

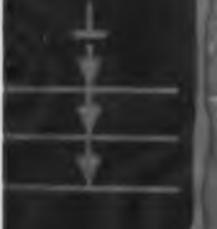
INDUSTRIAL ELECTRONICS



PLEASE PRINT NAME AND ADDRESS IN THIS SPACE



JUNE 1954



ELECTRONIC TECH



for critical voltage applications ...

RMC HIGH VOLTAGE DISCAPS



CAPACITY	DIELECTRIC	SIZE	AVAILABLE CAPACITY TOLERANCES	
2-KV				
331-470	1200-K	5/16"	+ 20%	GMV
471-1000	1200-K	3/8"	- 20%	GMV
1001-2700	HI K	5/16"		GMV
2701-5000	HI K	3/8"		GMV
5001-10000	HI K	3/4"		GMV
3-KV				
220-500	1200-K	5/16"	± 20%	GMV
501-1000	1200-K	3/8"	+ 20%	GMV
1001-5000	HI K	3/4"		GMV
4-KV				
181-680	1200-K	3/8"	- 20%	GMV
681-1000	HI K	3/4"		GMV
5-KV				
131-330	1200-K	5/16"	+ 20%	GMV
331-1000	HI K	3/8"		GMV
6-KV				
101-220	1200-K	3/4"	- 20%	GMV
221-470	1200-K	5/16"	- 20%	GMV
221-1000	HI K	3/8"		GMV
471-1000	HI K	3/4"		GMV

POWER FACTOR: 1.5% Max. (at 1 KC (initial))
INSULATION: Durez phenolic—vacuum waxed

Discaps with a dielectric of 1200 % or over are not recommended for deflection yokes or other 15,750 cycle applications.

HIGH VOLTAGE DISCAPS for yoke and other applications

RMC DISCAPS assure the voltage safety factor required in deflection yoke or special electronic applications. These RMC high voltage DISCAPS are rated at 2000, 3000, 4000, 5000, and 6000 volts DC.

Now available in any capacity between 5 MMF and 10000 MMF, their smaller size and lower initial cost offer definite production ease and overall savings.

If you want proof that DISCAPS are the outstanding ceramic capacitors write us about your specific requirements and we will forward samples.

CAPACITY	DIELECTRIC	SIZE	AVAILABLE CAPACITY TOLERANCES	
2-KV				
5-47	N-750	5/16"	5-10-20%	GMV
48-68	N-750	1/2"	5-10-20%	GMV
69-82	N-750	3/8"	5-10-20%	GMV
83-130	N-750	3/8"	5-10-20%	GMV
131-200	N-1500	3/8"	5-10-20%	GMV
201-250	N-1500	3/4"	5-10-20%	GMV
251-330	N-1500	7/8"	5-10-20%	GMV
3-KV				
5-15	N-750	5/16"	5-10-20%	GMV
16-20	N-750	1/2"	5-10-20%	GMV
21-56	N-1500	3/8"	5-10-20%	GMV
57-180	N-1500	3/8"	5-10-20%	GMV
181-240	N-1500	3/4"	5-10-20%	GMV
241-330	N-1500	7/8"	5-10-20%	GMV
4-KV				
5-68	N-1500	7/8"	5-10-20%	GMV
69-180	N-1500	7/8"	5-10-20%	GMV
5-KV				
5-30	N-1500	3/8"	5-10-20%	GMV
31-60	N-1500	3/4"	5-10-20%	GMV
61-130	N-1500	7/8"	5-10-20%	GMV
6-KV				
5-20	N-1500	3/4"	-10-20%	GMV
21-100	N-1500	7/8"	-10-20%	GMV

POWER FACTOR: .1% Max. (at 1 M C (initial))
INSULATION: Durez phenolic—vacuum waxed

DISCAP
CERAMIC
CAPACITORS



RADIO MATERIALS CORPORATION

GENERAL OFFICE: 3325 N. California Ave., Chicago 18, Ill.

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TELE-TECH & Electronic Industries

JUNE, 1954

FRONT COVER: GRAPHICAL SYMBOLS FOR ELECTRICAL DIAGRAMS—Symbols are an artistic representation of the complete new set of standards being issued jointly by the Institute of Radio Engineers (S4IRE21S1) and the American Standards Association (Y32.2—1954). A selected number have been taken from the new standards, including the symbols frequently used in microwave, audio, industrial electronic, radar, computer, broadcasting, r-f, control and similar applications, and are presented in Section Two of this issue, *Circuit Symbols*, No. 2 in the Electronic Industries Reference Library Series.

