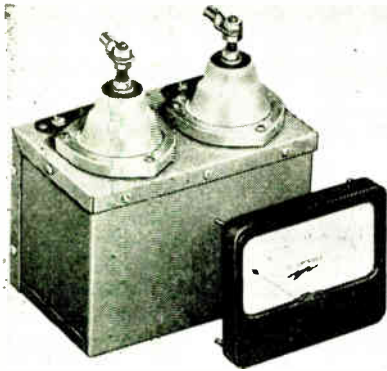
RADIO ENGINEERS AND MANUFACTURERS
MORGANVILLE, N. J.

Specialists in the Development and Manufacture of UHF Equipment



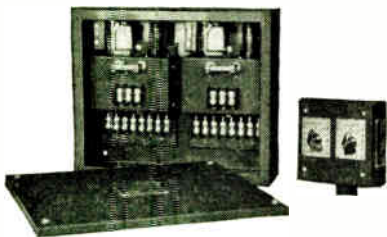
Insulation Tester

A new test cabinet furnishing 50,000 v dc at 10 ma, is designed for insulation testing and determining the breakdown voltage of various materials and components. Output voltages are continuously variable over three ranges. Operation is from 115 v ac with power consumption of about 1 kw. Manufactured by Radio Development Labs., 362 Atlantic Ave., Brooklyn 2, N. Y.—Electronic Industries



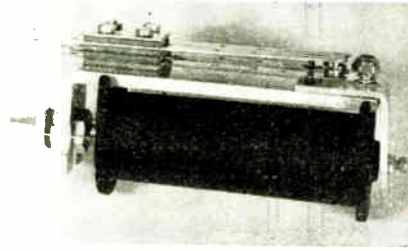
Antenna Ammeter

An electronic remote antenna ammeter has been developed by Andrew Co., 363 E. 75 St., Chicago 19, Ill., using a remotely controlled dc microammeter actuated by a current transformer feeding a diode-rectifier tube located at the antenna.—Electronic Industries



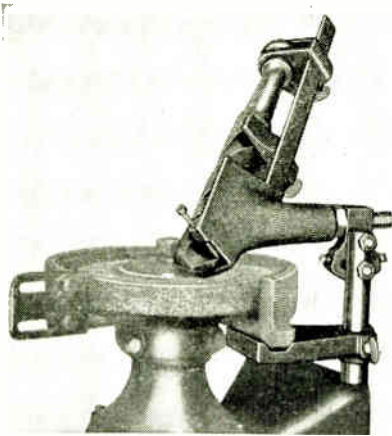
Repeat-cycle Timer

A new unit that will control two adjustable timing periods running in a continuous cycle has been designed by Photoswitch Inc., 77 Broadway, Cambridge 42, Mass. It will time periods between 1/20 of a second to two minutes with an accuracy better than 2%.—Electronic Industries



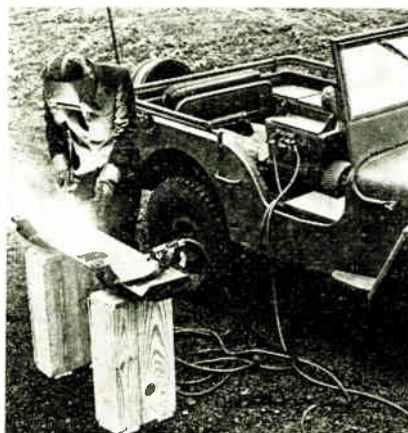
Communication Relay

A new telephone type relay, being made by Standard Electrical Products Co., 400 Linden Ave., Dayton 3, Ohio, has a ball bearing armature pivot. It also features heavy silver contacts operating under high contact pressure. Sensitivity is 1/10w.—Electronic Industries



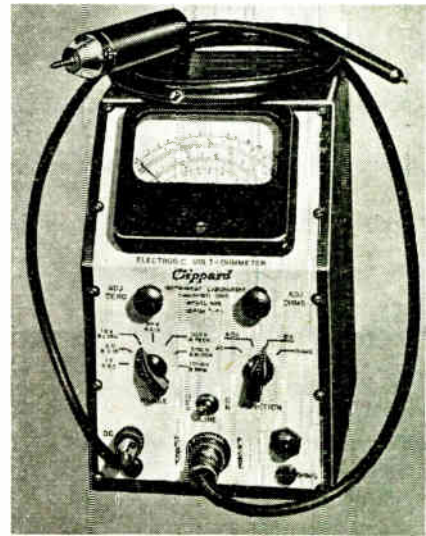
Drill Grinding

Two new drill grinding jigs for precision usage are being made by Industrial Mfg. Co., 1900 Euclid Ave., Cleveland, Ohio. These fixtures will handle all sizes of drills from 1/4 to 2 1/2 in., in diameter and up to 26 in. long. Machine grinding is not only faster than hand grinding; but because of more accurate control of face angles, a precision ground drill will cut quicker and cleaner.—Electronic Industries



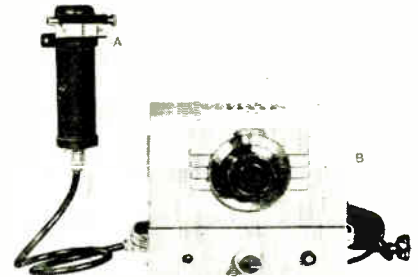
Mobile Welder

For quick and easy arc-welding on jobs which cannot be brought to the welding shop, Willys-Overland Motors, Inc., Toledo, Ohio, is making one model of the civilian jeep with a built-in arc-welding unit. The generator for the welding unit is powered by the regular jeep engine which uses only slightly more than 1 gal. of gasoline per hour of operation. The generator will handle welding rods up to 1/4 in.—Electronic Industries



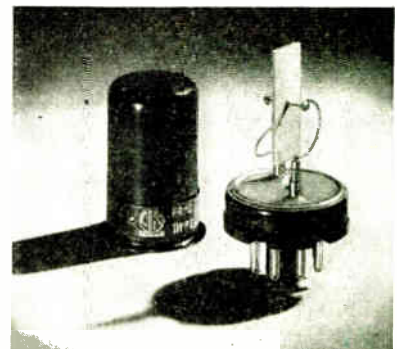
Volt-Ohmmeter

A compact laboratory type electronic volt-ohmmeter model 406 with extreme range using a bridge type circuit is in production at the Clippard Instrument Laboratory, Cincinnati, Ohio. Four tubes are used in the instrument and a large D'Arsenval type meter of 200 microamperes sensitivity is provided. Seven ranges cover 0 to 1000 volts ac or dc, and 0 to 1000 megohms resistance.—Electronic Industries



Exposure Control

A control for automatically measuring accumulated exposure for photographic printing installations is being made by Electric Eye Equipment Co., Danville, Ill. Uneven light intensities are compensated for by varying the length of exposure time.—Electronic Industries



Quartz Crystal

A quartz crystal mounted in a new type of metal tube shell is being produced by the James Knights Co., Sandwich, Ill. The available frequency range for the JK T9AD unit is less than .01% over a temperature range from -50 deg. C to +75 deg. C.—Electronic Industries

There is a

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NICHROME* & NICHROME V for winding large value resistors where space factors call for compactness in design without sacrificing dependability. Available in all shapes and sizes drawn down to the extremely fine gauge of .001" diameter—67 miles to the pound.



MANGANIN for precision bobbins, Wheatstone Bridges, Decade Resistance Boxes, Potentiometers and National Bureau of Standards type resistance standards which require fixed stability and constant resistance under normally variable operating conditions and negligible thermal e.m.f. against copper.



Also the time-tested standard alloys for all vitreous enamel resistor requirements due to the complete absence of occluded gases. **NICHROME V** is particularly recommended when a more constant resistance at variable temperatures is specified.

ADVANCE* for winding precision resistors used in electric meters and laboratory testing devices. In finer sizes its negligible temperature co-efficient of resistance ($\pm .00002$) combined with high resistivity makes it the most desired alloy for this use.



In addition to these we manufacture over 80 different electrical heat and corrosion-resistant alloys. If your resistance requirements are different tell us about them and depend on it... Driver-Harris will develop the alloy best suited to your specifications.



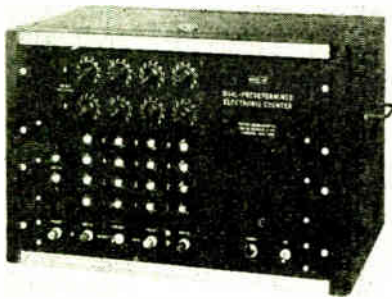
Nichrome is made only by

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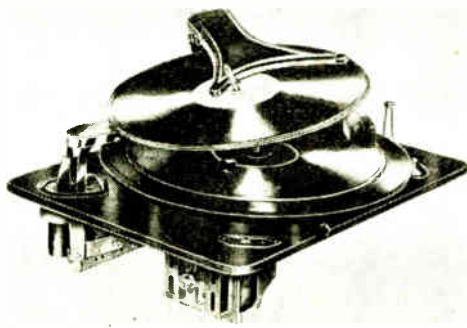
*Trade Mark Reg.
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Electronic Counter

The usual ratio weighing process in the counting and packaging of small items can be eliminated by use of the Dual Predetermined Electronic Counter made by the Potter Instruments Co., 135-56 Roosevelt Ave., Flushing, N. Y. Operating from the 110 volt, 60 cycle power line the counter uses for counter-decade circuits arranged to give independent predetermining channels in which any number from 0 to 10,000 may be set up.—Electronic Industries



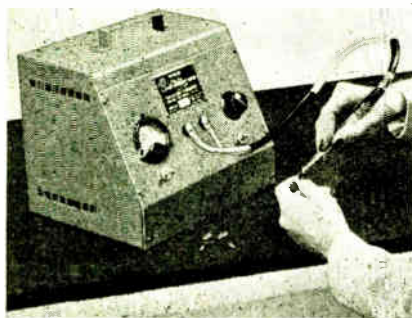
Record Changer

The record changer model RC 60 is available from the Garrard Sales Corp., 401 Broadway, New York. The Garrard changer may be had with a magnetic pickup or with a new one-ounce crystal cartridge. Mixed 10 in. and 12 in. records can be handled and a speed control for the governor-controlled motor is available.—Electronic Industries



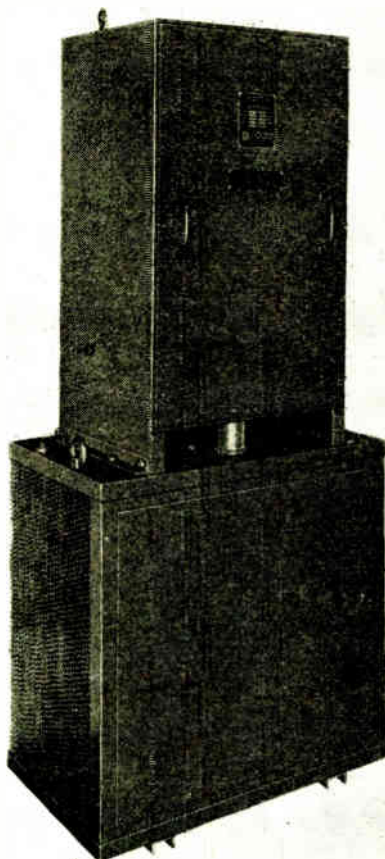
1600w Triode

Designed for use at frequencies up to 20 mc, Taylor Tubes, Inc., 2312 Wabansia Ave., Chicago, Ill., has a transmitting triode with a partially zirconium coated anode. Amplification factor is 10. Plate takes 4,000 v with a current flow of 0.5 a. Thoriated tungsten filament uses 10 v at 10 a.—Electronic Industries



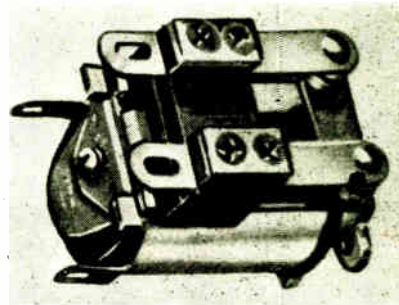
Spot Welding Machine

The Tweezer-Weld Corp., 280 Plane St., Newark 2, N. J., has developed the Besco tweezer spot welding machine, for small parts of .0005 in. to 1/4 in. round. With the forged copper tweezers, the electrodes may be applied directly to the elements to be joined. The device is designed for 115 volts, 60 cycle power supply and is operated by a foot switch.—Electronic Industries



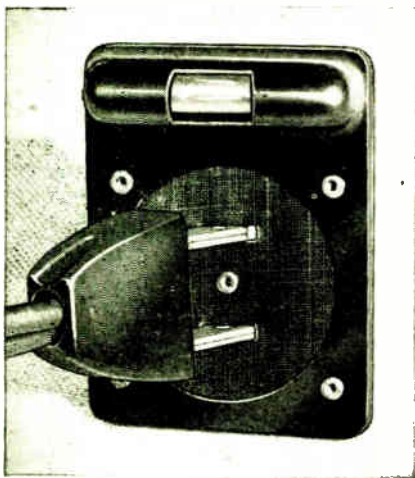
Power Factor Regulator

Modern Control Equipment Co., 176 W. Adams St., Chicago, has brought out the Haug system power factor regulator, which raises the power factor by taking the magnetizing current off the line. The regulator uses reactors and transformers of dry type construction and has no moving parts. It conforms with AIEE specifications and NEMA standards.—Electronic Industries



Control Relay

The "CR" type relay brought out by Allied Control Co., 2 East End Ave., New York 21, combines compactness and light weight and is more efficient on precision applications than larger and heavier power relays. The contact rating with 1/4 in. silver contacts is 15 amperes at 24 volts dc or 110 volts ac. Two, three and four pole combinations are available.—Electronic Industries

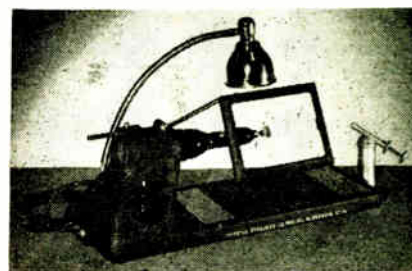


Pilot Light

Industrial Devices Inc., 22 State Road, Edgewater, N. J., has brought out the Handi-Glow plug-in pilot light, which indicates current flow through any electric outlet, socket or power cord.—Electronic Industries

Rhodium Plating

For all white plating applications Technic Inc., 39 Snow St., Providence, R. I., has available rhodium solutions, which are resistant to the corrosive action of all acids or combinations of acids and have 85% reflectivity.—Electronic Industries



Lathe

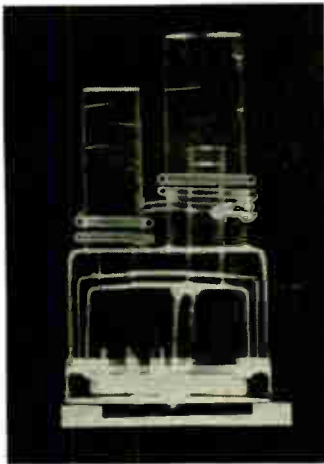
A small high-speed lathe has been developed by Precise Products Co., Racine, Wis., for use in grinding, finishing, and polishing small products made of steel, plastics, glass, wood and other materials. The Precise vari-speed lathe has a range of working speeds to 40,000 rpm. The power unit can be detached and used separately as a hand tool for grinding, milling, deburring and polishing.—Electronic Industries

Space Emptiers...

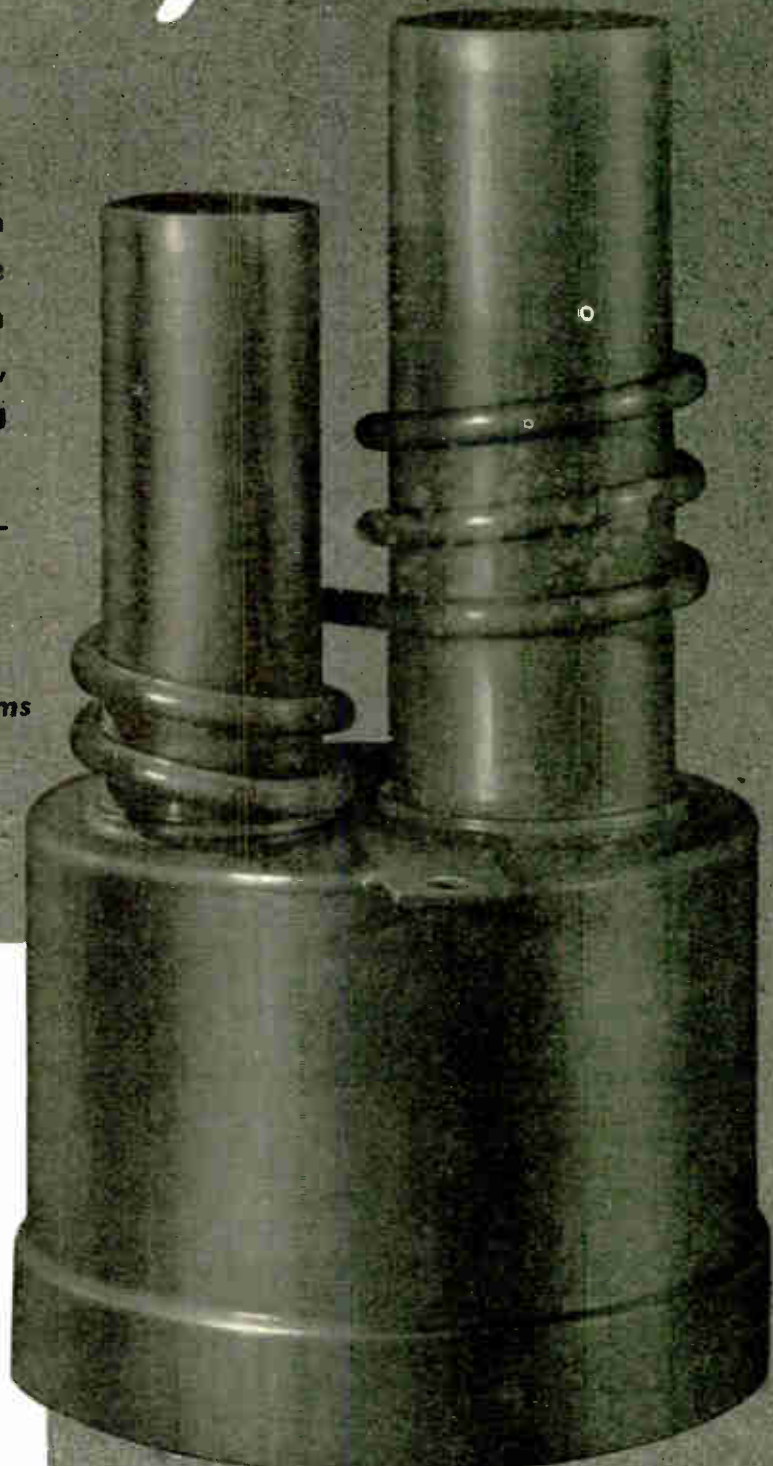
THE VMF SERIES—all-metal, high-vacuum pumps—empty space efficiently for a wide variety of purposes. Designed for use with automatic exhaust machines, these rugged, compact pumps are capable of reaching pressures of 10^{-6} and lower.

These are only a few of the many production jobs they help accomplish—

- ★ Transmitter tubes
- ★ Cathode ray tubes
- ★ Television tubes
- ★ Receiving tubes
- ★ Electron microscopes
- ★ Trolley exhaust systems
- ★ Metal evaporation
- ★ Photospectrography



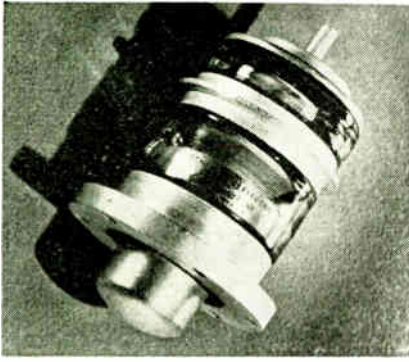
THE sturdy, uncomplicated construction of the VMF Pumps (shown in the X-ray view)...their versatility... the variety of sizes available, air- and water-cooled ...their wide speed range ...all commend pumps of this series for both industrial and laboratory use. Priced from \$45 to \$135. Net f.o.b. Rochester, N. Y.



For complete details on the VMF Series High Vacuum Pumps, write—



Vacuum Equipment Division
DISTILLATION PRODUCTS, INC.
Rochester 13, New York



Transmitting Triode

A triode for use in television and FM transmitters requiring plate dissipation of 5 kw is being manufactured by Electronics Department, General Electric Co., Thompson Rd., Syracuse, N. Y. The tube can be used at frequencies up to 220 mc. The anode is water-cooled.—Electronic Industries



Air Driven Saw

Using standard hack saw blades and files, a new air driven saw is being marketed by Air-Speed Tool Co., 1028 W. Slauson Ave., Los Angeles 44, Cal. Designed for any sawing or filing operation on thin metal, plastics or wood, the unit weighs only 3½ lb. The cutting stroke is adjustable from ¼ to 1¼ in. The tool operates on approximately 85 lb. air pressure.—Electronic Industries

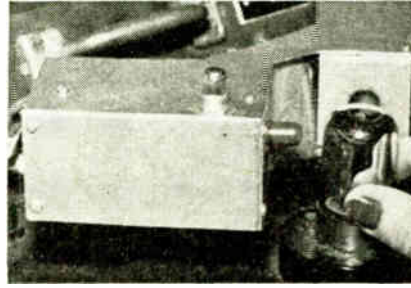


Communications Amplifier

Bendix Radio, a Division of Bendix Aviation Corp., Baltimore 4, Md., has developed the MT-93 expressor amplifier for use in operating communications equipment from a noisy control point. Background noise up to 20 db is blanked out and the output level is maintained constant within 2 db by means of controlled expansion and compression. The overall gain is 80 db and the audio response is constant within 2 db between 300 and 3000 cps.—Electronic Industries

Silver Braze Flux

A new silver braze flux made by Sherman & Co., 197 Canal St., New York City 13, N. Y., forms a protective coating over the metal surfaces at 480 degrees F. At 800 degrees it is still water-thin and will flow in clearances as close as 0.001 in. Being neutral and non-hygroscopic it will not produce corrosion.—Electronic Industries

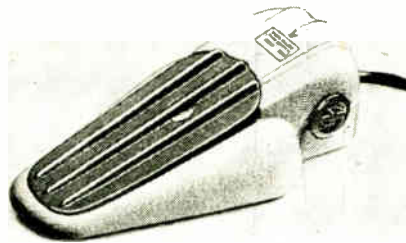


Automatic Tappers for Tube Testing

Solenoid operated tube tappers for the uniform control blows on electron tube envelopes to detect shorts, rf and audio noises have been developed by Sylvania Electric Products, Inc., Emporium, Pa. These automatic tappers provide six timed strokes at two points on the envelope and will eliminate the variation in test procedure resulting from the use of hand mallets by individual operators.—Electronic Industries

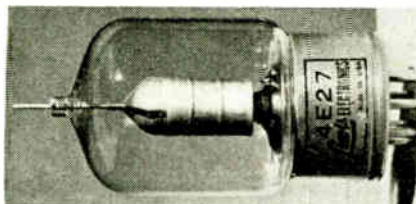
Carbon Brushes

An addition to the line of high speed electrographic brushes is the 8800 series of carbon brushes manufactured by the Morganite Brush Co., Inc., 3302 48th Ave., Long Island City 1, N. Y. Designed to meet the trend toward higher peripheral speeds and higher current densities, their "open" texture permits close contact with the commutator for good riding stability.—Electronic Industries



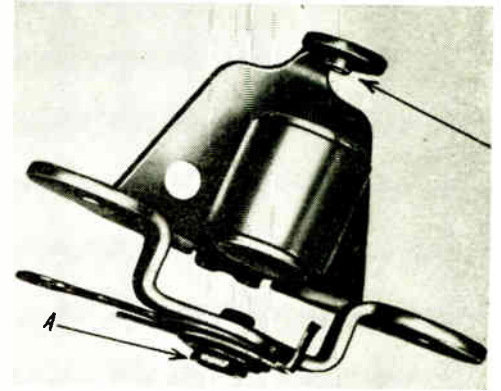
Foot Switch

The Time-O-Lite foot switch being manufactured by the Industrial Timer Corp., 117 Edison Place, Newark 5, N. J., incorporates a heavy duty single pole, double throw switch. Two outlets have each 1500 watts capacity. Another outlet of 1500 watt capacity turns the equipment off, when the switch is depressed. A pilot light is also provided.—Electronic Industries



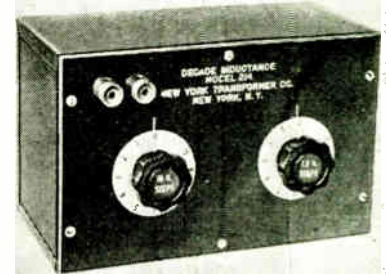
Beam Pentode

Lewis Electronics, Los Gatos, Cal., has developed a beam pentode for use as oscillator, power amplifier, modulator or amplifier-doubler. The manufacturer specifies power handling capacities of 200 watts output up to 75 mc and up to 80% normal input to 150 mc. It is possible to use the 4E27 simultaneously as power amplifier and electron switch by means of suppressor grid control.—Electronic Industries



Jewel Bearing Assembly

Marion Electrical Instrument Co., Manchester, N. H., has developed a jewel bearing assembly for D'Arsonval type instruments. The conventional screw settings and jewels are replaced by a metallized boro-silicate glass V jewel which is induction soldered in place. Through its use the overall size of the bearing assembly is considerably decreased. The hardness and performance of the jewel bearings is not affected by the metallizing.—Electronic Industries



Inductance Decades

For use in bridge and low-level filter circuits New York Transformer Co., 62 William St., New York 5, has developed a series of inductance decades. These units are triple shielded and have inductance ranges from .001 henry to 100 henries. The decades are adjusted to within 2% at 1000 cps, except for the 100 henry decade. The useful frequency range is from 30 to 20,000 cps.—Electronic Industries

Electrical Connector

Expansion or contraction actuated by a special thread is the principle of the Williams Grip electrical connector developed by the AiResearch Mfg. Co., 9851 Sepulveda Blvd., Los Angeles 43, Cal. For emergency service one quarter turn by hand will make or break a connection. At 100 amps, the maximum voltage drop at the contact is 1.9 millivolts.—Electronic Industries

Rust Remover

A rust remover has been perfected by the Nox-Rust Chemical Corp., Chicago 8, Ill. It wets the metal, dissolves the rust scale, removes it and is relatively non-corrosive to steel even under conditions of long exposure.—Electronic Industries

Fluorescent Paints

Switzer Bros., 1220 Huron Rd., Cleveland 15, Ohio, have two fluorescent instrument lacquer colors for use on dial faces, tuning and switch controls and other apparatus which is operated under black light. These items are part of a complete line of fluorescent satins, paints, powders and writing materials and black light equipment for permanent and portable installations.—Electronic Industries



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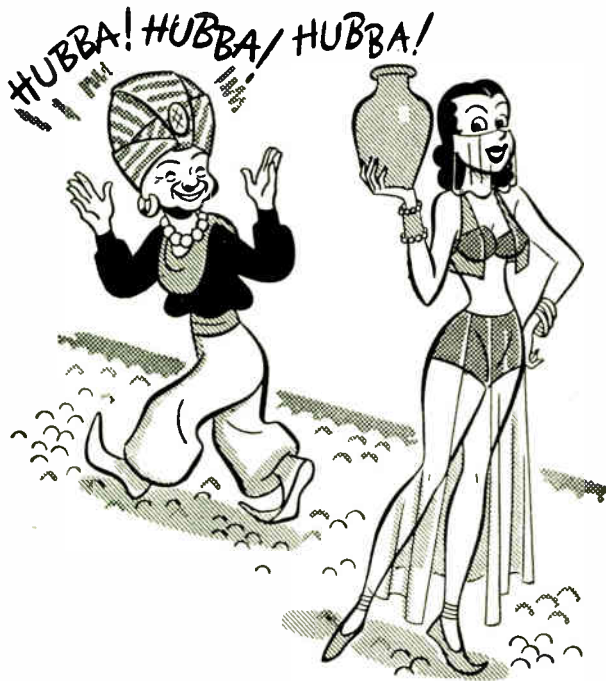
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(East Indian for "there's no substitute"... it's tops)

Of course we've heard the popular expression, "hubba, hubba, hubba!" — and perhaps Micah is only kidding when he tells us it's East Indian for "there's no substitute".

Hubba, hubba, hubba, or not, there is no substitute for mica where mica is needed. Nothing else possesses the high dielectric properties of mica, nothing else lasts so long. And while you're getting mica, there's no reason why you shouldn't get the best — for Macallen Mica costs no more.



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GUIDED MISSILES

(Continued from page 65)

voltage is regulated by means of gas regulator tubes, and the focusing current is held close to the design value of 0.8 amp. by a variable-resistance type current regulator. Still the regulation of current was found not sufficiently good to hold perfect focus under all conditions, and so a special focus-compensation circuit was developed in the conversion unit.

Operation of the circuit is based on the fact that there is a nearly linear relationship, over the range required, between focusing current and anode voltage for optimum focus. If the focusing current decreases, for example, focus can be restored by decreasing the anode voltage in the proper ratio, while an increase in focusing current will require a corresponding increase in anode voltage. Consequently, the focus can be maintained constant by using the change in focusing current to cause a change of the proper magnitude in the anode voltage.

By using a dc amplifier containing a triode controlled by changes in focusing current, the resulting change in voltage drop across the tube's load resistor is used to maintain focus. The elementary circuit is shown in Fig. 7. At normal cur-

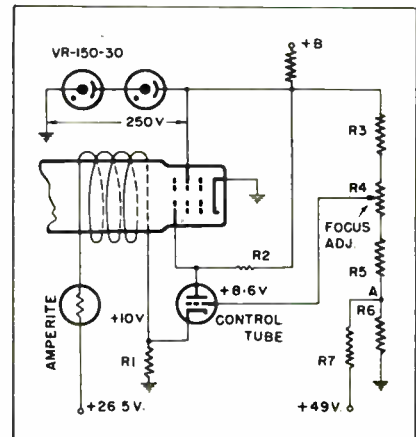


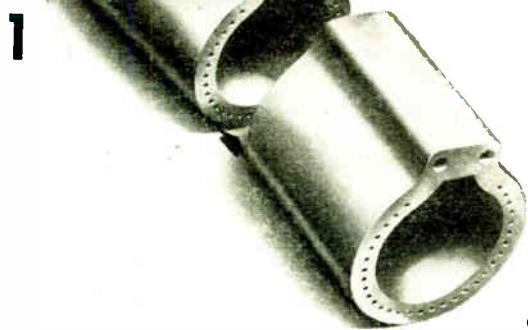
Fig. 7—Detailed circuit for automatic focus compensation

rent the voltage drop across R_1 is 10 volts, and to bring the control tube bias to the proper operating point (-1.4 volts) on its characteristic, the grid is connected to a voltage divider across the anode supply at a point 8.6 volts above ground. Actually the bias voltage is adjustable by means of R_4 so the latter serves as a focusing control. The resistance of R_1 must be constant under all temperature con-

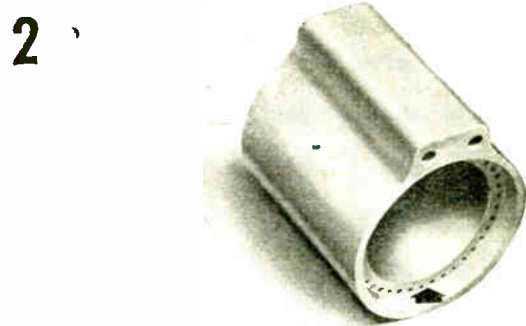
Sometimes they are SIMPLER THAN THEY SEEM



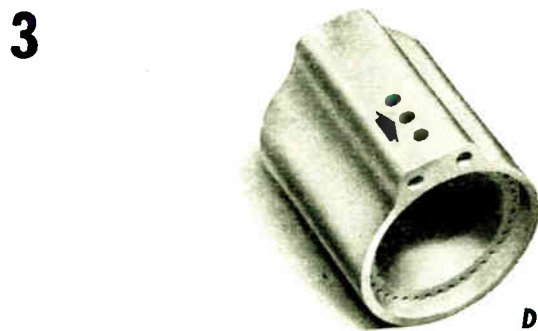
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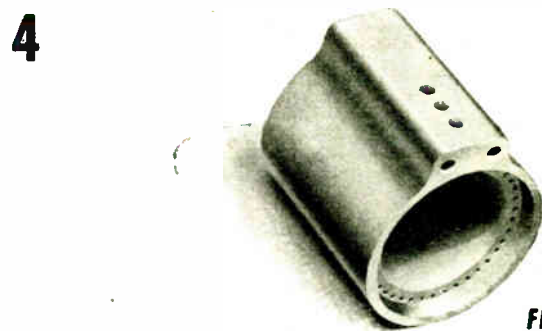
CUT



COUNTER-SUNK



DRILLED



FIRED

SOME intricate ceramic designs machined from steatite seem unbelievably complicated. Actually they are simpler than they seem. By incorporating complex design details in extruded, pressed or cast basic shapes, American Lava Corporation frequently has been able to minimize the relatively slow and costly machining process. Production study may show desirable design alternatives which permit faster deliveries, lower cost.

Here in one organization you will find engineering vision and practical knowledge of AlSiMag technical ceramics, backed by highly versatile equipment of our own design. Send us your unusual, intricate, or complicated designs. Perhaps we can suggest practical design simplifications and streamline manufacture by a combination of production facilities and experience available from no other source. *We like tough jobs.*



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For FM and TV

NEW ANDREW COAXIAL CABLE WITH
51.5 OHMS IMPEDANCE!

Meets Rigid FM-TV Standards

A new coaxial cable, especially designed for FM and TV use, is now a reality at the Andrew Co. Scheduled for mid-June delivery to the first orders received, these new cables, in 4 sizes, introduce the following important engineering features:

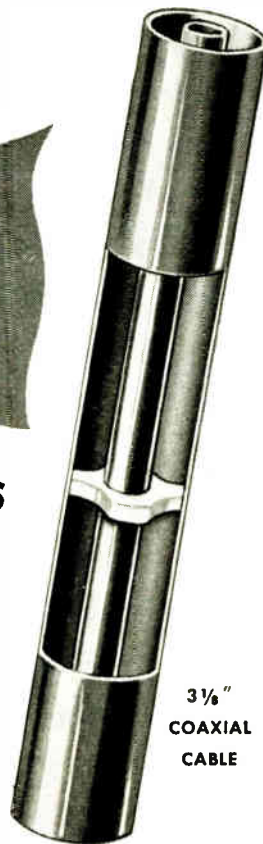
1. Characteristic impedance of 51.5 ohms. (The regular Andrew cables for AM applications have a nominal impedance of 70 ohms.)
2. Connectors and associated fittings have been engineered with special care to avoid reflections and discontinuities. Being completely solderless, these fittings simplify installation and eliminate problems of flux corrosion and pressure leaks.
3. Insulators are spaced 12 inches apart in the 3 large size cables, and 6 inches in the $\frac{7}{8}$ -inch cable.
4. Improved low loss insulation material is used, having a dielectric constant of 6.0 and a maximum loss factor of .004 at 100 mc.
5. Close tolerances have been established on conductor and insulator dimensions, in order to maintain a constant characteristic impedance.
6. Inner and outer conductors are made of copper having a minimum conductivity of 95% IACS at 25° centigrade.

Your order now is the best assurance of early delivery on this new coaxial cable for your FM or TV installation.

Write or wire the Andrew Co., 363 East 75th Street, Chicago 19, Illinois, for complete information or engineering advice on your particular application.

ATTENUATION CURVE
Attenuation is calculated to provide for conductor and insulator loss, including a 10% derating factor to allow for resistance of fittings and for deterioration with time.

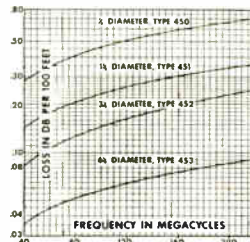
● The new 51.5 ohm air insulated coaxial cable for FM and TV comes in 4 sizes, priced tentatively as follows: $\frac{7}{8}$ " , 42c per ft.; 1 $\frac{1}{8}$ " , 90c per ft.; 3 $\frac{1}{8}$ " , \$2.15 per ft.; 6 $\frac{1}{8}$ " , \$5.20 per ft. Andrew Co. also manufactures a complete line of accessories for coaxial cables.



3 $\frac{1}{8}$ "
COAXIAL
CABLE



6 $\frac{1}{8}$ "
COAXIAL
CABLE



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363 EAST 75th STREET
CHICAGO 19, ILLINOIS

ditions encountered, and so is wire wound and has substantially zero temperature coefficient.

The viewing lens has a focal length 50 millimeters, with a maximum relative aperture of f/1.9. The lens is in a mounting designed especially for this camera unit, and includes a lever-operated focusing adjustment on the front, a means for locking the focusing adjustment, and a pulley-operated adjustable iris that is automatically controlled by a motor to maintain correct light pickup intensity.

The optical path is normally closed by a sun shutter, mounted on the rear face of the lens recess. Two pivoted leaves, approximately semicircular in shape, are normally kept in the closed position by a spring, and are opened when the stand-by switch is thrown by means of a solenoid-operated plunger.

In the stand-by position, with the controlling switch open, this solenoid-operated sun shutter is closed, preventing possible damage to the pickup tube mosaic which might occur should the camera unit inadvertently be pointed to where the direct rays of the sun become focused on the mosaic. The iris control motor also is disconnected so that the iris diaphragm remains at the setting last used, since the control opens the lens iris to the maximum aperture when there is no video signal.

Automatic iris control

The automatic iris control uses a relay-operated reversible motor to operate the lens stop through a continuous flexible cable and pulleys. The motor (permanent-magnet field type) is mounted on a bracket on the rear panel of the unit. The iris control is sufficient to reduce the lens stop down to f/22 from the f/1.9 initial opening. The control operates from the rectified signal obtained from the video amplifier in the auxiliary unit. The mechanism is equipped with limit switches to prevent turning the lens iris beyond its limits of opening and closing. These are lever-operated microswitches operated by cams on the motor shaft.

Electrical heating coils are provided to maintain the temperature of the lens and face of the pick-up tube at a value high enough to prevent condensation of moisture with consequent deterioration or obliteration of the picture.

Setting of the video gain control is in general not critical, since the automatic iris control has much

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**TWO NEW INSTRUMENTS BEARING THE RELIABLE
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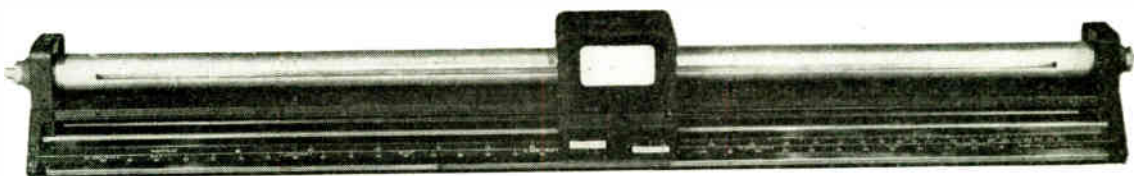


THE MODEL 22-D SIGNAL GENERATOR

**Range 85 Kc to
40 Mc.**

**From a fraction
of a microvolt
to one volt.**

The Model 22-D Signal Generator shown above is one of the new additions to the 22 Series. The wide frequency range covers I.F. and R.F. requirements for American and Foreign A.M. broadcast. Simplified operation, block type attenuator, and low impedance output, including three ohm tap for direct insertion into the loop or tuned circuit, are a few of the features of this new instrument.



The Model 446—A SLOTTED MEASURING LINE

For F.M. and Television work in the range from 50 to 500 Mc., the slotted measuring line is the answer to impedance measuring and matching. Write for details of this instrument and others to the



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the same effect as automatic gain control. The normal setting is between 70% and 100% of maximum gain. With a reflected light intensity of 20 foot candles from a conventional television test pattern of 50% contrast (equal areas of white and black), 85% modulation of the pedestal is secured.

The equipment is designed to modulate a type AXT-6 transmitter which requires a peak-to-peak signal voltage of 0.96 on a 0.6-volt pedestal. A synchronizing signal potential of from 4 to 7 volts (peak-to-peak) is required. Frequencies used in this service were at first 100 mc, later becoming 300 mc and up to 1,000 megacycles. The transmitter shown in Fig. 1 operates between 780 and 900 megacycles.

The primary source of power is a storage battery with a nominal terminal voltage of 26.5. Additional dc voltages required are 405 volts and -53 volts, both obtained from a dynamotor.

The weight of the camera pickup unit is approximately 20 lb. to which must be added the weight of the camera auxiliary unit, 10.25 lb., and that of the mounting bases and cables, the particular transmitter selected and a motor generator.

In mounting the camera pick-up unit care must be taken that there are no obstructions in the field of view of the lens. This requires a clear field (total) of 30° horizontally and 24° vertically.

PRODUCTION BRIDGE

(Continued from page 73)

inductance that can be read with any accuracy is 0.1 millihenry. The variable resistor is provided with a 6 in. dial calibrated directly in henries, subject to the position of the multiplier. The variable resistor is also semi-logarithmic and is directly calibrated in Q at 60 cycles, when the instrument is used as a Hay bridge, or when a transfer switch is thrown to the HI-Q position. When this switch is in the Low-Q position, the resistive balance is obtained by a decade capacitor. In either case the inductance is indicated on the main dial with appropriate multiplication factor.

The bridge arm resistors that have to carry the full dc applied to the inductance are amply rated. To be fully foolproof other resistors, which carry lesser currents, are protected with current-controlled

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4 Out of 10



★ . . . once again in the newest, the largest, the first postwar television installation — Du Mont's John Wanamaker Studios



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★ Station WBKB, Chicago



★ Station W3XWT, Washington, D.C.

When you consider television, you must think of Du Mont . . . for 4 of America's 10 operating television stations were designed and built by Allen B. Du Mont Laboratories, Inc. For no other company has pioneered the whole pattern of commercial station operation for the average station owner to follow. No other company offers the full backlog of its experience to prospective station owners.

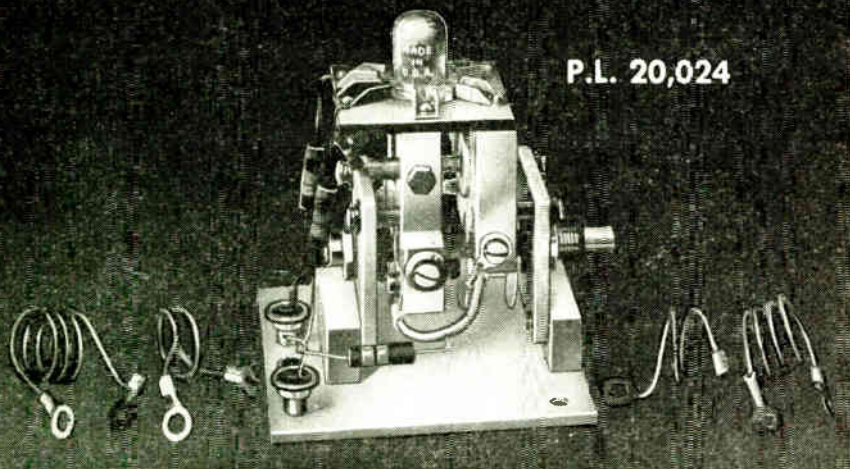
See Du Mont equipment in action in the world's outstanding television installation, Du Mont's John Wanamaker Studios, in New York. Profit by Du Mont's experience in planning your television station. Write for our brass-tack booklet, "The Economics of Du Mont Television." We shall be very happy to mail it to you . . . please write on your firm's letterhead.

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FOR IMPROVED V.H.F. PRACTICE



P.L. 20,024

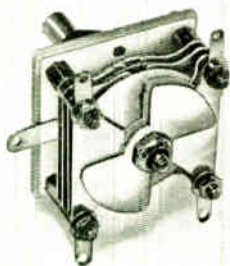
THE CARDWELL V. H. F. OSCILLATOR KIT

This kit includes 3 sets of coils covering 144-148 M.C., 220-225 M.C., 420-450 M.C. bands. (The 6F4 tube is not included.)

Ideally suited for local oscillator,

for super-heterodyne receiver, as plate modulated oscillator for low power transmitter or transceiver, driver unit for amplifier tube in higher powered transmitter, V. H. F. signal generator, etc., etc.

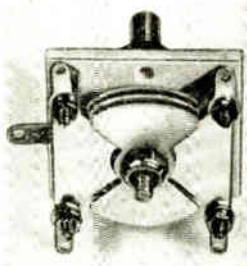
A NEW LINE OF CARDWELL MIDGET CONDENSERS FOR U. H. F.



PL-6113

The "Butterfly" rotor plates with 90 degree stators insure:

**ELECTRICAL SYMMETRY
LOW DISTRIBUTED
INDUCTANCE**



PL-6076

CARDWELL V. H. F. 90 DEGREE TRIM-AIR MIDGETS

Part List No.	Type	Max. Cap.	Airgap	Length Overall	List Price
6075	ER-3-BF/S	3	.030"	2 ¹⁹ / ₃₂ "	\$2.60
6076	ER-6-BF/S	6	.030"	1 ⁵⁷ / ₆₄ "	2.70
6077	ER-8-BF/S	8	.030"	2 ⁵ / ₃₂ "	2.80
6078	ER-15-BF/S	15	.030"	2 ¹⁵ / ₃₂ "	3.40
6079	EU-25-BF/S	25	.020"	2 ¹⁹ / ₃₂ "	3.65
6080	EU-35-BF/S	35	.020"	2 ¹⁹ / ₃₂ "	3.80
** 6081	EU-50-BF/S	50	.020"	2 ³¹ / ₃₂ "	7.65
* 6113	ER-14-BF/SL	14	.030"	2 ³ / ₃₂ "	4.00

* Minimum capacity loaded by circular rotor plates.
** Iso. rear end plate—ball and strap rear bearing.

Unbalance detector

The equipment contains the best unbalance detector indicator found in practice, a cathode ray oscillograph. This gives a direct indication as to whether the balance is being obtained against the fundamental frequency or against some harmonic which may have been introduced by the iron. The oscillograph amplifier has a variable attenuation of 100,000:1 to meet the needs of an indicator sensitive to all conditions from an applied signal of 300 v down to one of 10 millivolts.

A range of sweep frequencies is available to cover the possibility that tests may be needed at frequencies greater than 60 cycles using an externally connected oscillator.

With a judicious selection of the proper ratio arms, an accuracy to better than 1% can be obtained. This is possible by using adequate shielding between various parts of the bridge, and the use of separate power sources for all circuit ele-

relays which disconnect them if excessive current is applied through a wrong selection of the ratio arms. This overload setting is generally established at 40 ma.

Another feature which finds considerable use in the study of transformers is means for applying dc to any other winding on the transformer besides the one being checked for inductance, if desired. Means is afforded for the determination of the true voltage ratio of a transformer since the turns-ratio does not indicate the actual voltage ratio if appreciable leakage reactance is present.

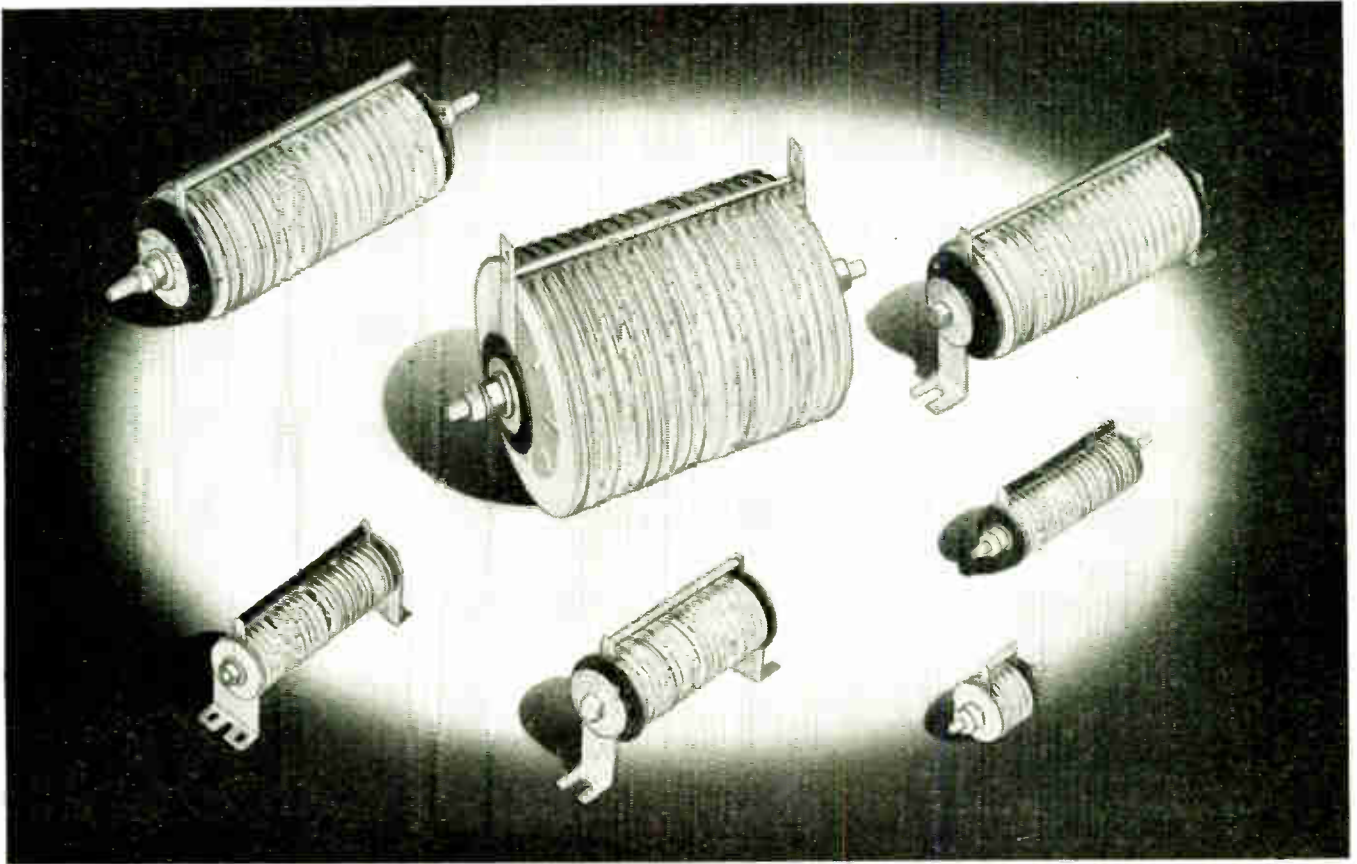
The dc flowing through the inductance under test is indicated by a meter with seven ranges, covering from one milliampere full scale to one ampere full scale, permitting small currents to be as readily observed as large currents. The dc is controlled by a load-current switch and adjusted by the means of a second Variac.

The input transformer to the detector amplifier is electrostatically shielded and in addition contains a stray field balancing arrangement to insure that the only voltage effective in the indicator is that which is due to bridge unbalance. The input to the detector is also provided with a phase-shift (bridged T) network so that a balance can be obtained for the fundamental frequency only.



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For complete details, send for a copy of our catalog entitled, "G-E Selenium Rectifier Stacks." Address your requests to Section A5612-124, Appliance and Merchandise Department, General Electric Company, Bridgeport, Connecticut.



You can count on G-E Selenium Rectifiers to give you long, faithful, economical service wherever d-c power is required from an a-c source.

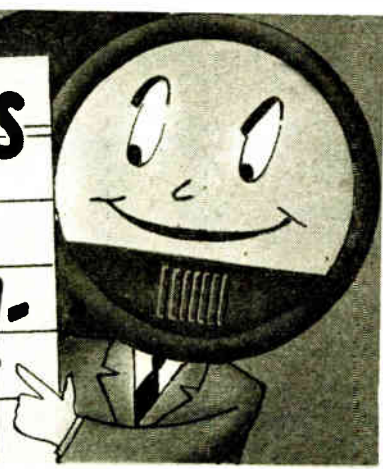
Electrically and mechanically they are built and exclusively processed to give dependable operation in either series, parallel or series-parallel connections. Too, they are constructed to withstand wide variances in ambient temperatures, humidities and atmospheric pressures.

Their small size, light weight and quiet operation plus their ability to resist shock and vibration make them ideal for use in radio and electronic fields, solenoids, relays, motors, instruments and numerous other applications.

GENERAL  **ELECTRIC**

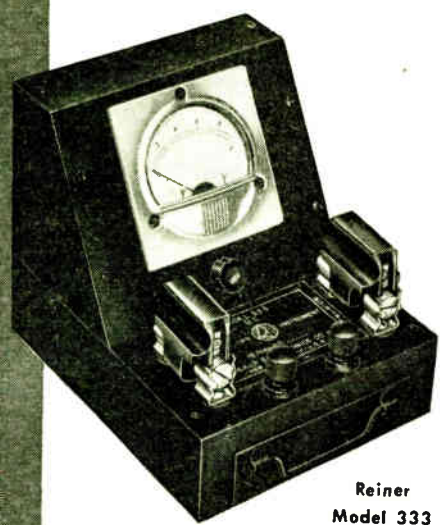
SCORE SHEET

THE SCORES ARE COMING IN-



Thousands of Marion Glass-to-Metal Truly Hermetically Sealed Electrical Indicating Instruments are now out in the field. Where are they going? Who's using them? And for what purposes? The scores are coming in . . . and here's one we thought you might be interested in.

Illustrated is the Reiner Model 333 Volt-Ammeter, developed by the Reiner Electronics Co. of New York. It's a new, versatile piece of equipment for laboratories, schools, repair shops, amateur radio operators, experimenters, etc. One unit can serve 20, or more, different instruments. Used exclusively in the DC Model 333 and the combination AC-DC Model 334 are Marion Glass-to-Metal Hermetically Sealed Instruments.



Reiner Model 333

More and more manufacturers are switching to Marion "hermetics". It makes sense to specify these instruments—whether you're a manufacturer, consumer or dealer. All Marion "hermetics" incorporate the new "Bulldozer" moving system, and are built in conformity with JAN standards . . . they're dust-proof and moisture-proof

. . . they're economical and they last longer . . . they're available with interchangeable round or square colored flanges at no extra cost . . . and they're 100% guaranteed. Write for 12-page booklet.



Marion Glass-to-Metal Truly Hermetically Sealed 2 1/2" and 3 1/2" Electrical Indicating Instruments

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ments. For production testing, after a standard inductor is balanced in, the instrument also can be used as a limit bridge because the dial will then indicate plus or minus deviations from the standard.

The bridge described above represents one commercially available instrument which is arranged to handle any ordinary test problem. Less elaborate instruments are available, such as the inclusion of only the Hay bridge is used and a smaller range of the test voltages, and more elaborate setups with facilities for extending any of the normal ranges which may be needed in unusual tests.

LOOP FM ANTENNAS

(Continued from page 76)

but ion. Loop diameters of several wavelengths are feasible, and for certain applications desirable.

"Electric-magnetic" dipole

This type of antenna may have wide application in the broadcasting field in the near future. With a diversified opinion on the relative merits of vertical versus horizontal polarization it seems feasible that an antenna that is circularly polarized (has both horizontal and vertical components) may prove the most satisfactory type of transmission. It is not difficult to prove experimentally that at any point around such an antenna one can

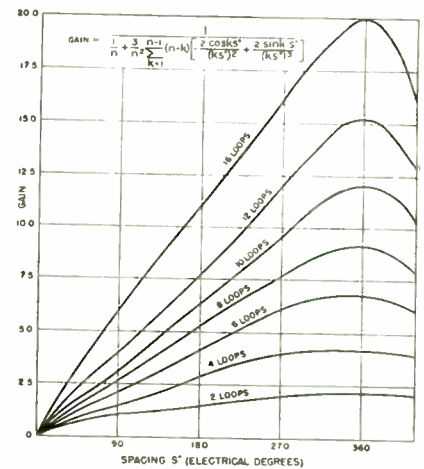


Fig. 9—Gain of linear array of loops when they are vertically stacked

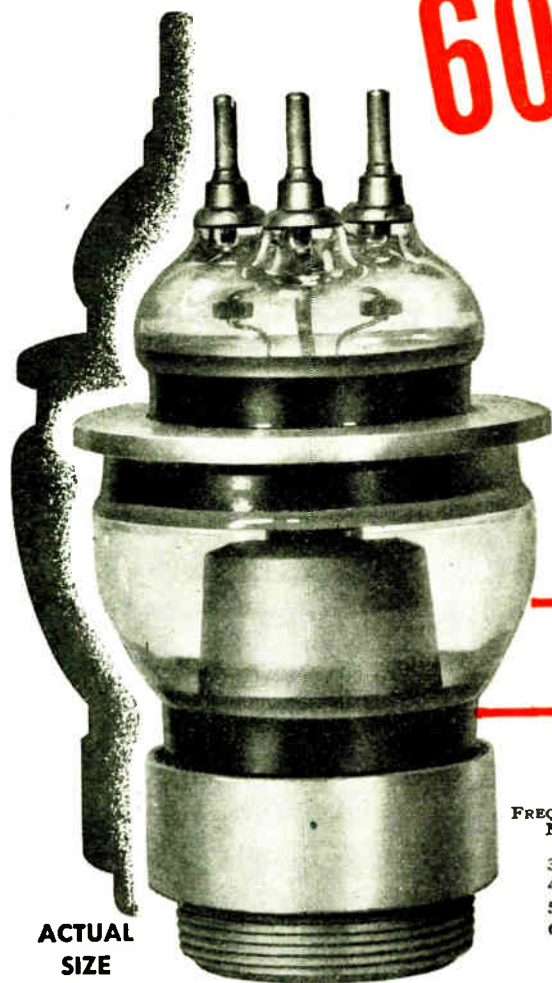
achieve a field strength independent of the orientation of the receiving dipole, providing that the receiving probe dipole is kept perpendicular to the direction of propagation.

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FIRST TRIODE

EVER DEVELOPED THAT GIVES YOU

600 watts at 600 MC!



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Now being used successfully in the powerful CBS color television transmitter operating at 490 MC carrier frequency with 10 MC bandwidth at 1 KW peak power output.

Federal's 6C22 is the *only* tube of this type ever to operate at this power output at such high frequency. It's *the* triode to use...as oscillator, amplifier, or frequency multiplier.

Four years of Federal engineering effort were spent in its development for radar equipment. Now it's ready for commercial broadcast use... with features making it especially suitable in the UHF spectrum.

For example, Federal's 6C22 has ring-seal electrode construction which reduces lead inductance... and extremely close interelectrode spacings to lower transit time losses.

And with 37 years of tube-building experience behind all Federal tubes, you'll find "extras" of rugged mechanical design in the 6C22, in addition to trustworthy electrical performance. It has no internal spacers to break down. Built with solid copper anode block, and water cooled, it works at the high power levels with complete safety. Write for complete information.

TENTATIVE MAXIMUM RATINGS AND TYPICAL OPERATION

Key-down conditions without amplitude modulation. Maximum ratings for frequency of 600 MC.

Typical operation— Self-excited oscillator

FREQUENCY MC	PLATE VOLTAGE VOLTS	PLATE CURRENT AMPERES	POWER OUTPUT WATTS
300	2500	0.70	900
400	2500	0.65	800
500	2200	0.70	680
600	2000	0.65	500

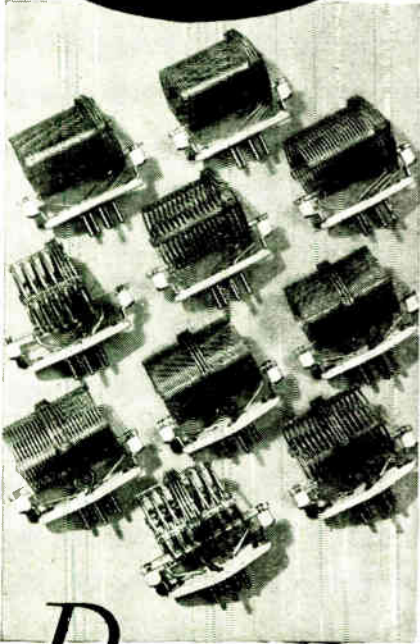
DC Plate Voltage... 2500 Volts
 DC Plate Current... 0.75 Amperes
 DC Grid Current... 0.075 Amperes
 Plate Input... 1875 Watts
 Plate Dissipation... 1000 Watts

Federal Telephone and Radio Corporation

Export Distributor:
International Standard Electric Corporation

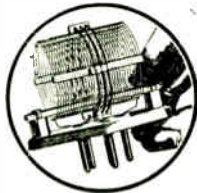
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Plug-in Type AIR-WOUND INDUCTORS

No other type of coil can equal B & W AIR Inductors for all-around efficiency. AIR WOUND Inductors are lighter, easier to tap, wound to uniform pitch, have exceptionally low dielectric loss (no winding form in coil field) and are extremely durable. There is little about them to break if dropped. Even if bent completely out of shape, they can easily be repaired. B & W types include standard, fixed and swinging link assemblies in sizes and ratings for almost any application. Write for catalog.



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In addition this type of antenna probably will prove to be very valuable in ultra-high-frequency communication networks where considerable fading exists due to changes in the medium of propagation. In cases of severe fading the probabilities are that both horizontal and vertical components of the electric field will not vary at the same rate since they are affected differently by the reflecting medium between transmitter and receiver.

In other words a wave with unidirectional polarization where just two vectors (reflected and direct wave) must add up to zero, is much more likely to exhibit fading than a duo-directional polarized wave where four vectors must add up to zero. Considerable improvement, therefore, should be experienced in reducing the overall fading by the use of such a radiator, or a combination of such radiators in an array.

The advantages of this type of transmission were recognized by Dr. Kolster of International Telephone and Telegraph Corporation as far back as 1929. Three systems radiating circularly polarized waves were designed and examined. This present type of "electric-magnetic" dipole (Fig. 10 and 2) consists essentially of the loop radiator previously

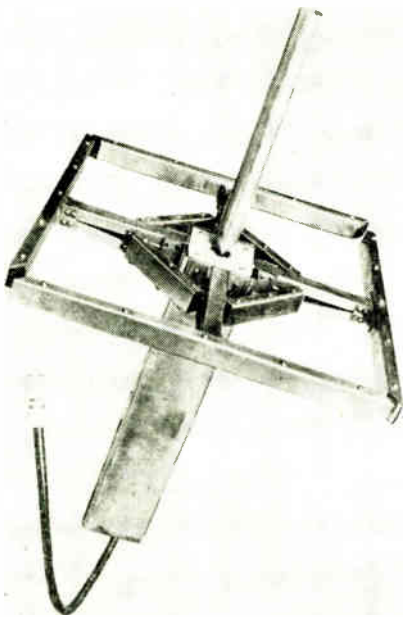
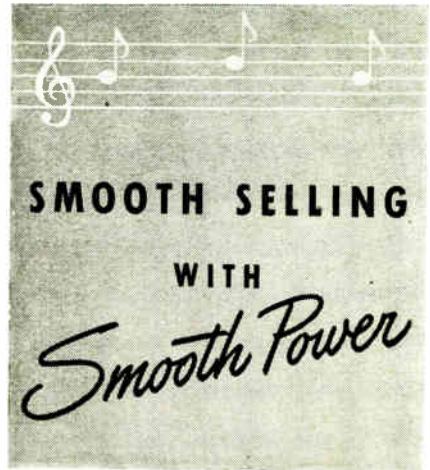


Fig. 10—"Electric-magnetic" type of coaxially fed loop with vertical radiator for 350 mc

described to which a vertical dipole has been added at the junction of the transmission line and the center of the loop. In effect it is a combination of an "electric" and a "magnetic" dipole.

The only difference between a wave radiated from the horizontal

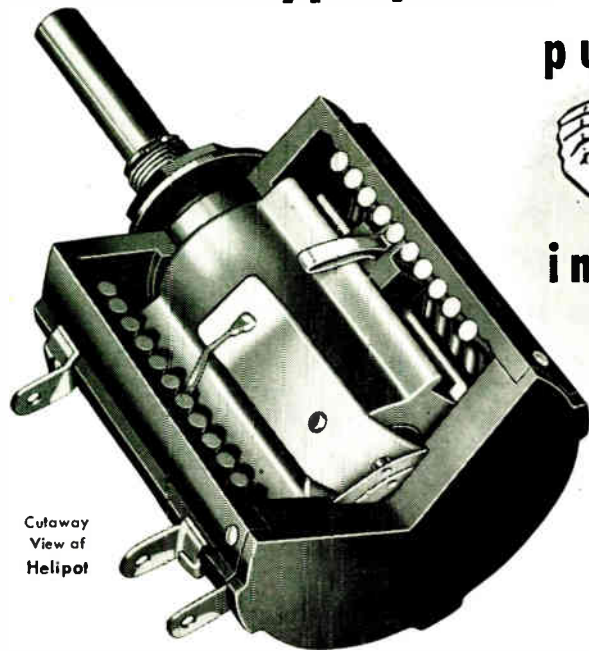


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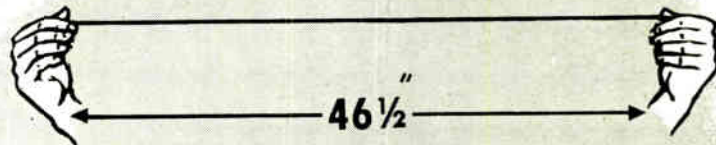
The General Industries Company
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This new type potentiometer-rheostat...

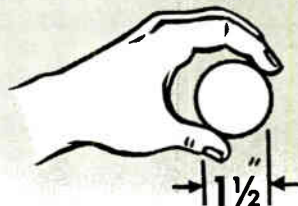


Cutaway
View of
Helipot

puts this much slide wire



into this much panel space



Helipot

(Trade mark for the HELICAL POTENTIOMETER)

It's the BECKMAN

No matter what type quality electronic instrument you may be manufacturing or preparing to manufacture, be sure to investigate the **multiple advantages** you can build into your product by using Beckman Helipots for resistance control. War-perfected on such ultra-precision electronic equipment as radar, flight control instruments, depth sounding devices, etc., the Beckman Helipot makes possible entirely new standards of accuracy, convenience and compactness in resistance controls.

Unlike conventional potentiometers which consist of a single turn of slide wire, the Helipot has many turns of slide wire helically coiled into a compact case that occupies no more panel space than a conventional single-turn potentiometer. The slider contact is rotated by a knob in the usual manner and a simple device guides the slider contact as the knob is rotated so that the entire helical length of resistance winding can be contacted.

Its advantages are many. Heretofore circuits requiring precise control coupled with wide range have generally required at least two potentiometer units—one for coarse adjustment and the other for fine adjustment. This means two knobs to operate... two controls to waste panel space... two units to complicate installation and wiring. In the

Beckman Helipot both wide range and fine adjustment are combined in the one unit. There is only one knob to operate... one unit to take up panel space... one control to install and wire. You not only save

valuable panel space and assembly time, but you greatly increase the convenience, utility, simplicity and operating efficiency of your electronic instruments. Note these outstanding Helipot features...

High Linearity—As a result of fulfilling wartime requirements for ultra-precision circuit controls, Helipots are mass-produced with linearity tolerances of one tenth of one per cent—and even less!

Precise Settings—Because of the many times longer slide wire, settings can be made with an accuracy impossible with single turn units.

Wide Range—By coiling a long potentiometer slide wire into a helix, the Helipot provides many times the range possible with a single turn unit of comparable diameter and panel space.

Low Torque—Of special interest for power-driven applications—the Helipot has unusually low torque characteristics. The 1 1/2" Helipot—for example—has a torque of only one inch/ounce.

Wide Range of Sizes—Current Helipot production is in two basic sizes, each available in a wide range of ratings. The Type A Helipot is 1 1/2" in diameter and is available in ten or fewer turns of slide wire. The ten turns provide a slide wire 46 1/2" long.

The Type B Helipot is 3" in diameter with 15 turns of slide wire as standard, but is available with either fewer or more turns at order. The 15 turns give a slide wire 140 1/2" long.

Resistance windings can be supplied in virtually any commercially available type of resistance wire for both Type A and Type B so that total resistance values for Type A range from 100 to 30,000 ohms... for Type B from 650 to 100,000 ohms.

SEND US YOUR POTENTIOMETER PROBLEM and our engineering staff will be glad to work with you in applying Helipot advantages to increase the efficiency, accuracy and convenience of your quality electronic instruments.

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loop whose diameter is of the order of a half a wavelength or less and that of the vertical dipole is in the polarization. Thus, if the current fed to the antenna is distributed equally to both radiators with a 90° phase difference a circularly polarized wave (one in which both the vertical and horizontal components are of the same magnitude and 90° out of phase) will result. However, it is possible to control both the phase and amplitude of these currents so that any plane polarization that is desired can be produced—i.e. horizontal, vertical, circular, or in the most general case, elliptical.

No extensive field tests have as yet been run to determine all of the electrical characteristics of this antenna. Tests run in 1929 using this type of transmission indicated a definite reduction in fading. On the present type of antenna a mismatch versus frequency measurement was run on an experimental 1200 mc. "electric-magnetic" dipole and indicated that it can be designed to have a comparatively wide bandwidth. (Fig. 11).

A possible application of this type of antenna for home receivers may arise if the broadcasting studios do not agree on the type of polarization to be used. Thus, it is possible that in order for the listener to receive all the stations he would have to use an "electric-magnetic" dipole.

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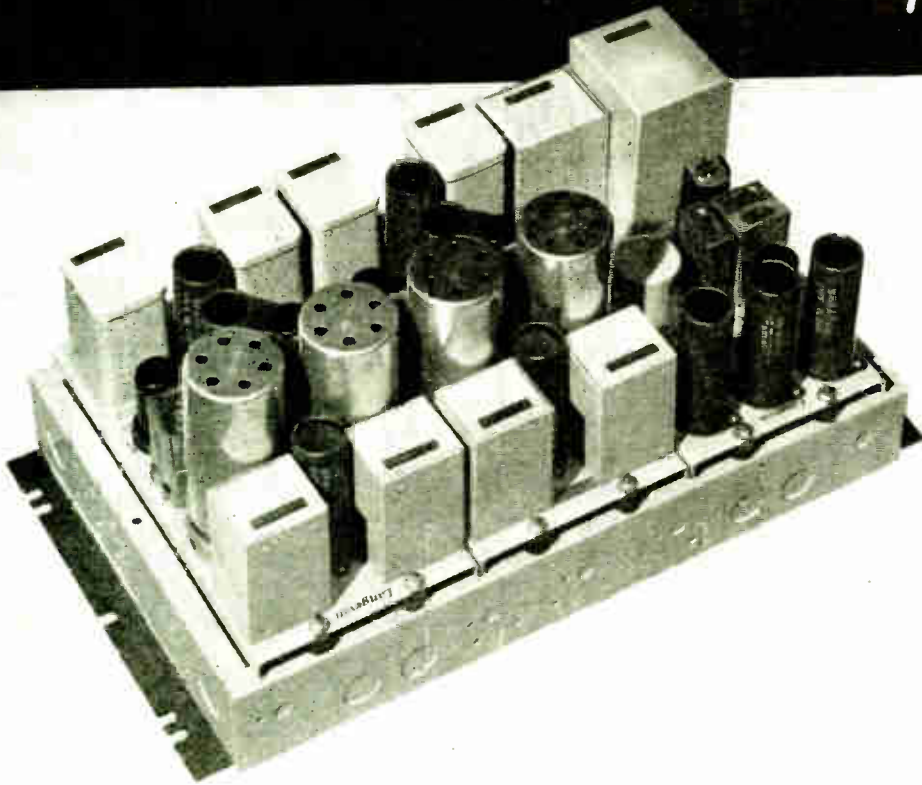
EXPORTS

(Continued from page 81)

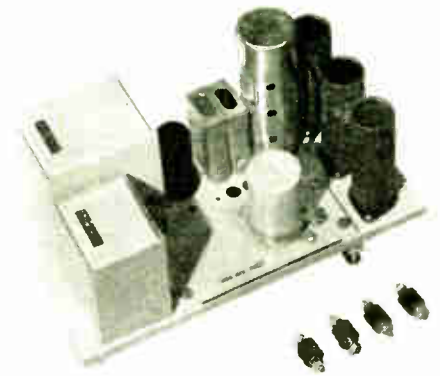
sideration. The current preference here may be for cabinets having no corners and composed entirely of curves of varying radii, but it happens that much of the foreign taste finds this style so ugly as to create real sales resistance, and would far prefer simpler rectangular models. While additional costs

STUDIO AMPLIFIERS

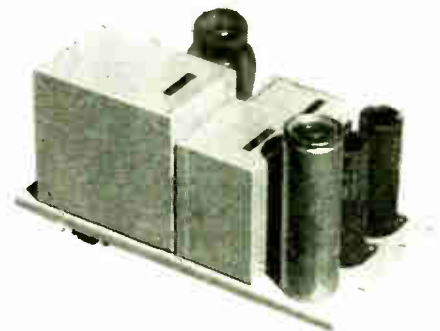
*Engineered for High Quality Performance
and Dependable Service*



AT LEFT: Two Langevin Type 111-A Dual Pre-Amplifiers and one Langevin Type 102-A Amplifier on a Type 3-A Mounting Frame. This unit provides four pre-amplifiers and one line amplifier, or three pre-amplifiers, one booster amplifier and one line amplifier, all occupying 10½ in. of rack mounting space. An external power supply, the Langevin 201-B Rectifier, as shown below, is required. The Type 3-A Mounting Frame can be housed in a Type 201-A Cabinet, for wall mounting, if desired.



The Type 106-A Amplifier is a two-stage, fixed medium gain, low noise pre-amplifier, or booster amplifier, for use in high-quality speech input systems. The Type 106-A can be mounted on one-third of the space available on a Type 3-A Mounting Frame in combination with two Type 111-A Pre-Amplifiers, or in any similar combination.



The Type 201-B Rectifier supplies plate and filament power for the Langevin Types 102, 106, 111 and similar amplifiers from a 105-125 volt, 50-60 cycle AC source. The ripple voltage of the 201-B Rectifier is 0.04% at full power output 75MA and 0.02% at a drain of 30 milliamperes.

Langevin Audio Transmission Facilities are designed and built to have the extended frequency response, noise and distortion levels required in the F.C.C. Regulations for FM transmission.

In complying with these regulations too much emphasis cannot be placed on the quality of the transformers that are a part of the audio system. Noise, for instance, is largely associated with the input transformers—distortion, with the output transformers—and frequency response with both. Therefore, the transformers in Langevin equipment are manufactured by us—and are held to a specified tolerance—so that frequency response, noise and distortion levels of the entire system are well within requirements.

"Worthy of an Engineer's Careful Consideration"

The Langevin Company

INCORPORATED

SOUND REINFORCEMENT AND REPRODUCTION ENGINEERING

NEW YORK
37 W. 65 St., 23

SAN FRANCISCO
1050 Howard St., 3
World Radio History

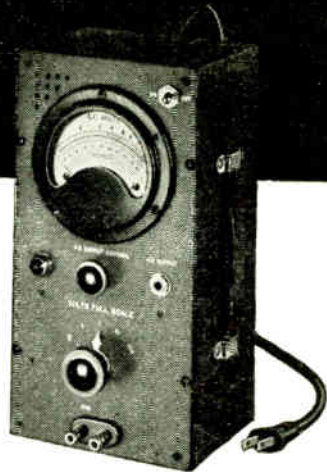
LOS ANGELES
1000 N. Seward St., 38

A Ballantine ELECTRONIC VOLTMETER

For every requirement

ALL MODELS HAVE THE
SIMPLIFIED
LOGARITHMIC
SCALE

STANDARD
Model 300



Ideal for the *Accurate* measurement of AC voltages in the Audio, Supersonic, Carrier Current and Television ranges.

Use of Logarithmic voltage scale assures uniform accuracy of reading over whole scale while permitting range switching in decade steps.

Each Voltmeter equipped with an output jack so that the instruments can be used as a high-gain stable amplifier.

SPECIFICATIONS

MODEL 300

RANGE—.001 to 100 volts.
FREQUENCY—10 to 150,000 cycles.
ACCURACY—2% at any point on scale.
AC OPERATION—110-120 volts.

MODEL 304

RANGE—.001 to 100 volts.
FREQUENCY—30 c.p.s. to 5.5 megacycles.
ACCURACY—0.5 DB.
AC OPERATION—110-120 volts.

MODEL 302

RANGE—.001 to 100 volts
FREQUENCY—5 to 150,000 cycles.
ACCURACY—2% at any point on scale.
DC OPERATION—self-contained batteries.

Send for Bulletin for further description



Model 304
R-F
VOLTMETER



Model 302
BATTERY
OPERATED



BALLANTINE LABORATORIES, INC.

BOONTON, NEW JERSEY, U. S. A.

may be incurred by such box changes due to lower volume, no insuperable difficulty is presented.

As stated before, many manufacturers are apt to look with jaundiced eyes at these export problems as being in the nature of additional headaches when their time is already fully occupied by the headaches of the domestic market and the OPA. If for no other reason however, the export market should be cultivated as a matter of insurance. In the debates on the 3.75 billion dollar loan to Great Britain, some of the British commentators objected on the grounds that the promises given would tend to tie their more stable manufacturing and distribution system to the "oscillating economy" of the United States.

That our economy has this characteristic is certainly not to be gainsaid, and most American manufacturers recognize it and want to guard against it. What better insurance can there be than to widen one's market by foreign distribution—particularly when the distribution is likely to be quite profitable. Why not surrender a portion—say 10% of production—of the otherwise attainable share in the highly competitive U. S. market for this excellent anchor to windward.

Credit problems

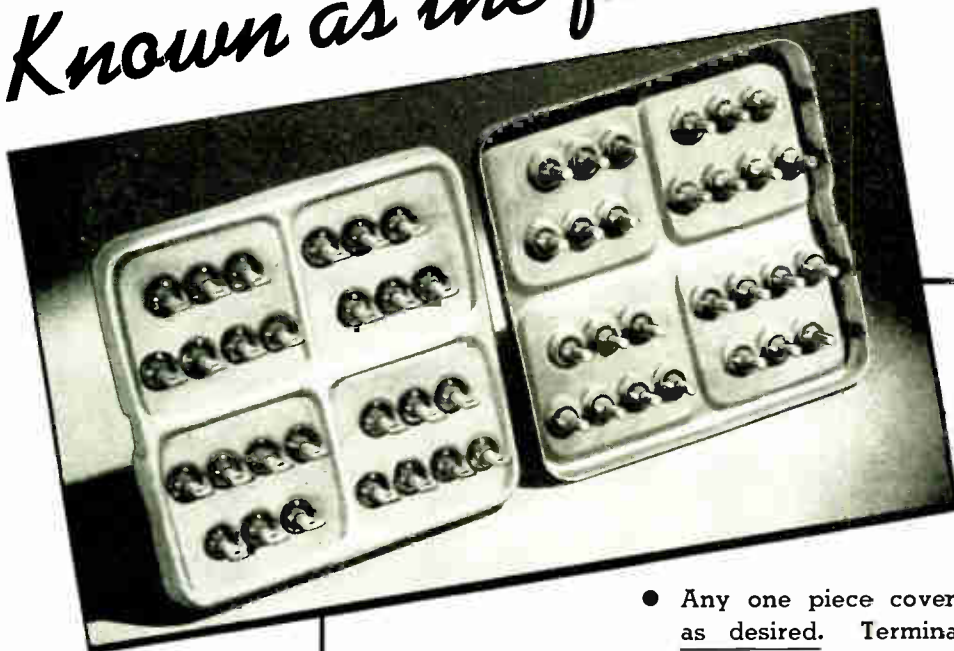
The distribution which is obtained in foreign countries should be picked with great care—possibly more carefully than that in the United States in view of the distance involved. All selling should be done to certain definite representatives in the countries involved, and requests from others in the same territory should be referred to the chosen representatives. A hit or miss policy of dealing with anyone who writes an inquiry provided they establish proper credit in the U. S. is undesirable and may result in the loss of good solid outlets.

In this connection, the matter of credit should be investigated carefully. There are plenty of high class reputable firms operating in the distribution field in the various countries with which we may wish to do business, and to ask some of them to set up New York funds before shipment may be as distasteful and ridiculous to them as it would be to some of our large distributors.

Most of the distributors are apt to handle a number of lines which

Known as the finest . . .

HERMETIC SEALING



ELIMINATES TERMINAL SOLDERING

- Any one piece cover with as many terminals as desired. Terminals are supplied already molded into cover unit!
 - Permanent chemical bond between the metal and glass.
 - Capable of withstanding . . .
 - .. Wide temperature range and extremes of atmospheric conditions.
 - .. Chemicals—oils—greases.
 - .. Terminal pull test.
 - .. Hot tin dip.
 - Glass of terminals completely free of surface carbonization; high surface resistance.
 - **TERMINALS MAY BE ARRANGED WITH A MINIMUM SPACING IN ANY PATTERN OR COMBINATION OF VOLTAGE RATINGS!**
 - **PRE-TESTED** for . . .
 - .. 5 cycles, saturated salt water
 - .. Salt spray corrosion
 - .. Hydrogen pressure tested for leaks
 - .. Polariscope inspected for glass strains
 - .. Hi-potential tested for voltage breakdown
- Modern equipment and improved manufacturing facilities permit production of large or small quantities quickly and economically.

WE INVITE YOUR INQUIRIES



HERMETIC SEAL PRODUCTS CO.

414-418 MORRIS AVE.

NEWARK 3, N. J.

GUTHMAN precision COILS

Precision, a word basic to radio and electronics, has been made commonplace by over-use and often false by misuse . . . where it guides the purchase and production of materials, and sets the standards for engineering research as well as for the manufacture of the finished and inspected product, PRECISION becomes again a word of importance. It is so conceived and used by Guthman.

EDWIN I. GUTHMAN & CO., INC., 15 S. THROOP, CHICAGO 7, ILL.

- ★ I. F. Transformers
- ★ R. F. Coils & Chokes
- ★ Trimmer Condensers
- ★ Zinc Shield Cans
- ★ R. F. Assemblies
- ★ Textile Insulated
Litz & Magnet Wire

Visit Our Booth
No. 115
1946 Radio and Electronic Parts Show

Guthman

C H I C A G O

might be considered separate in the United States, as for instance, automobiles, automobile parts, radios, home appliances, etc. They may also operate one or more retail stores. Jobbers as they are known here are not frequently met with.

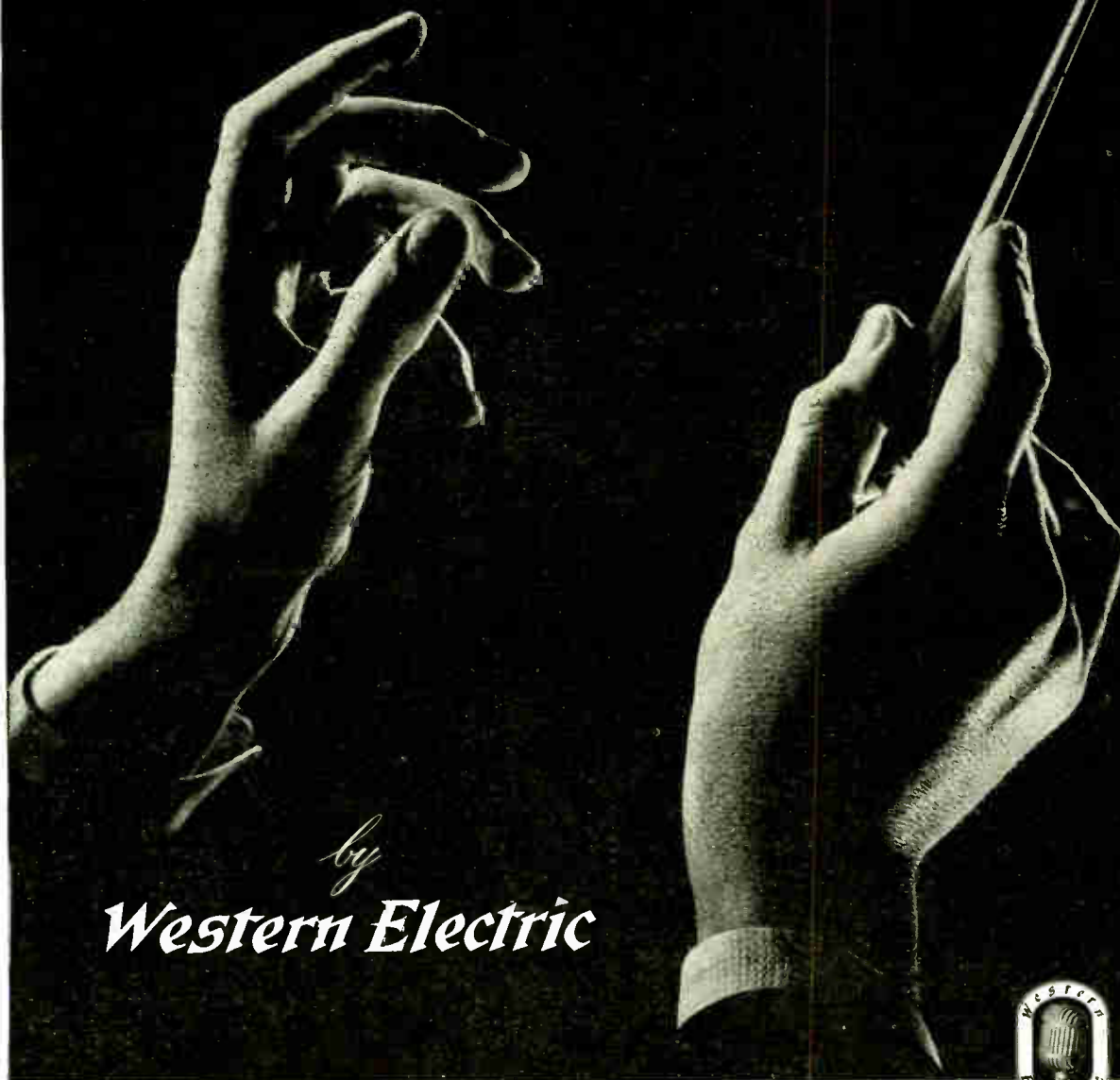
If the statements made here and the program laid out seem to require an undue concentration of effort for the small manufacturer it should be remembered that there are several excellent export firms well acquainted with the foreign market who can take over the entire load of knowing the market and its requirements and who will buy the manufacturers' products for cash, taking even the financial exporting risk off his shoulders. These concerns which have been in the business and have established a reputation generally operate on a definite percentage basis.

In the present unsettled state of the world one of the difficulties with exporting is the matter of obtaining import licenses for the countries of destination. Some of them such as South Africa, a large gold producer, and some colonies which have enjoyed an excellent trade in the export of basic raw materials during the war and hence are loaded with cash interpose no difficulties for the American exporter. Others, particularly in the Sterling bloc have highly restricted import licensing systems, even going so far occasionally as to "neglect" to act upon applications for licenses even where they are officially supposed to be on a fairly free basis. This is done with the idea of preventing Americans who have the only exportable goods at the present time from gaining a foothold in markets heretofore pretty much monopolized by other exporting countries.

Such practices may make the American exporter very unhappy but since there is nothing to do about it he must live with them. The fact of the matter is that the Sterling area is so very short of foreign exchange that there is not much else that the countries involved can do but restrict imports by every possible means. And certainly no one should be lulled to the belief that passage of the British loan by Congress will result in a removal of such trade restrictions. That certainly can not happen except over an extended period of time during which England will attempt to rebuild its exchange position. The amount of the loan is far too small to permit unrestricted importing.

Overture

TO A NEW ERA IN SOUND



by
Western Electric



HAVE you ever heard a sound system with such natural tone, such emotional quality, such "presence" that you didn't know instantly that a sound system was in action? It's pretty safe to say you never have. But now you can!

Revolutionary advances born of wartime research have resulted in a new Western Electric

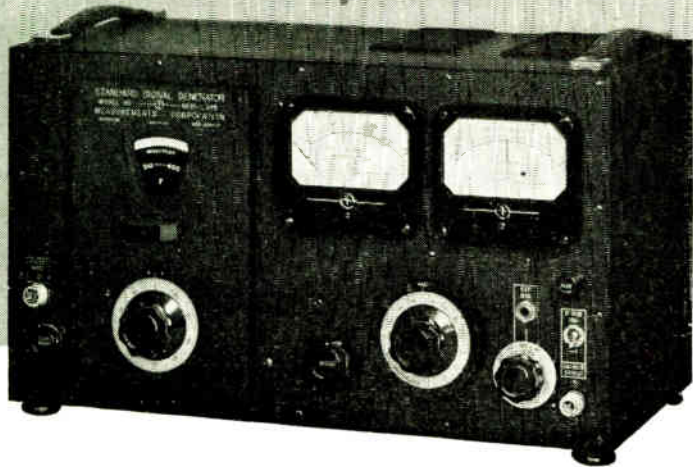
loudspeaker that reproduces speech and music with unsurpassed fidelity.

You'll find it hard to believe you are listening to *reproduced* sound rather than the original. That is why this new Western Electric loudspeaker is destined to open a new era in all fields of sound reproduction.

Laboratory Standard

INSTRUMENTS

built for Accuracy and Endurance



STANDARD SIGNAL GENERATOR Model 80

This instrument is well suited for development and production testing in the recently allocated FM and Television bands. The absence of stray fields or leakage permits accurate measurement of the most sensitive receivers.

SPECIFICATIONS:

CARRIER FREQUENCY RANGE: 2 to 400 megacycles.

OUTPUT: 0.1 to 100,000 microvolts. 50 ohms output impedance

MODULATION: AM 0 to 30% at 400 or 1000 cycles internal. Jack for external audio modulation.

Video modulation jack for connection of external pulse generator.

POWER SUPPLY: 117 volts, 50-60 cycles.

DIMENSIONS: Width 19", Height 10½", Depth 9½".

WEIGHT: Approximately 35 lbs.

PRICE: \$465.00 f.o.b. Boonton

Suitable connection cables and matching pads can be supplied on order.



Model 62 VACUUM TUBE VOLTMETER

SPECIFICATIONS:

RANGE: Push button selection of five ranges—1, 3, 10, 30 and 100 volts a.c. or d.c.

ACCURACY: 2% of full scale. Usable from 50 cycles to 150 megacycles.

INDICATION: Linear for d.c. and calibrated to indicate r.m.s. values of a sine-wave or 71% of the peak value of a complex wave on a.c.

POWER SUPPLY: 115 volts, 40-60 cycles—no batteries.

DIMENSIONS: 4½" wide, 6" high, and 8½" deep.

WEIGHT: Approximately six pounds.

PRICE: \$135.00 f.o.b. Boonton, N. J. Immediate Delivery

MANUFACTURERS OF
Standard Signal Generators
Pulse Generators
FM Signal Generators
Square Wave Generators
Vacuum Tube Voltmeters
UHF Radio Noise & Field
Strength Meters
Capacity Bridges
Megohm Meters
Phase Sequence Indicators
Television and FM Test
Equipment

MEASUREMENTS CORPORATION
BOONTON NEW JERSEY

MARKETING, Twin Problem with PRODUCTION

(Continued from page 83)

company demonstrated and explained new things to engineers of other companies.

Simple as it is to set down general principles that may be desirable for all, there is no denying the difficulty of applying them to the varied conditions confronting individual companies. There is no ready-made plan; no over-all method. It may be helpful, therefore, to set forth a few of the critical differences.

Take the case of a manufacturer who begins to plan the marketing of a product that he has never sold before. He sets out on an uncharted course when he starts to visualize his needs. First, he will do well to make certain that he has the right perspective on the problems he is certain to encounter. He can begin to get his bearings as soon as he can answer some pertinent marketing questions. He will see the critical differences between which he must make a choice.

These accompanying questions merely highspot the job. At every step in building a plan, there are many other options; good, bad and indifferent. The manufacturer must determine for himself how they differ, how they fit his aims, how they will probably work out in the beginning and, more important, how they will work out in the end.

COMMERCIAL LORAN



Preston R. Bassett, president of the Sperry Gyroscope Co. which built the equipment and made the installation, at demonstration of Loran receiver that helped Captain Harry G. Nordenson (left), skipper of the ship, navigate the M/S Gripsholm between the Mediterranean and New York

DUMONT PAPER CAPACITORS

HEATPROOF

Dumont condenser ends are sealed with bakelite resinoid to withstand 350° F. continuous operation.

SMALL SPACE

1/4" OD x 3/4" LONG
AT 600 VOLTS

Compact . . . solves space problems

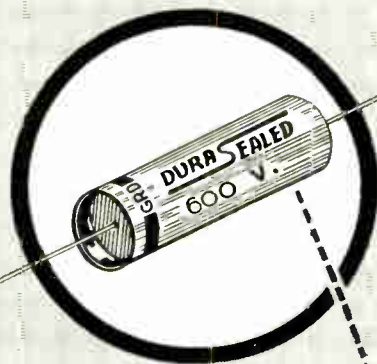
MOISTUREPROOF

UP TO 100% HUMIDITY
Sealed under vacuum. No air voids to cause entry of moisture

LONG LIFE

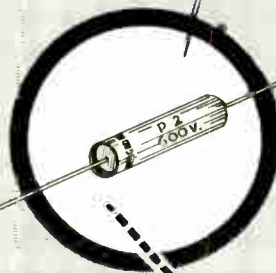
NO HIGH TEMPERATURE
OR HIGH PRESSURE

Used in the manufacture of these condensers . . . thus assuring long life and High Surge Rating to these units.



DUMONT
TYPE P6

DUMONT
TYPE P2

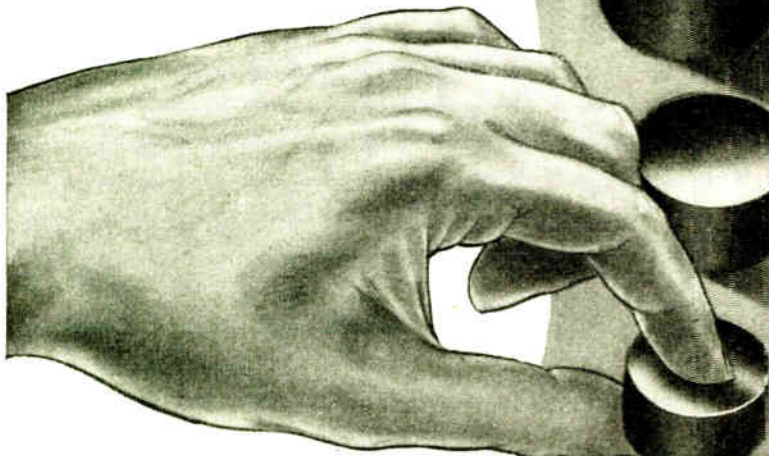


Sealed with DUMONT
BAKELITE RESINOID

DUMONT
ELECTRIC CORP.
MFR'S OF
CAPACITORS FOR EVERY REQUIREMENT
34 HUBERT STREET NEW YORK, N. Y.

THE

Individual TOUCH



- Every magnet individually tested in loud speaker structure before shipping . . .

- Every magnet meets R. M. A. proposed standards . . .

- Every magnet meets Arnold's minimum passing standards of 4,500,000 BHmax.

Here's what the individual touch means. Thousands of the nine different sizes of speaker magnets shown at right are now being turned out daily. Each one is individually tested in a loud speaker structure before shipping. Each magnet is made to meet R. M. A. proposed standard for the industry. Each magnet must meet Arnold's own minimum passing standard of 4,500,000 BHmax for Alnico V material. Thus by careful attention to the important "individual touch" in volume production can Arnold promise you top quality in each individual magnet you select.

THE ARNOLD ENGINEERING COMPANY

147 EAST ONTARIO STREET, CHICAGO 11, ILLINOIS

Specialists in the Manufacture of ALNICO PERMANENT MAGNETS

NEWS OF INDUSTRY

(Continued from page 98)

886 different brands of radios on the market.

In 1930 the radio industry produced 3,628,691 units at an average price of \$42.11. In 1939, the industry manufactured 10,762,638 units at an average price of \$13.69.

Between 1932 and 1940 the price of a typical table model radio dropped from \$25 to \$9.95.

Indicative of the chaotic conditions existing in the radio industry are the following comments from the committee report:

As of January 27, 1946, only 38 of 141 licensed manufacturers had reported any production, shipping or billing of home radio receivers since VJ Day.

In the week ended January 11, 1946, only two console radio-phonograph sets were shipped and billed by the entire radio industry.

John Ashton, Consultant

John Ashton, pioneer radio research engineer, formerly associated with many well-known radio developments, has opened a radio laboratory on Riversville Road, RFD No. 4, Greenwich, Conn., and is entering general radio engineering practice. He was an early associate of DeForest and Armstrong, and has served with Telefunken, Radiomarine Corp., NBC, United Broadcasting, U. S. Steel, U. S. Cartridge, MIT Radiation Labs., Fairchild Camera, Majestic, Stewart-Warner, Scott, and Belmont Radio organizations.

Block-Wormser Moves

Block-Wormser Co. factory representative, has occupied new headquarters at 60 East 42nd Street, New York. The company specializes in electronic and mechanical assemblies, designs and engineers' wood, metal and plastic products.

Killian and Tourney Were Raytheon Authors

Through an inadvertant oversight the Editors of Electronic Industries neglected properly to credit the authors of the article appearing in the April FM issue of the publication under the heading: "Two-Studio Console". The equipment is manufactured by Raytheon Mfg. Co., Chicago and the description was written by Leo G. Killian and Paul Tourney.

● "Impossible" is a word that is not recognized by engineers. To dam a mighty river, tunnel under it or suspend a bridge across it—things such as these that once seemed pure imagination were made possible by instruments devised to refine and extend human faculties, to translate the precision of engineering thought into action.

Keuffel & Esser Co. is proud to have played so large a part in making such instruments widely available. In this way K & E equipment and materials have been partners of the engineer and draftsman for 78 years in shaping the modern world. So universally is this equipment used, it is self-evident that K & E have played a part in the completion of nearly every engineering project of any magnitude. Could you wish any surer guidance than this in the selection of your own "partners in creating"?

Not only for construction and building, but for setting up precision machine tools and long production lines, in the fabrication of large ships and aircraft, experienced engineers know that they can rely utterly on K & E transits and levels. Coated lenses for increased light transmission, precision-ground adjusting screws, chromium-coated inner center and draw tubes, completely enclosed leveling screws, improved achromatic telescopes—all these typify the advanced design of these instruments.

partners in creating

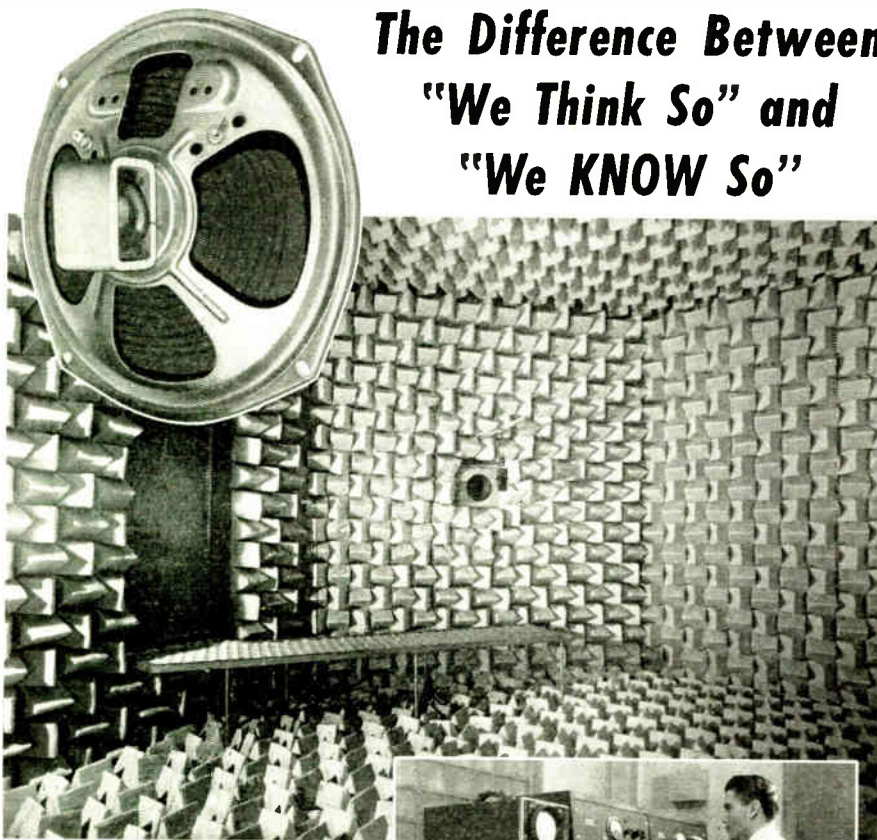
... the world's
busiest tunnels

... largest
telephone system

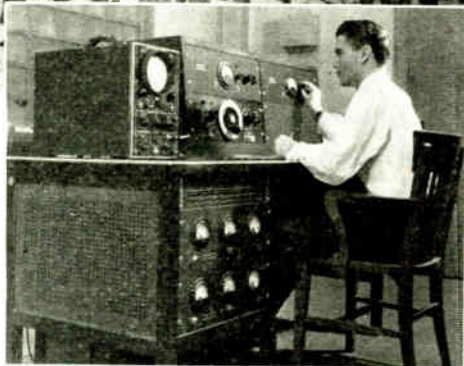
Drafting, Reproduction,
Surveying Equipment
and Materials,
Slide Rules,
Measuring Tapes.

KEUFFEL & ESSER CO.
EST. 1867
NEW YORK • HOBOKEN, N. J.
CHICAGO • ST. LOUIS • DETROIT • SAN FRANCISCO
LOS ANGELES • MONTREAL

The Difference Between "We Think So" and "We KNOW So"



*Permoflux
Speakers*



**...are Engineered for Application in
this Stalactite Acoustical Chamber**

In this completely soundproof room, asymmetrical walls and carefully designed mass-interval baffles effectively reduce troublesome resonant harmonics and reflected sound to an insignificant value. Response curves are plotted which represent true performances so that Permoflux engineers can say "We Know So." Its use at Permoflux is characteristic of the many factors which make it possible to substantiate the fact that Permoflux Speakers provide the finest possible sound reproduction.

SEE US AT THE CHICAGO TRADE SHOW—BOOTH 32

TRADE MARK
PERMOFLUX

**PERMOFLUX CORPORATION
4900 WEST GRAND AVE., CHICAGO 39, ILL.**



PIONEER MANUFACTURERS OF PERMANENT MAGNET DYNAMIC TRANSDUCERS

NEW PATENTS

(Continued from page 102)

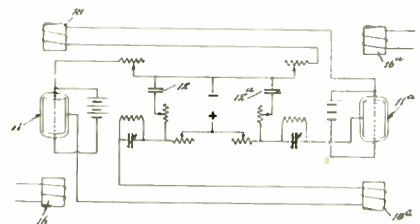
tion of the optical path length as a certain path length in a crystal is equivalent to a different path length in air. It is also proposed to use birefringent crystals as the element which controls the optical path length; with Rochelle salt as the birefringent material, 100 volts will cause a frequency shift of 85 radians. Another way of modulating the light ray is by means of the Kerr effect.

Regardless of the system used, a cosine wave, the argument of which is proportional to the signal amplitude, and a sine wave, the argument of which is proportional to the signal amplitudes, may be generated. Then each of these waves is combined with the carrier wave to give the two cosine x sine products, addition of which results in frequency-modulation of the carrier.

F. J. D'Agostino and S. A. Valdes, Hartford National Bank and Trust Company, (F) April 19, 1943, (I) September 18, 1945, No. 2,385,086.

Magnetron Multivibrator

The two magnetrons 11 and 11a conduct current alternately and operate similar to the two tubes of a multivibrator. Assuming tube 11 conducts, electro-magnet 18a will be energized and the combined fields of the separate magnet 16a and the magnet 18a will oppose conduction of tube 11a. However, capacitor 12a is being charged in the meantime and at the instant it has built up a sufficient voltage across tube 11a, this tube and the associated circuit will carry current. Current in this circuit energizes electro-magnet 18 the field of which adds to the field of the separate magnet 16 quenching conduction through tube 11. Current through the winding of electro-magnet 18a will cease and the tube 11a therefore continues to conduct though the voltage across it is reduced as the capacitor 12a discharges.



When the capacitor 12 has built up sufficient voltage across tube 11 to make it conduct current, the identical operation will result with the roles of tubes 11 and 11a and their associated circuits reversed. Continuous multivibrator action

.....

TRAIN RADIO TO AID IN OPERATION OF PERE MARQUETTE'S NEW, STREAMLINED TRAINS

"By virtue of their efficient and effective performance during the war, the nation's Railroads have won the respect and goodwill of the American people. It is essential that this public esteem be maintained. That is why progressive railroad managements are planning the use of many technical developments capable of making additional contributions to the safety and comfort of rail passenger service, and why the new, streamlined passenger trains which Pere Marquette soon will put into operation are to be equipped with train radio communication systems."



President
Pere Marquette Railway Company

.....

In designing mobile communications facilities for the nation's progressive railroads, Farnsworth has met and solved a number of unique engineering problems.

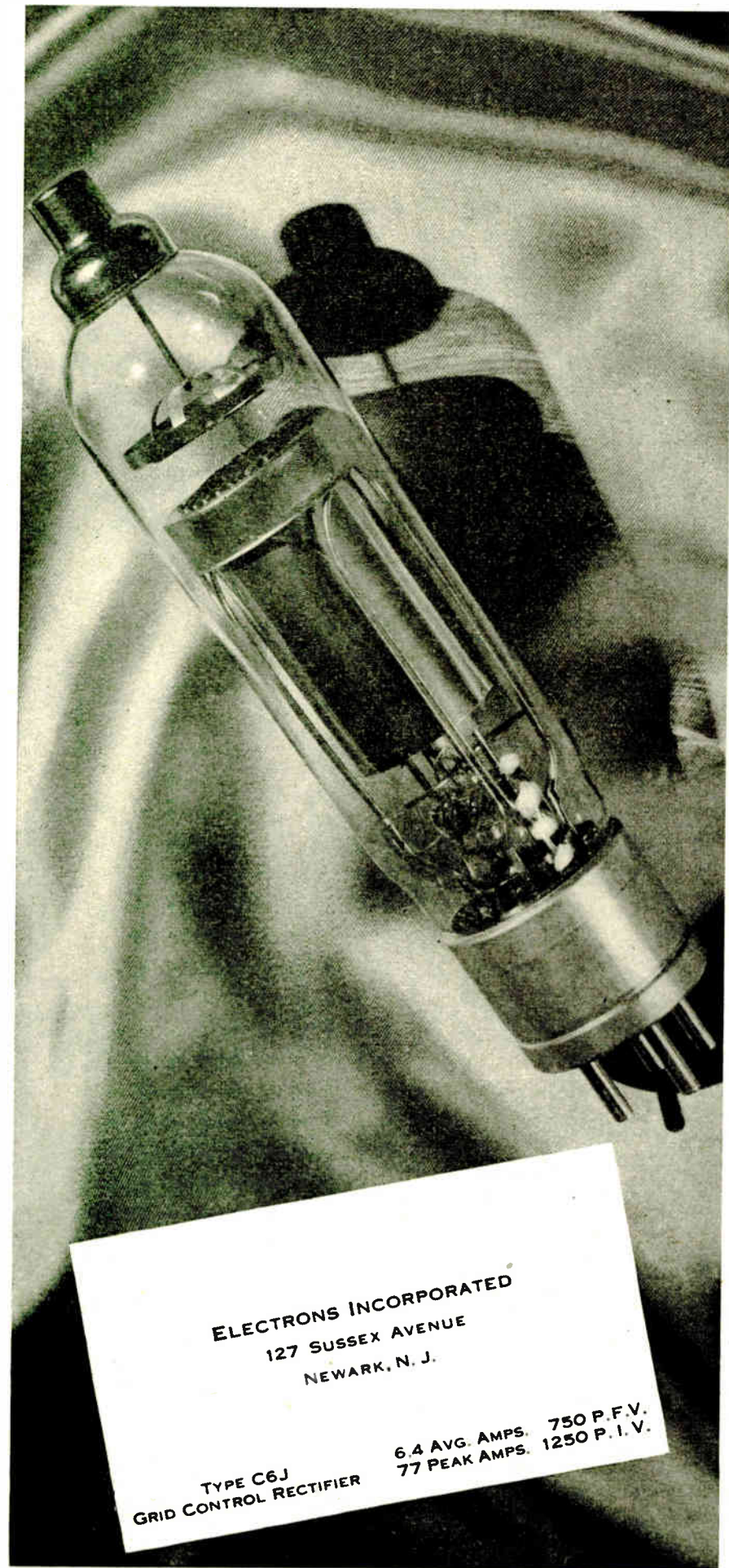
For example, before train radio could be of maximum service in streamlined train operation, new antenna techniques had to be developed. On the one hand, minimum clearance, far below the seventeen-to-twenty-inch height of the normal VHF railroad antenna, was a prime requisite. On the other hand, because human life, as well as valuable property, is involved in passenger train movements, efficiency and reliability could not be sacrificed.

Faced with this dual objective, Farnsworth engineers set to work. Creative engineering, coupled with careful field testing, resulted in the new *Farnsworth VHF train radio antenna*. Though as efficient as the taller, quarter-wave, ground-plane antenna, heretofore accepted as standard, it is only *eleven inches in height*.

This new antenna is another instance of the careful engineering and thorough research through which Farnsworth railway communications systems guarantee *maximum usefulness and flexibility with simplified, low-cost maintenance*. Farnsworth Television & Radio Corporation, Dept. EI-5, Fort Wayne 1, Indiana.

FARNSWORTH TELEVISION & RADIO CORPORATION

Farnsworth Radio and Television Receivers and Transmitters • Aircraft Radio Equipment • Farnsworth Television Tubes • Halstead Mobile Communications and Traffic Control Systems for Rail and Highway • the Farnsworth Phonograph-Radio • the Capehart • the Panamuse by Capehart

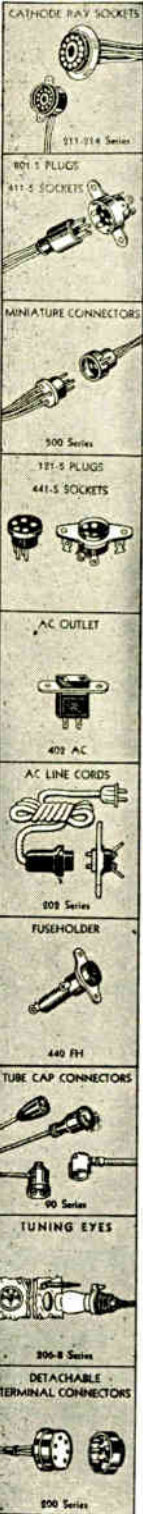


ELECTRONS INCORPORATED
 127 SUSSEX AVENUE
 NEWARK, N. J.

TYPE C6J
 GRID CONTROL RECTIFIER

6.4 AVG. AMPS. 750 P. F. V.
 77 PEAK AMPS. 1250 P. I. V.

ALDEN RADIO COMPONENTS ALDEN



211 AND 214 SERIES CATHODE RAY TUBE CONNECTOR WITH LEADS

Any requirements in a cathode ray tube connector with proper leads attached engineered as an assembly, high safety factors in all kinds of service. Super-long leakage paths, rounded, "coronaless" clips and individual pocket type insulation and strain relief.

801-5 SHIELDED PLUGS AND 441-5 METAL SOCKETS

Shielded plug and socket for automobile sets or for any other equipment where leads must be shielded and shield grounded to chassis. Shield is easy to put on and solder to plug. Supplied with or without shielded cable.

MINIATURE CABLE CONNECTORS 500 SERIES

Famous for connecting AC motors in combination sets and all kinds of "through-panel" work. Overall diameter only 3/8". Save labor costs by having our special wire equipment put on leads to your particular needs. Underwriters approved.

121-5 MINIATURE PLUGS AND 441-5 SOCKETS

Compact plug and metal seal socket. Use when you want connector to come directly out of chassis. Leads to your specifications. "Pocket" type individual insulation on each lead and clip.

AC OUTLET 402AC

Smallest possible outlet that can be eyeleted or rivetted to chassis like other components. Tabs designed for easy soldering.

AC LINE CORDS 202 SERIES

Detachable AC line and with socket, neat and compact. Socket eyelets or rivets in place like other components. Underwriters approved.

FUSEHOLDER 440FH

Here is a fuseholder that rivets or eyelets in place like the other components in your set. Cannot twist or turn, has spring to eject fuse if it breaks, and make contact at base of fuse and prevent rattle. Top contact slotted for easy removal of fuse ferrule when glass breaks. Tabs are special design for ease in attaching primary leads of ample size.

90 SERIES TUBE CAP CONNECTORS WITH LEADS

Any requirement in tube cap connectors supplied with leads of proper voltage handling characteristics. Many made special, hundreds of moldings, stampings and wire to draw on.

206-8 TUNING EYES WITH LEADS

Supplied with tailor-made leads. With or without escutcheon and bracket. Individual insulation and strain relief for each lead.

200 SERIES DETACHABLE TERMINAL CONNECTORS

Replaces terminal strips. Supplied with leads. Each lead has individual insulation and strain relief.

WIRE AND CABLE

Any kind of wire or cable laced, braided, woven or assembled with any of our components or those of other make. Many types of wire in stock and in process.

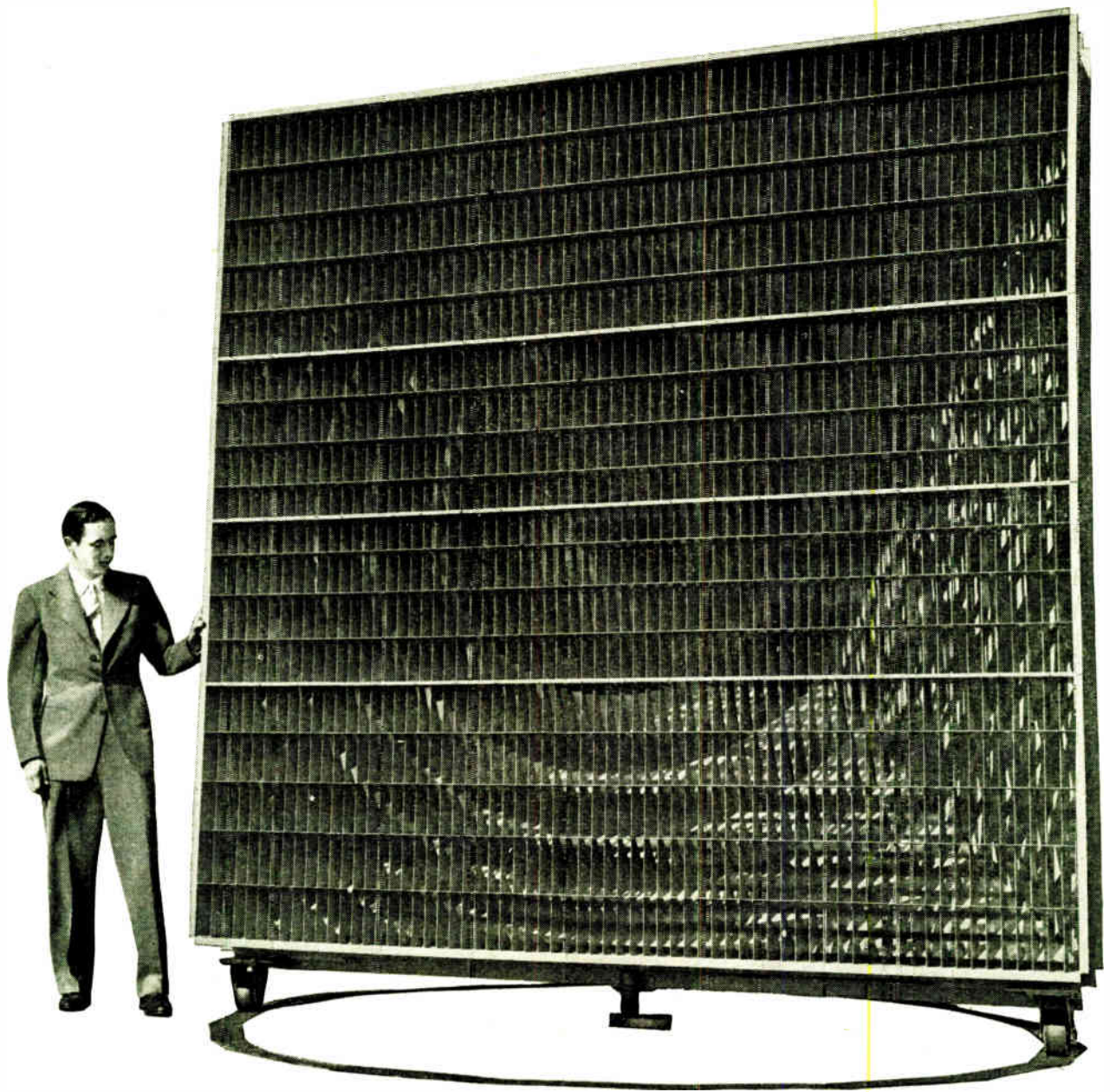
NEW ITEMS

Alden is a specialist in bringing through special electrical assemblies; new samples made promptly.

ELECTRICAL RECORDING INSTRUMENTS

Special instruments to record electrical impulses as they occur with all the minute variations of intensity and duration, free from the lag and inertia of present systems. "Electrographic" recorders we can supply, include a complete line of facsimile recorders, specially engineered recorders for high speed signal analysis, slow speed recorders for day by day events, multi-trace recorders for simultaneous recording of any phenomena that can be reduced to electrical impulses.

ALDEN PRODUCTS COMPANY
 BROCKTON 64G, MASS.



A "SEARCHLIGHT" TO FOCUS RADIO WAVES

In the new microwave radio relay system between New York and Boston, which Bell Laboratories are developing for the Bell System, giant lenses will shape and aim the wave energy as a searchlight aims a light beam.

This unique lens—an array of metal plates—receives divergent waves through a waveguide in the rear. As they pass between the metal plates their direction of motion is bent in-

ward so that the energy travels out as a nearly parallel beam. At the next relay point a similar combination of lens and waveguide, working in reverse, funnels the energy back into a repeater for amplification and re-transmission.

A product of fundamental research on waveguides, metallic lenses were first developed by the Laboratories during the war to produce precise radio beams.

This "searchlight" is a milestone in many months of inquiry through the realms of physics, mathematics and electronics. But how to focus waves is only one of many problems that Bell Telephone Laboratories are working on to speed microwave transmission. The goal of this and all Bell Laboratories research is the same—to keep on making American telephone service better and better.



BELL TELEPHONE LABORATORIES

EXPLORING AND INVENTING, DEVISING AND PERFECTING FOR CONTINUED IMPROVEMENTS AND ECONOMIES IN TELEPHONE SERVICE



An Announcement To Those Who Require The Best

THIS advertisement is addressed to the manufacturers of electronic equipment whose product demands the best in component parts—who will want the best in transformers, if “the best” is offered at a price that will fit the cost specifications of their finished product.

By adapting to peace-time use the major features of the Hermetically-Sealed transformer construction that won war-time leadership, Chicago Transformer is prepared to provide the best in transformers to those who require them. Fully developed basic mounting parts, when utilized on a mass production basis, will provide the element of economy in manufacture.



CHICAGO TRANSFORMER

DIVISION OF ESSEX WIRE CORPORATION

3501 WEST ADDISON STREET

CHICAGO, ILL.

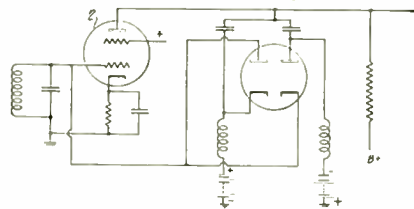


will thus be maintained once one of the tubes conducts current. By suitable adjustment of the variable circuit elements, recurrence frequency and duration of the pulses may be controlled. The two halves of the circuit may be made unsymmetrical to give unsymmetrical pulses.

M. Chodorow, Maguire Industries, Inc., (F) August 28, 1943, (I) Dec. 25, 1945, Nos. 2,391,545 and 2,391,546.

Limiter Circuit

The limiter circuit is adapted for rapid response to excessive amplitudes to suppress short noise impulses in frequency-modulated waves. Two diodes are connected to supply negative feedback voltages upon large outputs of the amplifier tube 2, the two diodes taking care of negative and positive peaks, respectively. These amplitude-controlled feedback voltages will limit the output of the amplifier to a desired value by reducing any grid voltage exceeding a predetermined value.



The feedback voltage may be applied to the screen grid of a pentode, while the incoming signal is applied to the control grid. In another version, inductively coupled feedback is used. The two diodes may be replaced by suitably connected triodes, the grids of which are controlled by the plate voltage of amplifier 2.

C. E. Atkins, Tung-Sol Lamp Works, Inc., Jan. 7, 1942, (I) Dec. 11, 1945, No. 2,390,502.

Expiring Patents

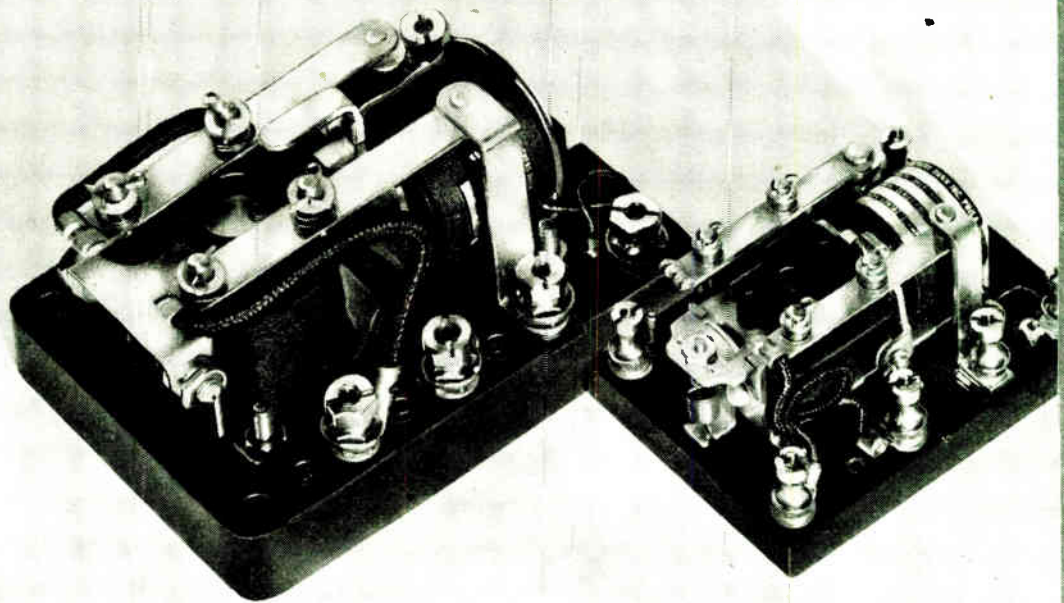
A new publication service presenting typical claims and one drawing of all individual patents that are expiring and about to become public domain has been started by Scientific Development Corp., 614 W. 49th St., New York 19, N. Y. Each weekly issue will be completely indexed for quick reference to any specific field.

Illinois Expands

The Illinois Condenser Co. moved into a new plant, recently built, at 1616 No. Throop St., Chicago 22, last month. Expanded facilities will enable the company to increase production.

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MECHANICAL LATCH-IN ELECTRICAL RE-SET TYPES

- Contacts "remember" which coil was last energized—by interlocking mechanically in position until they are released by energizing the other coil.
- Will not open in the event of power failure.
- Ideal for battery circuits. Contacts "stay put" without consuming any power.
- Standard and midget types for either AC or DC, and with any required contact or mounting arrangement.

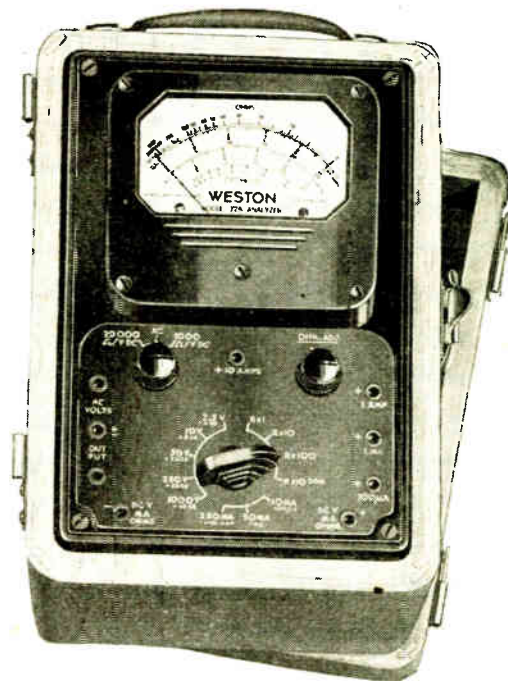
STRUTHERS-DUNN, Inc., 1321 Arch St., Phila. 7, Pa.



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SUPER-SENSITIVE**

Analyzer



Weston

MODEL 779

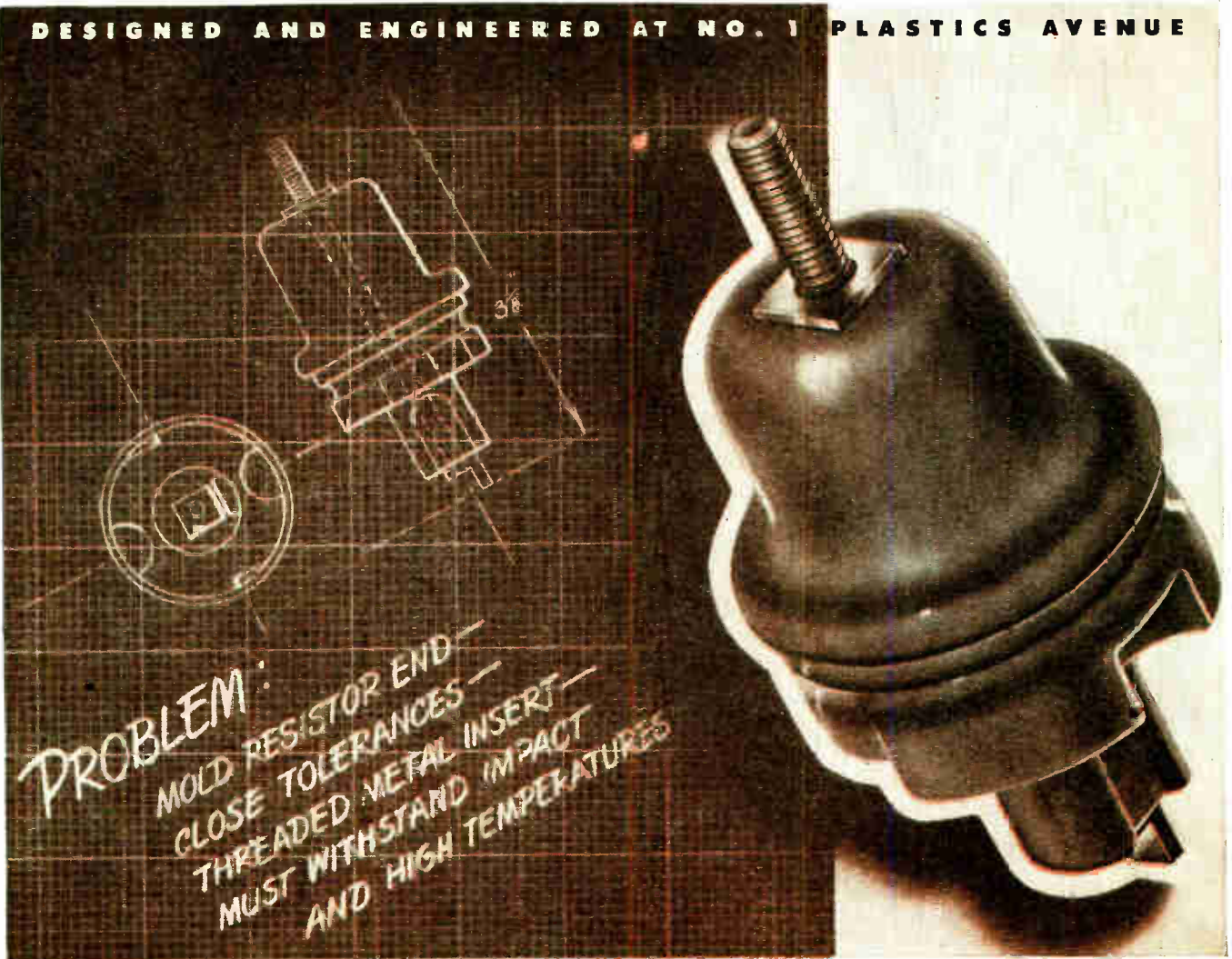
Model 779 is designed for use with WESTON Socket Selectors which facilitate checking tube circuit conditions – and with WESTON Televerters for DC voltage measurements up to 10,000 volts.

Extreme compactness and lightweight—dual DC voltage sensitivity of either 1000 or 20,000 ohms per volt – five AC and DC voltage ranges, seven DC current ranges, four DC resistance ranges, and five decibel ranges – all carefully selected to meet the broadest requirements of testing and maintenance – precision WESTON resistors throughout—large 50 microampere WESTON meter – temperature compensated including AC ranges – size only 6 $\frac{3}{8}$ " x 9 $\frac{1}{8}$ " x 4 $\frac{7}{8}$ " – furnished in rugged, solid oak carrying case.

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G-E Mycalex — for safe-conduct through shock and heat

● Here is the end of a sealed tubular resistor unit that operates at extremely high temperatures. It forms the outside electrical connection of the unit.

Heat-resistant material designed to withstand impact had to be molded over a long threaded metal insert . . . to intricate dimensions so that a metal shell could be spun over it and held tightly in place. These exacting specifications were met by injection-molding G-E mycalex—compound of glass and powdered mica with a unique combination of properties.

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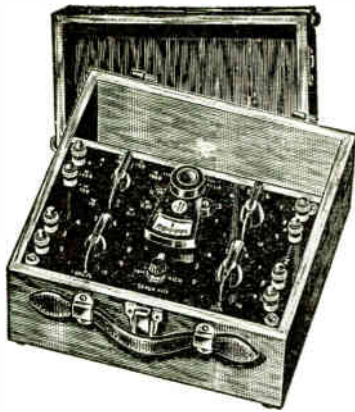
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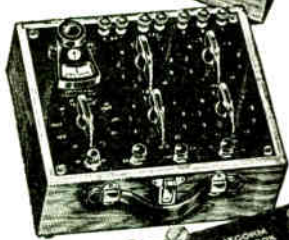
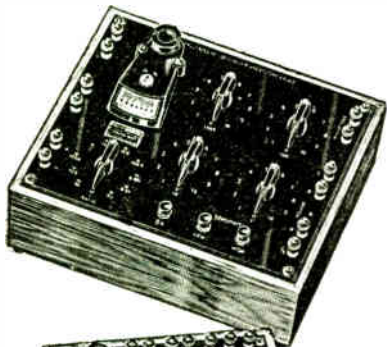
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Shallcross Test Instruments are built for hard, frequent use on any job — for production line, field, school or laboratory service. No need to worry about how or by whom they are used. They're rugged and dependable. In case of misuse, repairs are usually made locally.

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PERSONNEL

D. F. Schmit has been elected a vice-president of the RCA Victor Division, Radio Corporation of America, and henceforth will be in charge of the organization's engineering department. He has held important engineering posts with the company for more than fifteen years. In 1930 he became manager of research and engineering in tube manufacture at the Harrison, N. J., plant, nine years later was named manager of the new products division, and four years later became assistant chief engineer of the RCA Victor Division. Previously he had been connected with the engineering department of the General Electric Co. in Schenectady, and with the E. T. Cunningham Co. in New York.



D. F. Schmit



John S. Kehrer

John S. Kehrer has been named chief production engineer for the Turner Co., Cedar Rapids, Iowa. He was formerly connected with the Modern Steel Equipment Co. as an industrial engineer.

Dr. Joseph F. Libsch has been added to the engineering staff of Lepel High Frequency Laboratories, Inc., New York. He is a consulting metallurgist and a member of the faculty of the Metallurgical Engineering Department at Lehigh University, Bethlehem.



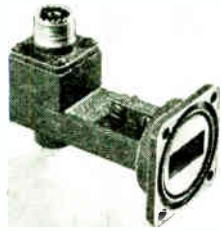
Dr. J. F. Libsch



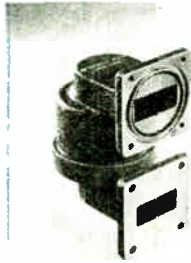
G. F. Leydorf

G. F. Leydorf has joined the engineering staff of Radio Station WJR, Detroit. Until now he has been a member of the engineering staff of the Crosley Corp., Cincinnati.

EVERY DE MORNAY-BUDD WAVE GUIDE is Electrically Tested, Calibrated and Tagged



Crystal Mount DB-453



Rotating Joint DB-446



90° Elbow (H Plane) DB-433



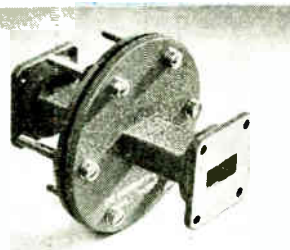
Pressurizing Unit DB-452



Mitered Elbow (H Plane) DB-439



Uni-directional Broad Band Coupler DB-442



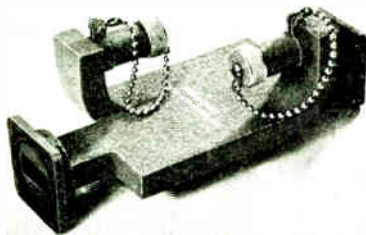
Bulkhead Flange DB-451



Uni-directional Narrow Band Coupler DB-440



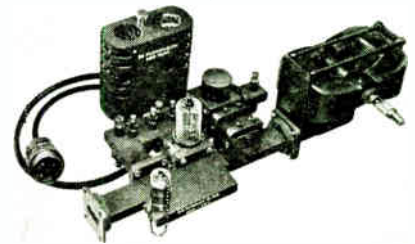
90° Twist DB-435



Bi-directional Narrow Band Coupler DB-441



Typical plumbing arrangement illustrating use of De Mornay-Budd components available from standard stocks.



RF Radar Assembly DB-412

When you use any De Mornay-Budd plumbing arrangement, you know exactly how each component will function electrically. You avoid possible losses in operating efficiency through impedance mismatches, or breakdown and arcing caused by a high standing wave ratio. (See chart below.)

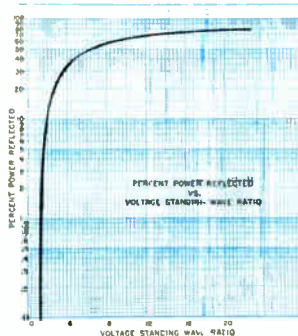
De Mornay-Budd wave guides are manufac-

tured from special precision tubing, and to the most stringent mechanical specifications. Rigid inspection and quality control insure optimum performance.

Complete laboratory service and consultations on micro-wave transmission line problems available.

The curve shows the manner in which the reflected power increases with an increase in the voltage standing wave ratio. The curve is calculated from the following equation:

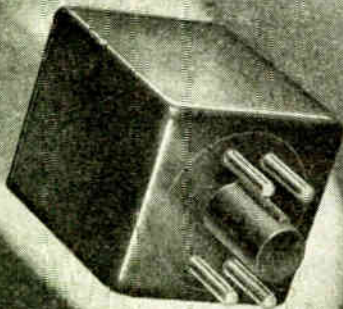
$$\% \text{ Power Reflected} = \left(\frac{\left(\frac{V_{\max}}{V_{\min}} \right) - 1}{\left(\frac{V_{\max}}{V_{\min}} \right) + 1} \right)^2$$



De Mornay-Budd, Inc., 475 Grand Concourse, New York 51, N. Y.

Be sure to visit the De Mornay-Budd display at Booth III, at the 1946 Radio Parts and Electronic Equipment Show, Hotel Stevens, Chicago, May 13-16th.

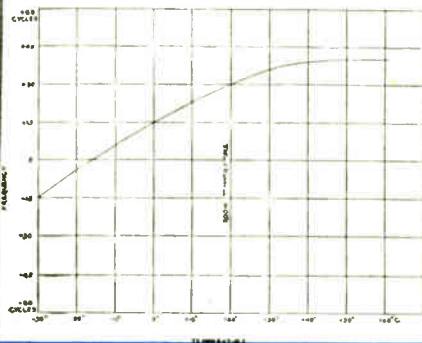
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Especially suitable for applications for close frequency tolerance . . . VHF services — police, aircraft, railway communications, etc. . . . works on 6.3v at 1 amp. . . . temp control within $\pm 3^{\circ}\text{C}$ operates at 60°C frequency control of $\pm .005\%$. . . frequency range 3MC to 14MC . . . fits octal socket . . .

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**RADIO PARTS AND ELECTRONIC
EQUIPMENT SHOW, BOOTH NO. 40**

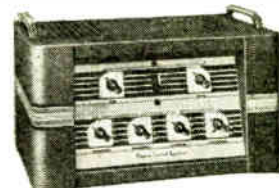
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BOGEN EX 35 DELUXE AMPLIFIER

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Wartime obligations prevented production, but for four years the engineers' prototypes have been tested under actual street-

lighting conditions . . . time-proven, it is now offered as our

SUNSWITCH LIGHT CONTROL

A practical and rugged unit with 100 per cent safety factor . . . its sturdy components assure a negligible maintenance cost. Tooling up for large scale production is now completed. Write for Bulletin No. 8239.

The SUNSWITCH can also be used to control illumination of public buildings, outdoor advertising, airport beacons, radio mast running lights, and ships' running lights.

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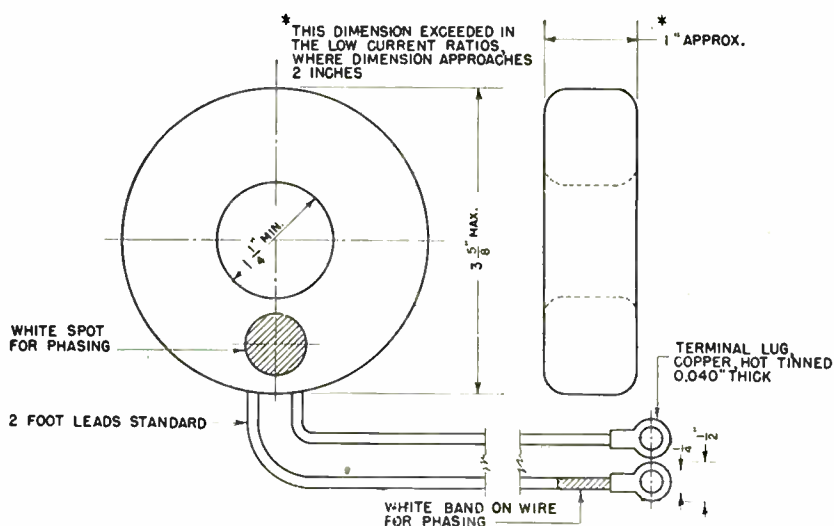
Burlington

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These transformers are designed for use with vane type ammeters which are used on frequencies from 25 to 133 cycles. Maximum accuracy is obtained at 70% of full scale value and is dependent upon the number of primary turns used. Accuracy is directly proportional to be the number of primary turns. These transformers are designed for a capacity of two volt-amperes and the secondary windings are of such size as to allow in excess of 800 CM/ampere at maximum rating. Insulation resistance is such that 4500 volts can be applied without breakdown.

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BURLINGTON INSTRUMENT COMPANY
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Brig. General Samuel M. Thomas has been made international technical representative of RCA Communications, Inc. He has been director of the Communications Division, Office of Military Government for the United States Army with headquarters in Berlin.

Ben Waxler has joined the Globe Electronics Corp., New York, as chief radio engineer. He was formerly chief radio engineer for the David Bogen Co. and the Regal Electronics Corp.

J. Ernest Smith has joined the engineering staff of Raytheon Mfg. Co. and will head its microwave communication engineering department. During the past twelve years he has been connected with the Radio Corp. of America as research division head of RCA laboratories.



J. Ernest Smith



C. L. Wilson

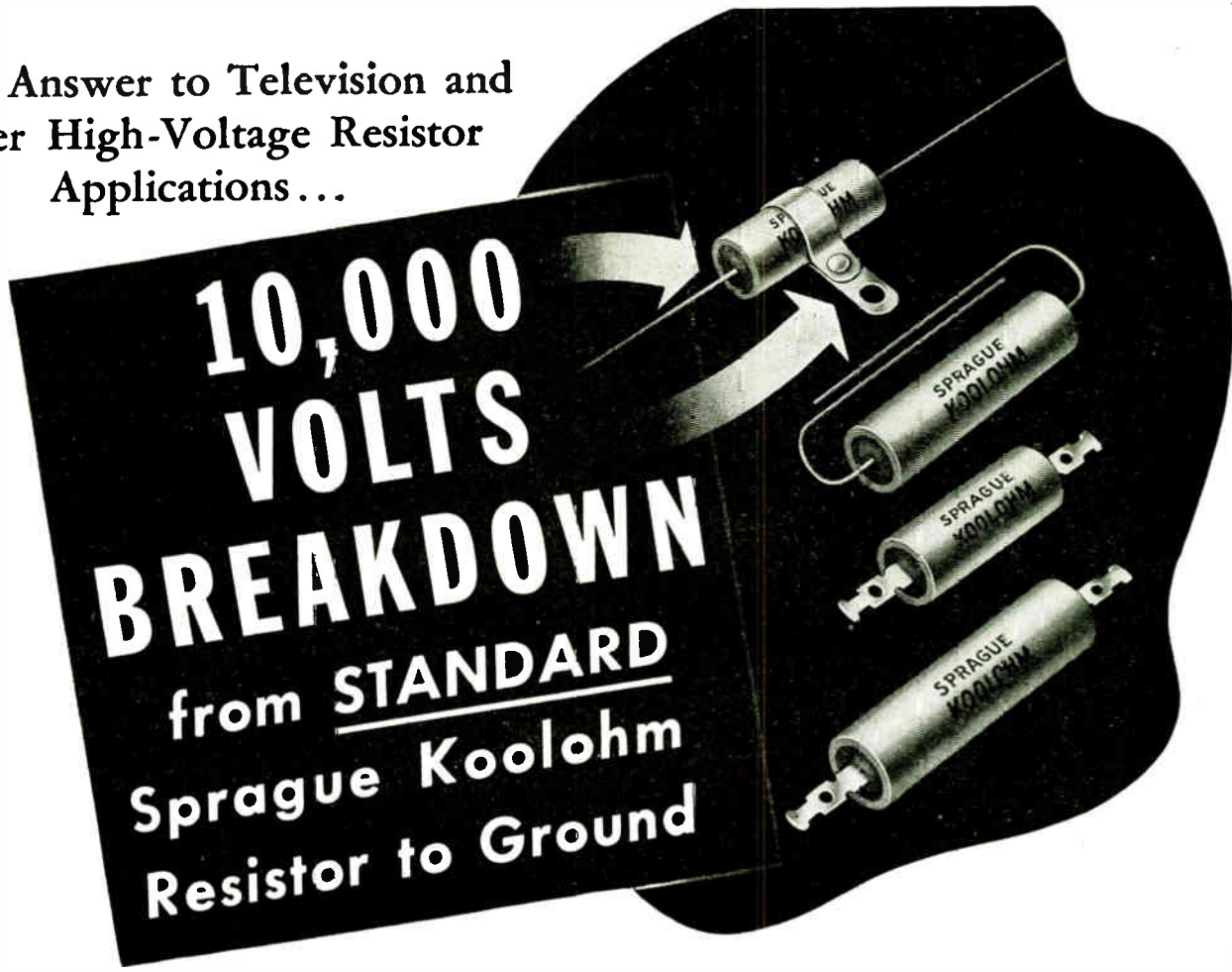
Carroll L. Wilson has been elected as vice-president of the National Research Corp., Boston. Since 1942 he has been executive assistant to Dr. Vannevar Bush, Director of the Office of Scientific Research and Development.

Louis G. Bacher has been appointed Western District Manager for the General Instrument Corp. and will have charge of the company's Chicago office. He has seen former service with Bendix, Philco and General Electric.

Robert L. Wolff has been appointed chief radio and electronics engineer for Centralab Division of Globe-Union, Inc., Milwaukee, and **Rolland R. Roup** has been made chief ceramic engineer of the organization. Wolff was formerly connected with Western Electric and Wells-Gardner; Roup was formerly with the A. O. Smith Corp. in Milwaukee.

Frank B. Powers has left the Westinghouse Electric International Co., where he was overseas traction manager, to become vice-president in charge of operations and engi-

The Answer to Television and
Other High-Voltage Resistor
Applications...



**10,000
VOLTS
BREAKDOWN**
from STANDARD
Sprague Koolohm
Resistor to Ground

Completely insulated surface

Standard Sprague Koolohm Wire Wound Resistors have the high insulation resistance to ground which you need for television and other applications where high voltages are involved—10,000 volts from the surface of their sturdy ceramic jackets to their resistance elements. Mount them anywhere without fear of voltage breakdown!

In addition, Koolohms give you the advantages of higher resistances in smaller physical sizes; easier mounting; use at full wattage ratings; and overall tropicalized protection against the most severely humid conditions. Write for Catalog 10EA.



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**CERAMIC
INSULATED
WIRE**

**DOUBLY
PROTECTED**
by glazed
**CERAMIC SHELLS and
MOISTURE-PROOF END SEALS**

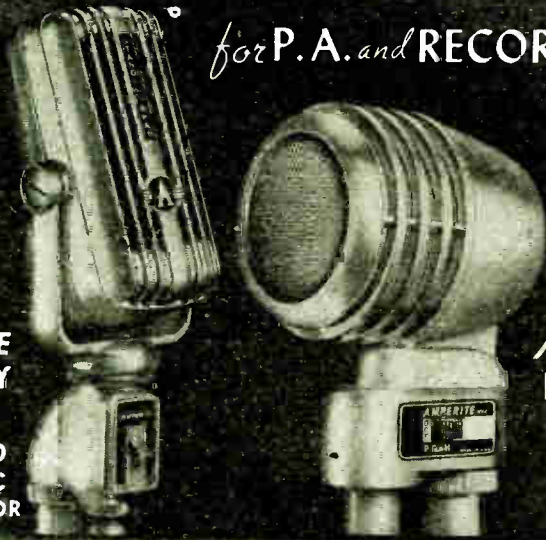
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The Greatest Wire-Wound Resistor Development in 20 Years

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AMPERITE VELOCITY MICROPHONE WITH PATENTED ACOUSTIC COMPENSATOR

New P.G. DYNAMIC WITH NEW SUPERIOR ELIPSOID PICK UP PATTERN!



AMPERITE KONTAK MIKES IDEAL FOR AMPLIFYING STRINGED INSTRUMENTS USED WITH ANY AMPLIFIER AND WITH RADIO SETS.



ASK YOUR JOBBER . . . WRITE FOR FOLDER

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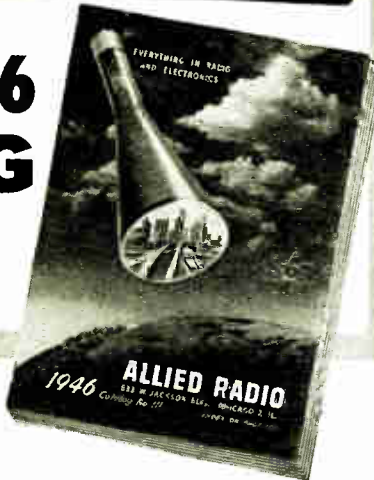
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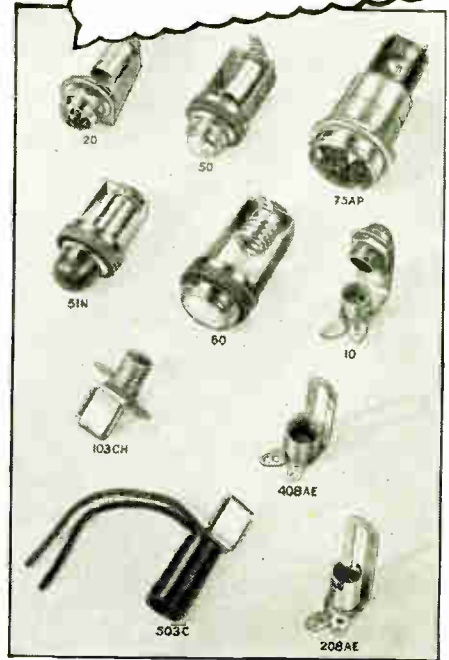
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IN-RES-CO RESISTORS

Close tolerance units for precision performance

IN-RES-CO resistors are engineered to meet all important electronic application needs. They are wire wound for permanent, exact resistance value and both inductive and non-inductive types are standard. Standard tolerances are 1 and 2%—closer tolerances on special order. Rigid quality control assures a uniform standard of excellence and modern manufacturing facilities result in low unit cost and prompt delivery. Manufacturers of electrical and electronic instruments and equipment should investigate the advantages of designating IN-RES-CO as their exclusive wire wound resistor source.

TYPES RN AND SN Tropic-proof resistors—
RN: 3/4" long x 5/8" dia., Max. Res. 1/2 Megohm, 1/2 watt; SN: 1-3/16" long x 5/8" dia., Max. Res. 1 Megohm, 1 watt



INSTRUMENT RESISTORS CO.

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KINGS Electronics

NEW IMPROVED MICROPHONE PLUGS and JACKS ELIMINATE NOISE • SHORTS • LEAKAGE



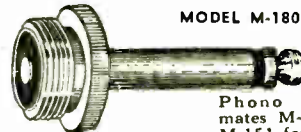
MODEL M-151

Female connectors. Solid silver plated contact, coupling can be removed completely for soldering.



MODEL M-161

Chassis mounting, solid silver plated contact. Milled flat, prevents turning in chassis.



MODEL M-180

Phono plug, mates M-150 or M-151 for insertion in standard phono jack.



MODEL M-192

Solid silver plated double female with coupling nuts.

MODEL M-190
Solid silver-plated double male, mates M-151 or M-150.



STANDARD MICROPHONE JACKS AND PLUGS



MODEL M-170

Mates with Model M-151 and M-150 Standard solder contacts.



MODEL M-160

Chassis mounting—standard solder contact.



MODEL M-191

Double female coupling mates M-170, M-160-161.



MODEL M-150

Standard solder contact mates with models M-170, M-161, M-160.

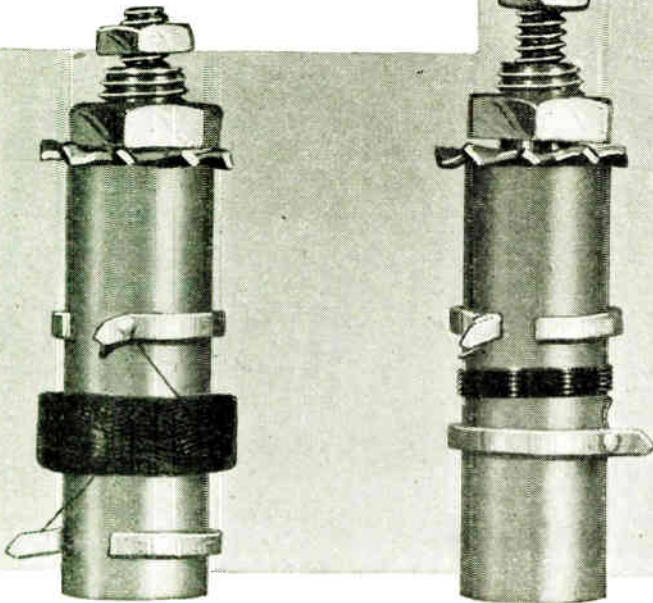
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Be sure to specify the inductance or capacitance and frequency required when ordering the LS-3.
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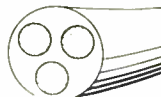
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neering for the Great American Industries. This organization includes among its subsidiaries Connecticut Telephone and Electric Division.

Adelbert R. Morton has been appointed to the post of chief engineer of its electronics division by the Insuline Corp. of America. Previously he had been connected with the Ansley Radio Corp. as chief engineer, was production manager for the Ford Instrument Co. and factory planning engineer for the Western Electric Co.

F. J. Gaffney, former head of the measurement and test equipment group of the MIT Radiation Laboratory, has been appointed chief engineer of the newly-organized Polytechnic Research and Development Company, Inc., 66 Court Street, Brooklyn, N. Y. He will direct both the research and engineering work of this new consulting organization, which is closely affiliated with the Polytechnic Institute of Brooklyn. Before the war, Gaffney was chief engineer for the Browning Laboratories of Winchester, Mass.



F. J. Gaffney



Dr. F. R. Hensel

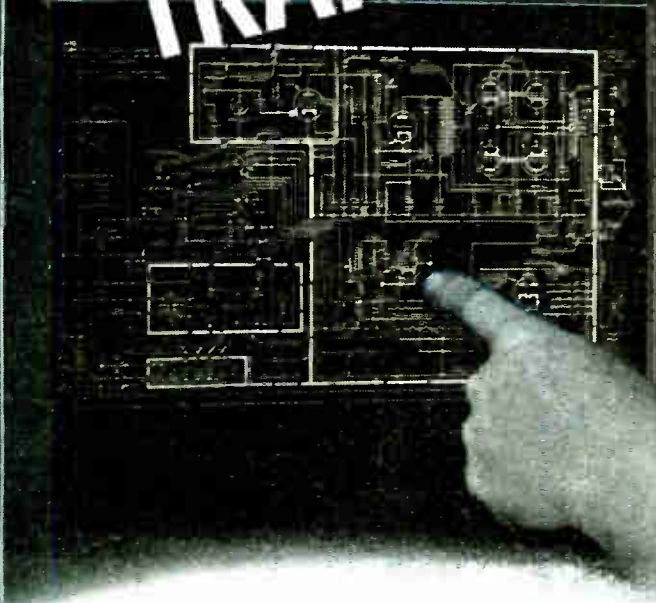
Dr. F. R. Hensel has been elected vice president in charge of engineering of P. R. Mallory & Co., Inc., Indianapolis, Ind. He has been chief metallurgical engineer for the Mallory company since 1934 and holds degrees from Mining Academy, Freiberg, Saxony; University of Sheffield, England, and Technische Hochschule, Charlottenburg.

He has presented more than forty scientific and technical papers before various metallurgical and other scientific societies, and has been granted more than 140 patents on alloys and metallurgical processes.

Captain Pierre Boucheron has been appointed general manager of the broadcast division of the Farnsworth Television & Radio Corporation and placed in charge of Station WGL at Fort Wayne, Ind. His duties will entail the management of Farnsworth's Fort Wayne AM station WGL as well as a proposed FM station.

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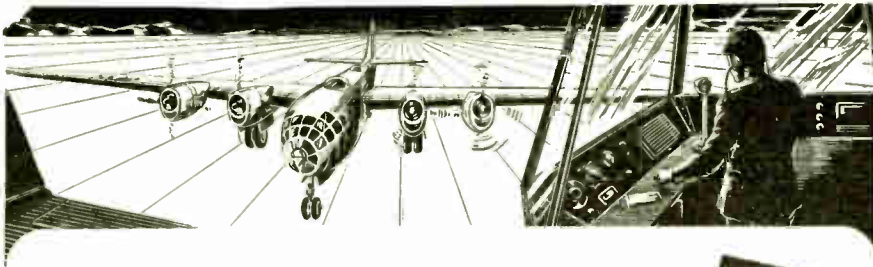
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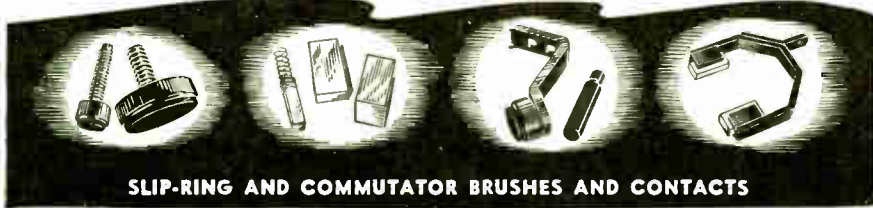
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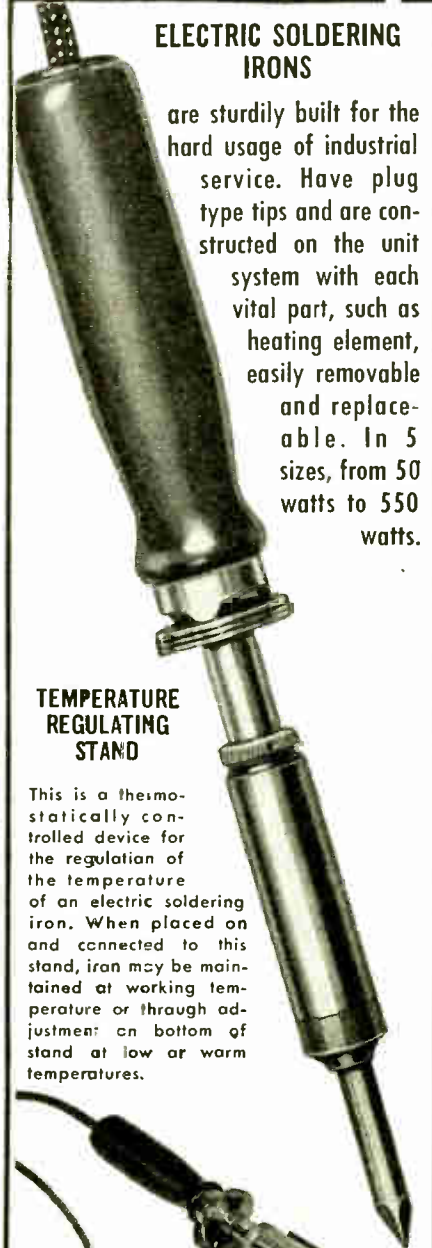
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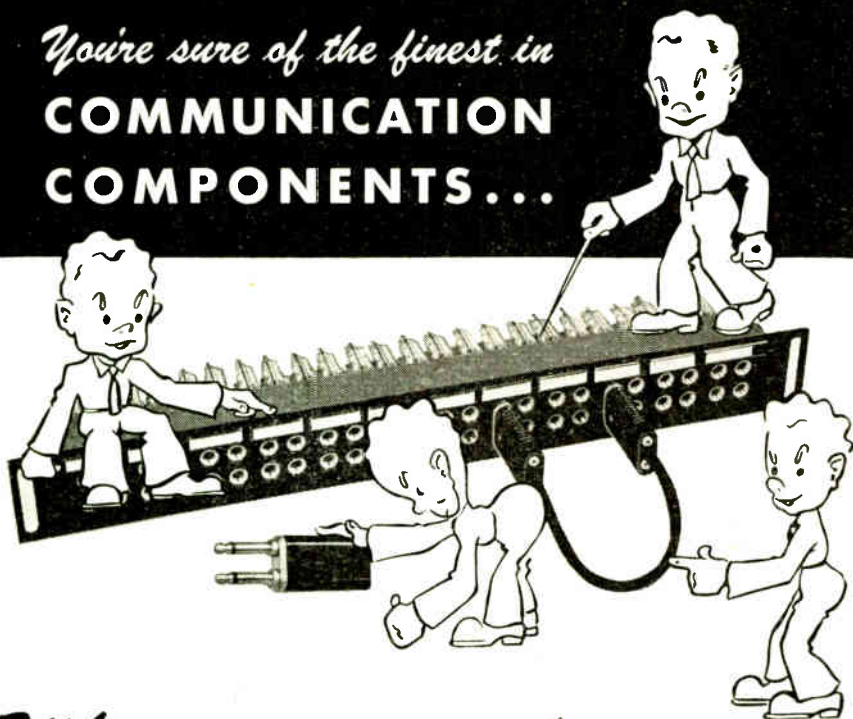
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When you need electrical components of superior quality that will give *extra* years of dependable, trouble-free service under all operating conditions—then it will pay to specify **ADC**. Our components reflect experienced engineering, precision workmanship and rigid inspection—plus use of highest quality materials. These products are now available for immediate shipment.

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NEW BOOKS

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By G. A. Culbertson. Published by Culco, Box 122, Montrose, California.

This compendium describes the operating details and circuits associated with a number of applications for dry plate rectifiers. It contains 16 pages and is priced at 50c.

Proc. of the Society for Experimental Stress Analysis, Vol. III, No. 1.

Edited by C. Lipson and W. M. Murray, 1945. Published by Addison-Wesley Press, Cambridge, Mass. 160 pages 8½x11. Illustrated. Price \$5.

This cloth bound volume is the fifth of the semiannual publications of the Proceedings of this Society, which is concerned with the study of structural stresses and methods for their delineation and analysis. This volume contains twelve articles, including three on strain gage technics. The use of photoelasticity, where plastic scale models are subjected to simulated strains and analyzed in polarized light also is covered. Methods for accurately determining the results of strains have been responsible for many design improvements in many fields, where lighter and stronger parts have resulted by the intelligent use of materials. This organization is devoted to the exchange of information on these subjects.

The Theory of Sound

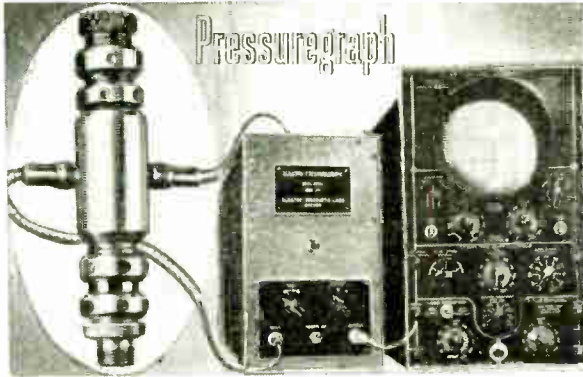
By Lord Raleigh, published by Dover Publications, New York 1945, in two volumes bound as one: Vol. 1, 480 pages; vol. 2, 504 pages; \$4.95.

The first American edition of Raleigh's famous classic on "the Theory of Sound", which combines both volumes in one book is likely to make this work as popular a reference book for American scientists, acoustical engineers and designers as it has long been in England. It is astonishing how this 69 year old treatise, first published in 1877, still retains a place of pre-eminence in modern acoustical literature, and that in fact most modern texts still use more or less the same approach to the theory of sound as first presented by Lord Raleigh in 1877. The work includes a historical introduction containing a short biographical sketch of Lord

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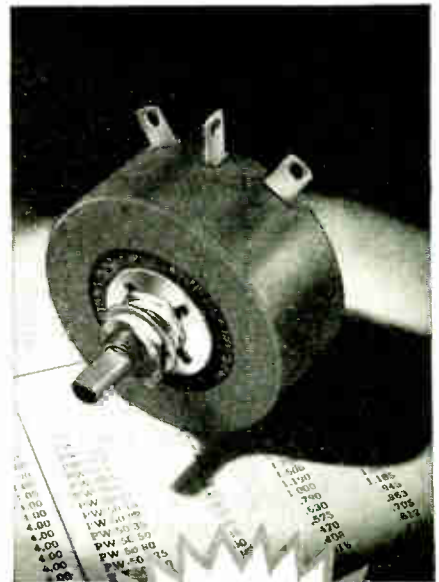
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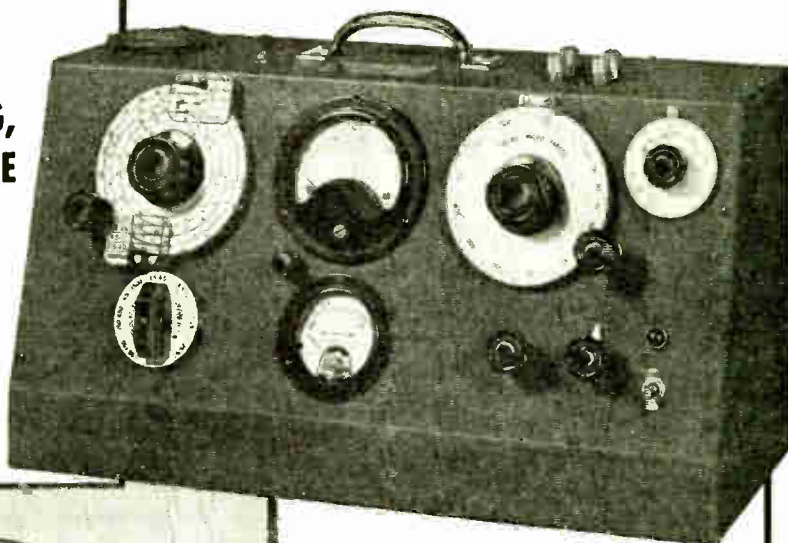
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RANGE OF Q MEASUREMENT: 80—1200.
ACCURACY OF Q MEASUREMENT: In general, $\pm 10\%$.
RANGE OF Q TUNING CAPACITOR: 11—60 mmf. ($\pm 1\%$ or ± 0.5 mmf., whichever is greater).



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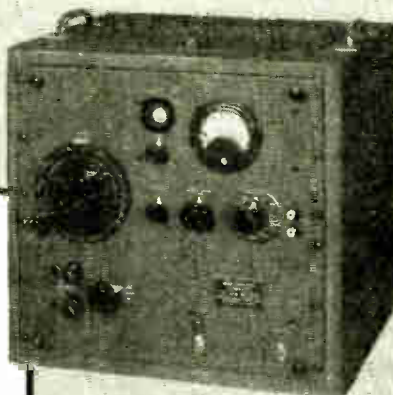
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FREQUENCY RANGE: 20 cycles to 5 megacycles in two ranges: LOW RANGE: 20 to 30,000 cycles. HIGH RANGE: 30 kilocycles to 5 megacycles. Accuracy ± 2 cycles up to 100 cycles, $\pm 2\%$ above 100 cycles.
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ATTENUATOR: 5 steps; X1.0, X0.1, X.01, X.001, X.0001.
DISTORTION: 5% or less.



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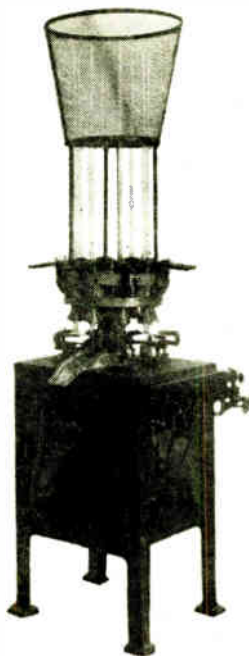
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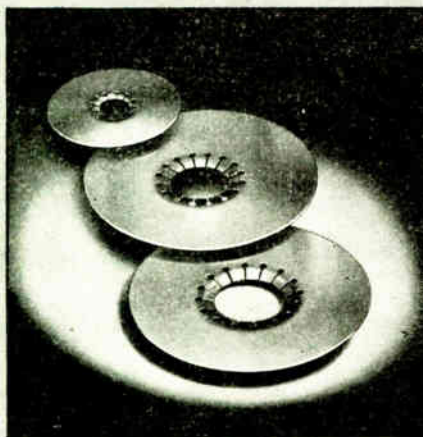
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Raleigh, a summary of the development of acoustics, Raleigh's contributions and a brief bibliography. The text of the two volumes is identical with the second edition published in 1929. The first volume covers essentially the production of sound through the theory of vibrations of dynamical systems, while the second volume is devoted to the propagation of sound presenting the theory of acoustic radiation through fluid media.

Elementary Electric Circuit Theory

By R. H. Frazier, Published 1945 by McGraw-Hill Book Co. 434 pages. Illustrated. Price \$4.

This book is written to serve as a text covering elementary electric circuit theory for students of electrical engineering. It is basic, covering all branches of specialization for power, communication and electronics.

Following the description of circuit definitions and basic concepts, chapters appear on resistance networks, alternating current concepts, complex algebra, impedance networks, non-sinusoidal waves, multiphase network, and finally a chapter on transients and their handling.

Radio Pioneers

Edited by Harold P. Westman and collaborators, for the New York Section I.R.E. Published November 1945. Copies \$1 from Prof. G. B. Hoadley, Brooklyn Polytechnic Inst., Brooklyn, N. Y.

A souvenir book, giving a historical review of the important advances in the radio art from the beginning up to the early days of broadcasting and the contributions of the early experimenters in this. Excellent for reference use.

Finch Develops New Facsimile Units

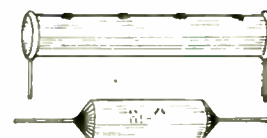
Two types of duplex facsimile units, designed for point-to-point, mobile and other commercial communications services, have been developed by Finch Telecommunications, Inc. The facsimile equipment transmits and receives all types of printed material, pictures, maps and drawings. One of the new models is a high-speed unit which sends and receives material at a speed of 30,000 words per hour or 2760 sq. in. of picture copy. The other is a medium-speed machine which handles 9600 words per hour or 918 sq. in. of picture copy.

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S-101

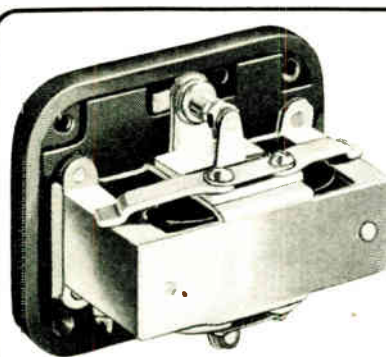
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POLARIZED
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4. mfd. 1500 vdc. WE oil -50 to + 85 c.	.70
.05 mfd. 1000 vdc. inv. mtg. GE pyr.	
1 1/4 x 1 1/4 x 3/4	.70
.25 mfd. 1000 vdc. inv. mtg. GE pyr.	
1 1/4 x 1 1/2 x 3/4	.80
.4 mfd. 1500 vdc. WE oil	.50
1—1 mfd. 7000 vdc. GE pyr.	7.50
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2. mfd. 220 vac. C-D	1.25
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BC-406—15 tube UHF RCVR 205-208 mc. easily converted to television bands, with tubes WE	35.00
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BC-436—Range Units	35.00
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BC-78-B—Baonton Sig. Gen.—15 to 55 mc. 190 to 230 mc. used	55.00
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115 v./860 vct. 510 M.A. oil	7.50
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Kenyon Fil. 115 v./5 v.-115 A.	8.95
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400 v.	per hundred 7.00
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CO-AX connectors, all types in stock amphenol connectors, from 1 to 25 pins light, heavy duty—write	
500 new rcvrs., BC-603 with manual, semi-compl., less variable cond. and Pwr. unit	4.50
Lots of 25	4.00
Relays: 115 vac. 10A. DPDT Isolantite	
1 x 1 1/2 x 2	2.00
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NEW BULLETINS

Thermocouples

Of interest to purchasing agents, engineers and metallurgists is a new catalog containing engineering data and descriptions of a complete line of standardized industrial thermocouples, their assemblies and accessories, issued by the Arklay S. Richards Co., Inc., 72 Winchester St., Newton Highlands 61, Mass. Thermocouples made of chromel alumel and iron constantan and couples made of platinum-rhodium are described. The catalog lists basic parts, wires, insulators and complete assemblies, such as pyrometers.

Welding and Brazing

The Stackpole Carbon Co., St. Marys, Pa., has issued a welding catalog listing carbon rods and plates, paste, welding tips, carbon and graphite, as well as copper coated graphite electrodes. Photographs of these products, engineering data and descriptions are given.

Plastic Compounds

The many uses and industrial applications of Vinylite elastomeric compounds are described and illustrated in a booklet issued by the Bakelite Corp., 30 E. 42 St., New York 17, N. Y. Descriptions of molding compounds, extrusion compounds, flexible sheeting and film and cloth-coating resins are given, with their respective applications. Also included are tables of properties. The applications range from electrical insulation and terminal sleeves to coated army raincoats and taxicab seat upholstery.

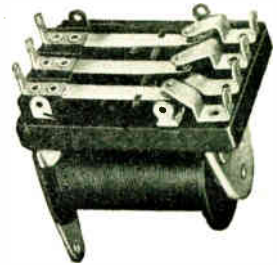
Fiberglas Insulation

Electrical insulation materials made of Fiberglas are described in a booklet issued by the Owens-Corning Fiberglas Corp., Toledo 1, Ohio. The properties of this material as well as test data and comparisons with other commercial materials are given and illustrated by graphs. Fiberglas comes in various forms as yarns, tapes, sleeveings, cloth and is usually combined with temperature resistant varnishes and impregnants for insulation purposes. High resistance to dampness and abnormal temperatures, high overload capacity and large safety factors are some of the characteristics described.

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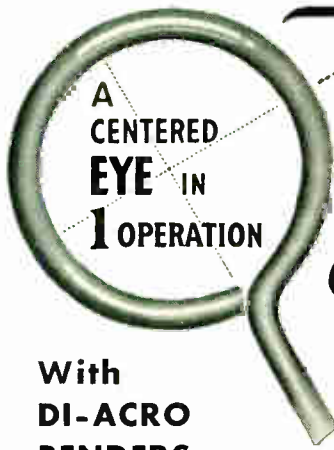
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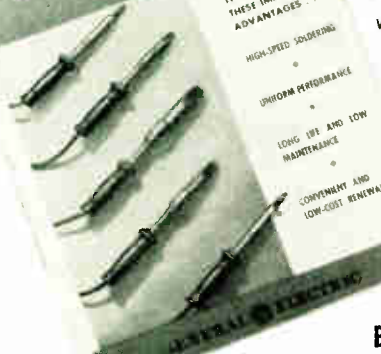
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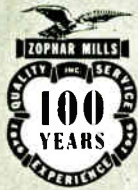
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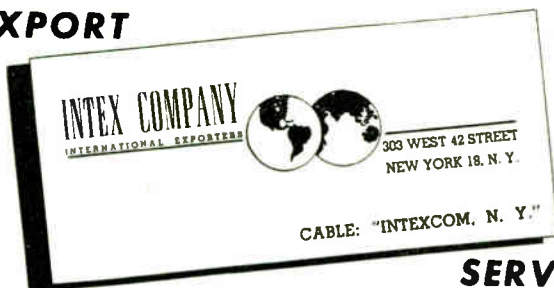
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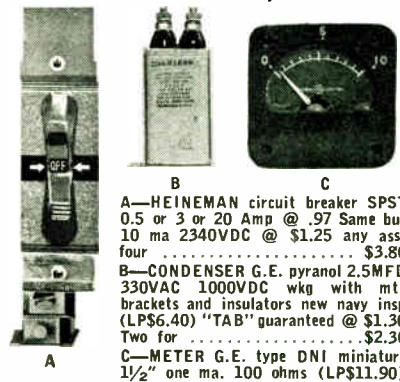
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Switch Equipment

A 36-page catalog for engineers containing information on selector type, tone, lever action, medium duty power and special switches, has been published by Centralab, Div. of Globe Union Inc., 900 E. Keefe Ave., Milwaukee 1, Wis. The section on selector switches describes the F, H, and G type indexes including detachable shafts, interstage shields, mounting straps, clips and contacts. Descriptions, construction and specifications are given in the tone switch section for a number of types and accessories. Another section describes bakelite and ceramic types of lever action switches.

Hermetic Sealing

"Stratopax" is the trade name applied to a special process of hermetically sealing electronic components in a neutral gas environment for freedom from moisture, dust, corrosion and weathering conditions, which has been developed by Cook Electric Co., Chicago, Ill. Relays, solenoids, contactors, etc., may be packed in sealed metal enclosures for maximum life of the components. The process is especially important for explosion-proof protection and elimination of fire hazards, when operating under low pressures conditions of high altitude. An engineering report describes the most important functions and gives specifications and illustrations for this packing process.

Vibration Control

The Vibration Div., MB Mfg. Co., New Haven 11, Conn., is distributing an engineering booklet explaining vibration problems and their solution by means of special mounts. Applications of "Isomode" mounts for various conditions are shown and a selector chart facilitates the choice of units for each application. The last part of the catalog describes a variety of products such as vibration exciters, vibration pickups and meters, switching units, preamplifiers and a vibration test machine.

Resistance Control

A wide variety of resistors and controls are described in catalog No. 46 distributed by Clarostat Mfg. Co., 285-7 N. 6th St., Brooklyn, N. Y. Included are attenuators, fixed, slider and power resistors, power rheostats, ballast resistors, voltage regulators, impedance controls,

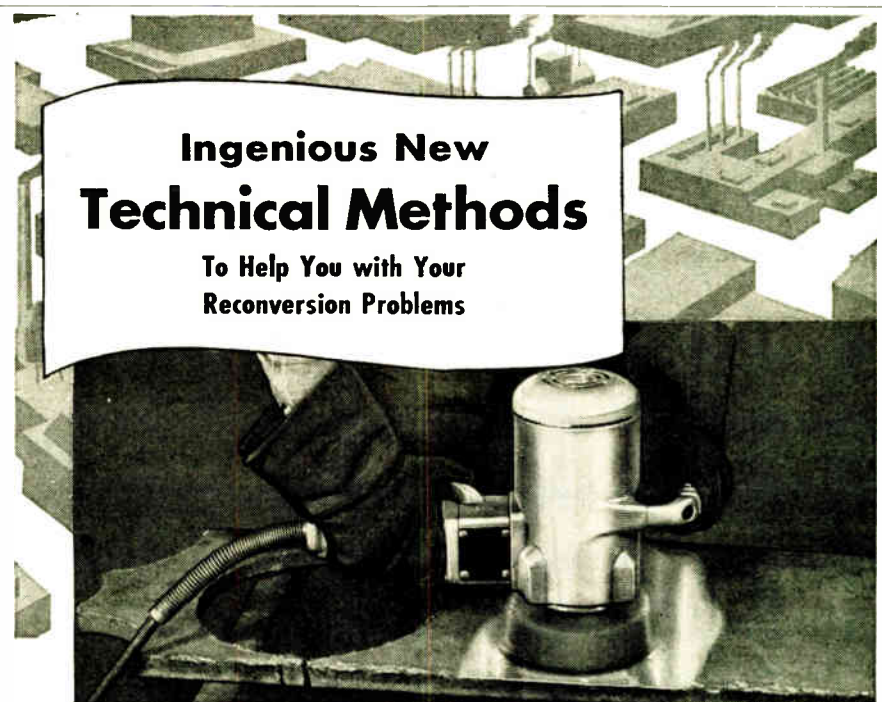
wire-wound controls and resistance decades. Taper characteristics, switching arrangements, range of available values, dimensional sketches and other characteristics are included with the photographs and descriptions of each product.

UHF Thermocouple

A 4-page folder describing uhf vacuum thermocouples is being distributed by the Field Electrical Instrument Co., 109 E. 184th Street, New York. Electrical data construction, dimensions, response and overload characteristics of unmounted vacuum thermocouples are given.

Temp. Controlled Relays

A series of temperature controlled relays is described in a 16-page catalog being distributed by H-B Instrument Co., 2518 N. Broad St., Philadelphia 32, Pa. In the first part of the folder various types of normally open, normally closed and inclosed relays are shown and their load ratings, coil voltages and dimensions are given. The second part illustrates and describes thermo-regulators, mercury plunger relays, multi-contact thermo-regulators, relays and selector switches, thermometers, thermostats and differential temperature controls.



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The Portable Gaston Grinder is designed for the grinding and sanding of metal—also, with wire brushes, for paint and rust removal. Because it is powered by a 3-phase motor, without brushes, commutators or gears, the Gaston will give long service.

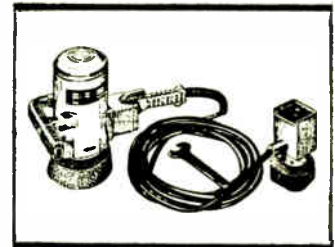
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In a dusty work atmosphere, that causes throat irritation and dryness, chewing Wrigley's Spearmint Gum helps keep workers' mouths moist and fresh—thereby reducing work interruptions—and "time out" to the drinking fountain.

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Nomographs for UHF

The second in the series of nomographs for engineers on the design of equipment in the uhf and television ranges, has been issued by the Federal Telephone and Radio Corp., Newark, N. J. The present set numbers 16 nomographs, bringing the total issued to 40. By use of these nomographs laborious computations formerly required for the design of uhf equipment are reduced to a few operations with a straight edge. While the last series contained many design formulas for hf transmissions, 10 of the present nomographs are on the subject of waveguides, including practically every formula that the engineer normally utilizes. Supplementing nomographs previously presented are charts on the shunt peaking method of range extension in wide band amplifiers and on dissipation of power in water cooled devices. Also included are some new subjects, such as two charts on attenuators, one on minimum loss pads and one on paint requirements.

Vacuum Tubes

Eitel-McCollough, Inc., San Bruno, Cal., has published a fully illustrated brochure showing the entire line of Eimac electronic products. Short descriptions and technical data are given with the photographs of each tube type. Many new types of uhf tubes, lighthouse and pulse type tubes, are included. Data also are included on vacuum pump and switches.

Indicator Lights

New indicator light assembly data is published in a reference booklet issued by the Gothard Mfg. Co., 2110 Clear Lake Ave., Springfield, Ill. Scientific and reference data aids the selection of suitable assemblies for any application. The complete line of indicator light assemblies is fully described and illustrated. Built-in resistor assemblies for neon lamps, brackets and accessories also are shown.

High Frequency Cables

High frequency cables using as insulating materials Plastex, Polyethylene, Neoprene, and Buna S are described in a data sheet issued by Simplex Wire & Cable Co., 79 Sidney St., Cambridge 39, Mass. The folder gives, in addition to a description of the physical characteristics of the cables, complete data on electrical characteristics.

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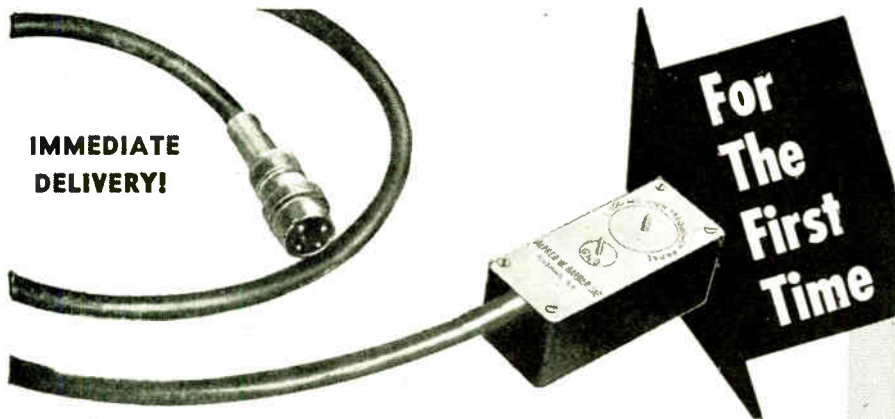
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Socket is designed so that by-pass capacitors may be mounted directly on the tube socket base. Button mica capacitors are available in a range of capacitances enabling the tube to be used at its highest frequency.

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Holes are provided for adequate ventilation of the tube.

Built-in retainer springs hold tube securely in place under conditions of heavy vibration and shock.

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Shown at left are JOHNSON 228 and 275 tube sockets. The 228 socket is ideal for many tubes including the "Tuf-20" and the 275 socket is designed for tubes including the 4-125-A, RK28, 125M, 803 and X404.



JOHNSON Tube Sockets are outstanding and are found widely used in commercial communication and industrial equipment. Write for specific information about sockets to meet your requirements. JOHNSON Tube Sockets, Condensers, Inductors, Insulators, Connectors, etc., for highest quality, adaptability, low cost and rapid delivery.

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Automatic Direction Finders

An invaluable aid to aircraft navigation are the automatic radio direction finders described and illustrated in a 28-page booklet distributed by the Sperry Gyroscope Co., Inc., Great Neck, New York. Single and dual direction finding systems are described for homing and position finding applications. The dual equipment provides the pilot with two continuous lines of position bearings on a single indicator permitting quick plotting on a map to obtain true position. Four principal functions are listed for automatic direction finders: 1. Automatic direction finding with sense antenna giving non-ambiguous bearings. 2. Automatic direction finding with anti-static loop for periods of severe rain, dust or snow static. 3. Shielded loop receivers for aural null determination. 4. Use as auxiliary range or broadcast receiver. These four functions and the various components are described in the booklet and complete graphic performance data of the equipment is included.

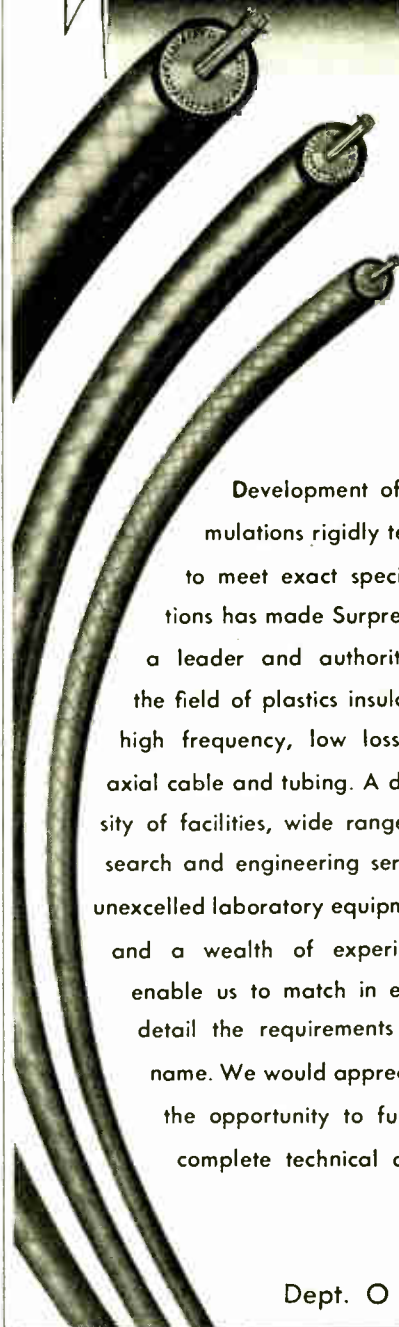
Vacuum for Industry

A new 24-page booklet entitled "High Vacuum for Industry" is available from the Vacuum Engineering Division of National Research Corp., 100 Brookline Ave., Boston, Mass. High vacuum systems and diffusion pumps, which made possible mass production of Penicillin, magnesium etc., are described and commercial applications with pressures in the range of .000001 to 1 mm. Hg. are shown. The booklet also has descriptions and illustrations of forepumps, condensers, vacuum valves, vacuum gages and controls, and ionization gages. A special section contains useful relations and tables in high vacuum technic.

Cathode Ray Oscillographs

Two folders on cathode ray tubes and cathode ray oscillographs are being distributed by Allen B. Du Mont Laboratories Inc., Passaic, N. J. Eight types of cathode ray tubes for oscillographic and experimental applications are described in one of the folders. They range from 3 in. to 9 in. tubes. Photographs, physical specifications and typical operation data are included. The second folder gives descriptions and specifications for six types of available oscillographs.

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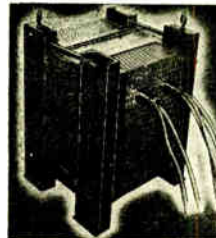
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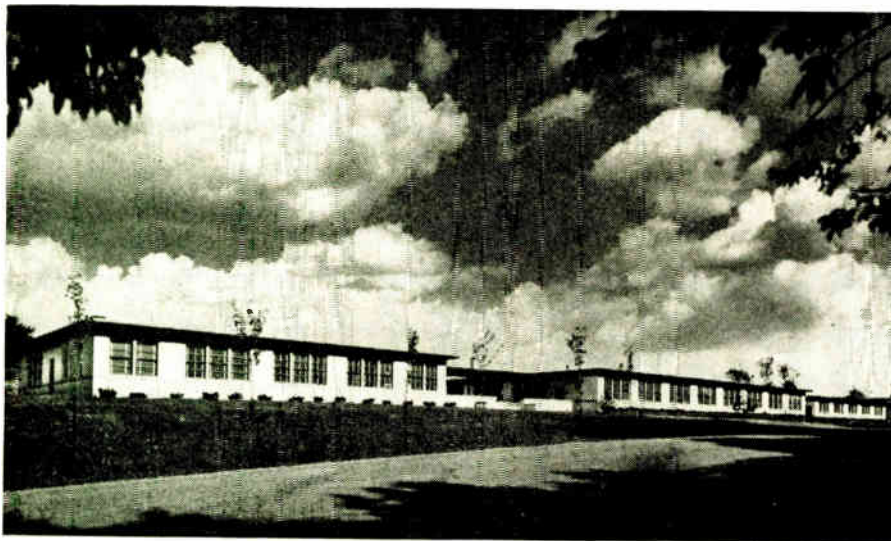
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New Precision Switch

A new snap-action switch made by the Micro Switch Division, First Industrial Corp., Freeport, Ill., has a repeatable accuracy of .0001 in. One use of this switch is in automatic thickness gaging. Two of these units actuated by a solenoid controlled plunger can be set up to operate either indicating lights or an automatic sorting trip which will separate thicknesses that are satisfactory, too thin or too heavy.

Quartz Crystals

Standard Piezo Co., Carlisle, Pa., has issued a 16-page catalog describing 18 types of piezo-electric crystals and new developments in crystal processing, such as ammonium-difluoride etching, x-ray analysis and others. With each type crystal, photographs, description, specifications and dimensions are included.

Facsimile Communication

Facsimile duplex communication equipment designed to take the place of the telegraph printer is described in a 4-page folder issued by Finch Telecommunications, Inc., 10 E. 40th St., New York. Faster and more economical than the telegraph printer, the instrument is available for speeds from 15 sq. in. per minute to 48 sq. in. per minute depending on the type of communication channel. Typical uses are described and sample photographs of facsimile transmissions are shown.

Licenses WE

Major Edwin H. Armstrong has granted a license to Western Electric Co. under his FM patents for the manufacture and use of FM apparatus for mobile and certain other communication purposes.

The Bell System is conducting extensive trials of mobile radio telephone service, and Western Electric plans to provide frequency-modulation apparatus for use in that service.

Now It's Musitron

Musitron Co., is the new name of the organization formerly known as the L. M. Sandwick Associates, manufacturers of phonographs and sound equipment. Although there have been extensive changes, the management has not been changed and is still under the direction of Leo Frankel. Headquarters are at 223 West Erie Street, Chicago.

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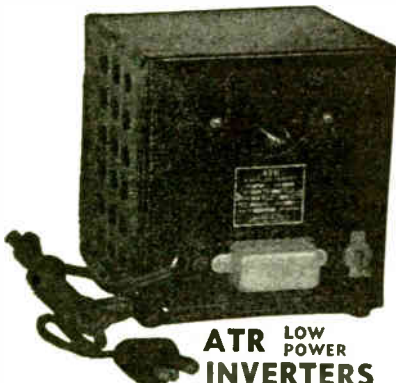


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OPA Effects on AM, FM and TV

The Civilian Production Administration's order curbing new construction to aid the veterans' housing shortage, may not have as serious an effect on broadcasting station construction, particularly FM and television, as was first feared.

The Federal Communications Commission does not feel that the wartime "freeze" mandate will be reinvoled. And as for duration, best guess (based on the E. I. reporter's talks with CPA and FCC officials) is that the CPA restrictions on new building structures for broadcasting stations will not last beyond 1946. Perhaps the situation may clear up by the coming Fall.

The CPA order affects only buildings—the structures and the integral components of buildings, such as plumbing and heating fixtures, although it may also hit air-conditioning units. But radio equipment—transmitters, studio apparatus, antenna towers, power generating equipment, transformers, testing equipment, conveyors (and even elevators)—are completely exempted, CPA sources state. The radio-station equipment, they emphasize, is not considered a part of the physical building structure.

Low-band FM?

As to the possibility of the FCC restoring low-band FM transmission, owing to impending delays in construction of high-band FM stations, there seems nothing like this in the wind; FCC sources express their viewpoint that such a step would not be necessary unless the CPA materials' ban were extended to include station radio apparatus—which is most unlikely.

Opinion around Washington is that since the FCC has definitely determined upon the upper-band FM allocation, a two-band plan would slow up the manufacturers' future output of home receivers containing FM circuits.

Television, under the CPA ruling, will undoubtedly be slowed up or actually stalled more than any other broadcasting service, because television needs new specialized construction for its studios and transmitter buildings in the cities where it is not now located. The hiatus due to the construction ban probably is determined by the FCC because it will give more time to study black-and-white versus color video.

In the final analysis, manufacturers can go ahead with their produc-

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tion of transmitters and receivers because, after all, television is not due to get away for any major head start as a public service until the fall or close of 1946. In the areas where stations are already on the air, home television receivers can be sold without restriction.

The most important thing in this CPA picture therefore is that AM-FM television equipment will not be blocked. Thus new stations may find temporary locations in existing buildings for their studios. Transmitters could be housed in old buildings or modified structures, using the \$1,000 exemption expenditures.

Studio and transmitter buildings will be considered separately, it is indicated by the CPA officials. Thus construction or repair funds up to \$1,000 can be spent on each without CPA approval.

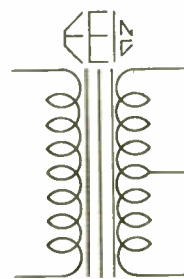
Local decisions control

Also CPA sources indicate that individual decisions as to new construction of local buildings will be entirely dependent upon the 71 regional directors and the local committees for the Federal Housing Administration—a fact which presents "silver linings" for the broadcasting industry. Thus there will be areas where there is no housing shortage for veterans—this is especially true in the smaller cities and towns where FM stations are planned—just as during the wartime "freeze" there were communities with no broadcasting stations where radio listening service can be deemed essential. In these instances—and this should be helpful to FM and new AM stations—the local housing committees (consisting of representatives of the local government, builders and the FHA and CPA field officials) will be amenable to granting approval to radio broadcasters with proof of essentiality of their station buildings' programs.

Thus the picture, as of the present, is not too black, but has many loopholes of hope.

Radio Manufacture Will Top 22,000,000

Radio manufacturers will produce 22,000,000 receivers during 1946. The figure is based on the results of a questionnaire sent to all manufacturers by FCC and represents expected production of 85 manufacturers. The expected total is greater than the largest previous year's production, which was 13,000,000 in



TRANSFORMERS

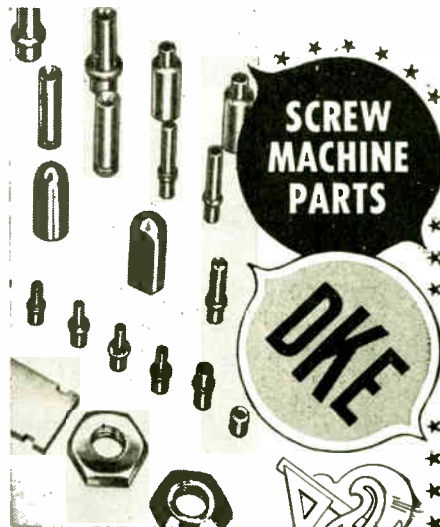
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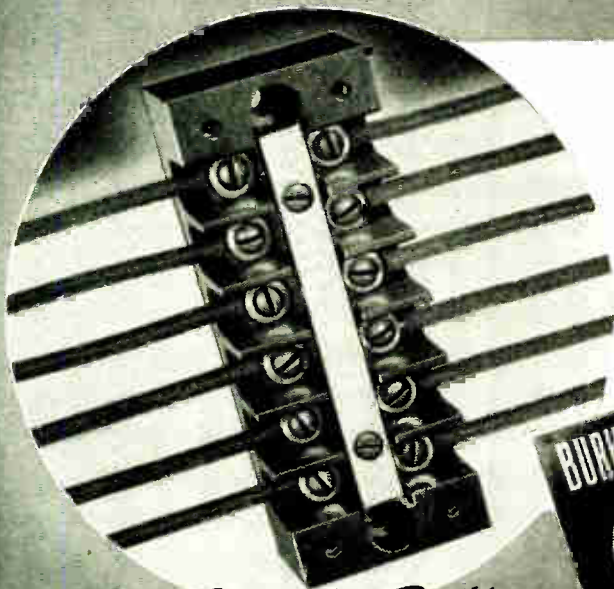
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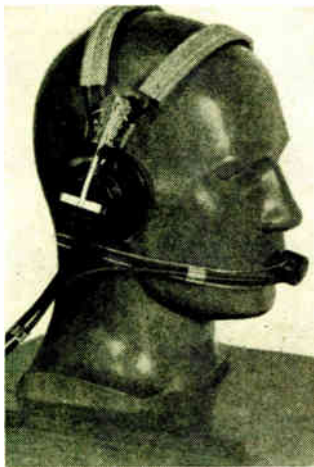
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1941. Of the twenty-two million sets to be produced, FM will account for approximately 1,800,000 sets. Tabulated figures follow:

Type of receiver	Manufacturers reporting production plans†	Production	Per Cent
AM band only.....	76	16,736,862	79.2
FM band only (88-108 Mc).....	8	86,286	.4
AM band, FM band (88-108 Mc)....	41	1,689,750	8.0
Televisionband only (Channels 1-13 incl.)	13	44,706	.2
AM band, FM band (88-108 Mc) Television band (Channels 1-13 incl.)	14	54,606	.3
Other			
AM band, Television band (Channels 1-13 incl.)	1	500	*
FM band, Television band (Channels 1-13 incl.)	1	500	*
Television (Channels 1-6 incl.)	1	4,000	*
AM band, Television band (Channels 1-6 incl.)	1	10,000	*
Miscellaneous	5	21,250	.1
Receiver Type Unspecified	7	2,481,300	11.7
Total Production of Receivers	85	21,129,760	100.0
FM adaptors	4	47,000	
FM converters.....	3	37,000	
Other	1	1,000	
Total		85,000	
Units supplied to others	2	90,000	
Units for export....	16	677,050	
Total for all receiver types		21,981,810	

*Less than one-tenth of 1%.

†The same manufacturer may be reported on more than one line.

Horni Reorganizes

Horni Signal Mfg. Corp., New York, has been reorganized and all operations have been concentrated in a newly acquired location at 421 West 54th Street, New York. The company manufactures selenium rectifiers, traffic control equipment, fire alarm systems, etc. Various locations formerly occupied by the company in New York and Newark, N. J., have been vacated.

Communication Adds

Communication Measurements Laboratory with headquarters at 120 Greenwich street, New York, has opened a Chicago office at 612 North Michigan Boulevard. Western headquarters will be in charge of A. A. Devine.



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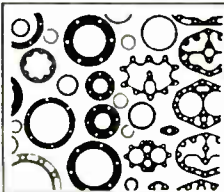
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Function of Ion-Trap In Cathode-Ray Tubes

Since the specifications of certain cathode-ray tubes mention an ion trap, the question arises: What is an ion trap and what does it do? The answer is now forthcoming from the engineers of Allen B. DuMont Laboratories.

"It will be recalled that certain prewar television cathode-ray tubes acquired large brown areas on their screens. These areas were caused by ion bombardment of the screens and were particularly prevalent in tubes employing electrostatic focus and magnetic deflection. The reason was that the cathode of any tube emits electrons and, unfortunately, also a small amount of ions. The ions are very much heavier than the electrons.

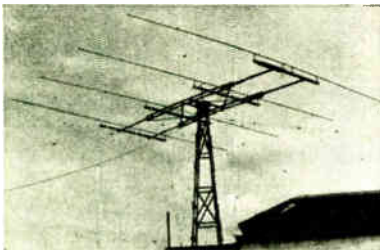
"In all electrostatic tubes the ions are deflected equally with the electrons, and thus there is no evidence of ion burns. In magnetic deflection tubes, however, the ions are not materially deflected with the electron beam. This permits the ions to hit the screen in a relatively small area at the center of the screen, with a resulting disintegration of the center area. This trouble is very serious in tubes having magnetic deflection and electrostatic focus since the ions are concentrated by the focus anode and beamed at the center of the tube in a small area at all times when the tube is in operation. With all-magnetic tubes the trouble is considerably less since ions are more widely dispersed.

"In order to eliminate burning of screens, an ion-trap gun has been developed and is used in certain DuMont tubes such as Type 10BP4. The ion trap functions by separating the ions from the electrons by means of combined electric and magnetic fields. Then, by means of an additional magnetic field, the electron beam is coaxially aligned in the gun so as to be centered in the focusing and deflecting systems as well as up on the screen. The magnetic fields used in this application are furnished by a small coil and lamination assembly that is placed over the neck of the tube behind the focus coil.

"In the case of the larger tubes—15-inch diameter and over—it has not been necessary to incorporate this ion trap since the dispersion of the ions is such that no ion disintegration of the screen is in evidence at the comparatively high (10-15kv) accelerating voltage normally used throughout the life of such tubes."

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Federal Starts Duplex Tower

Ground has been broken for the erection of the 300-foot microwave tower which will be an important part of Federal Telecommunication Laboratories at Nutley, N. J., which are operated by I.T.&T. and its subsidiary companies. In connection with the ceremonies some idea of the extensive use to which a tower of the kind may be put was outlined by Colonel Sosthenes Behn, I.T.&T. president.

The present plan is to use the tower for FM broadcasting, Pulse Time Modulation broadcasting, television in color and black and white, police radio networks, communication with mobile units, radar applications, aerial navigation and the interception of illegal transmissions.

It is pointed out that in a single tower there might be simultaneous operation involving 12 FM programs, 6 color television programs, 4 black and white television programs, 6 police networks for various districts, including multiple transmission to delivery trucks, trains, etc., as well as microwave transmission of long distance telephony and television.

Sylvania Tubes Made in England

Sylvania type radio tubes will be manufactured in Great Britain in large quantities by a newly formed company involving interests connected with A. C. Cossor Ltd., London, one of the largest manufacturers of radio and radar equipment in the British Empire. The new company will be known as Electronic Valves, Ltd. It will manufacture radio receiving, cathode ray and other types of electron tubes for British markets.

Biddle Moves

James C. Biddle Co., Philadelphia, henceforth will do business under a single roof at a new location at 1316 Arch Street. The company manufactures insulation testing instruments and vibrating-reed frequency meters and tachometers.

Locke Expands

The Locke Insulator Corp., Baltimore, has considerably enlarged manufacturing facilities. A new plant affording an additional 30,000 of working space was placed in production operation on May 1.

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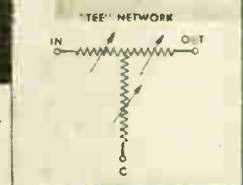
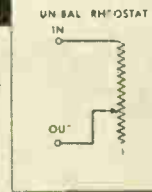
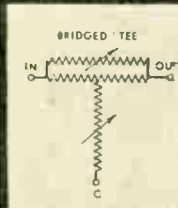
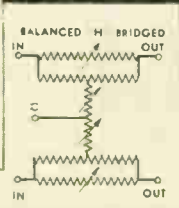
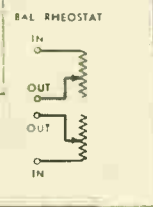
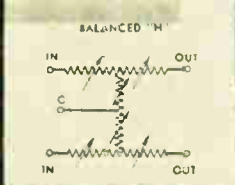
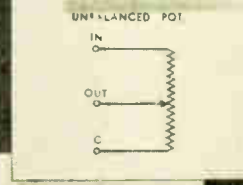
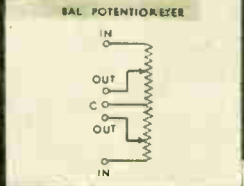
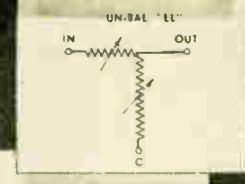
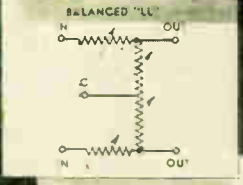
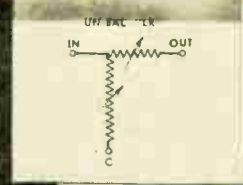
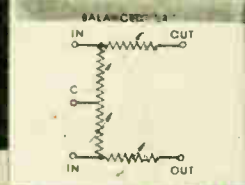
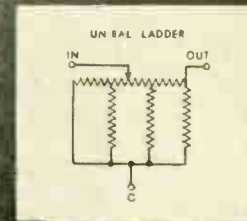
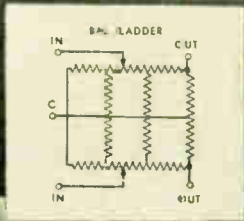
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BLUE SENSITIVE



RCA-1P21. Current amplification is 2,000,000. Has S-4 spectral response. Maximum response at 4200 Angstroms. The tube has extremely low dark current.

BLUE-GREEN-RED SENSITIVE



RCA-1P22. Current amplification is 200,000. Has S-8 spectral response. Maximum response at 4200 Angstroms. Range, approximately 3000 to 7500 Angstroms.

ULTRAVIOLET SENSITIVE



RCA-1P28. Current amplification is 200,000. Has S-5 spectral response. Maximum response at 2537 Angstroms. The tube has extremely low dark current.

RCA Multiplier Phototubes

For Measurement and Detection at Low Light Levels

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Because the photocurrent produced at the light-sensitive cathode is multiplied many times by secondary emission occurring at successive dynodes, multiplier phototubes are capable of multiplying feeble currents produced under weak illumination *hundreds of thousands of times*. The resultant output current is a *linear function* of the exciting illumination under normal operating conditions. Since secondary emission occurs almost instantaneously, *frequency response is flat up* to frequencies at which capacitance effects become the limiting factor.

The characteristics of the RCA-931-A Multiplier Phototube make it particularly suitable to light-operated

relay circuits, sound reproduction from films, facsimile transmission and scientific research. The extreme sensitivity of the RCA-1P21 suggests its use in scientific research involving exceedingly weak light radiation. The RCA-1P22 is especially useful in colorimetry and spectroscopy, sound-on-film applications and light-operated relay circuits. The RCA-1P28 is intended for specialized industrial and scientific applications involving weak ultraviolet radiation.

RCA tube application engineers are ready to assist you in the adaptation of these or any other RCA tube types to commercial, scientific, or industrial electronic equipment. Technical data sheets on the phototubes illustrated are available and may be obtained upon request. Address your inquiries to RCA, Commercial Engineering Department, Section D-7E, Harrison, N. J.

TWO NEW PHOTOTUBES WITH LOW-LOSS BASES

The RCA 1P39 and 1P40 phototubes are provided with non-hygroscopic bases which insure a value of resistance between anode and cathode pins about 10 times higher than conventional bases under adverse operating conditions of high humidity. As a result, more output for a given light input is obtainable under high-humidity conditions.

RCA-1P39 is a high-vacuum phototube similar to the 929. It has very high sensitivity to light sources predominating in blue-radiation, and has negligible sensitivity to infrared radiation. It is particularly adaptable to light-operated relay circuits, measurement, and color-control applications.



RCA-1P40 is a gas phototube similar to the 930. It has high response to red and near infrared radiation. Because of its high sensitivity, it is recommended for use in sound-on-film equipment, light-operated relays, and light-measurement devices employing an incandescent light source.

The Fountainhead of Modern Tube Development is RCA



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