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SECTION TWO: CIRCUIT SYMBOLS

TELE-TECH & ELECTRONIC INDUSTRIES*, Vol. 13, No. 6. Published monthly by Caldwell-Clements, Inc. M. Clements, President; M. H. Newton, Assistant to President; John J. Borghi, Vice President and Secretary; Marguerite B. Clements, Treasurer. Acceptance under section 3464 Postal Laws and Regulations pending at Bristol, Conn. \$1.00 a copy. Annual Subscription Rates: United States and Possessions: \$7.00. Canada: \$8.00. All Other countries: \$10.00. Please give title, position and company connection when subscribing. Copyright by Caldwell-Clements, Inc., 1954. Printed in U.S.A.

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* Reg. U. S. Pat. Off.

Burnell TOROIDS and FILTERS

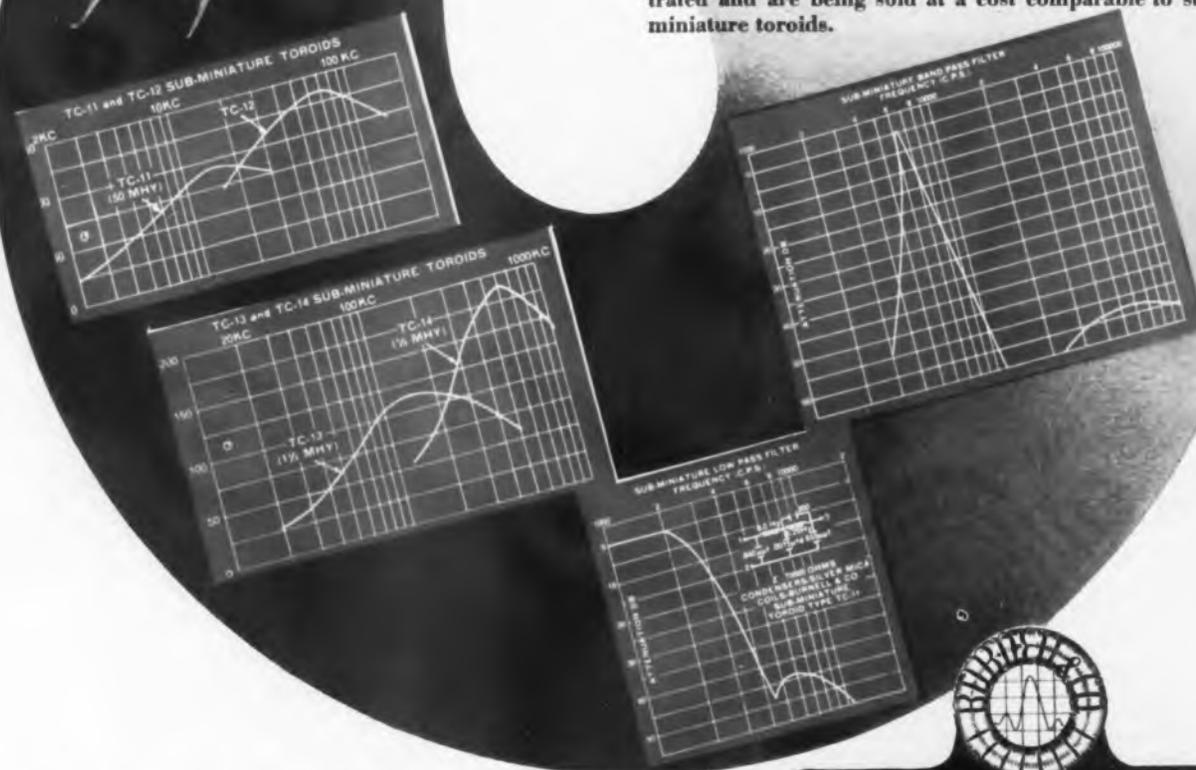
"SHRUNK to FIT"



Courtesy of Visart, Inc. Actual Size

Keeping ahead of the game is our specialty and with our newest sub-miniature line of toroidal filters and toroids in actual production, we are living up to our reputation for progressiveness.

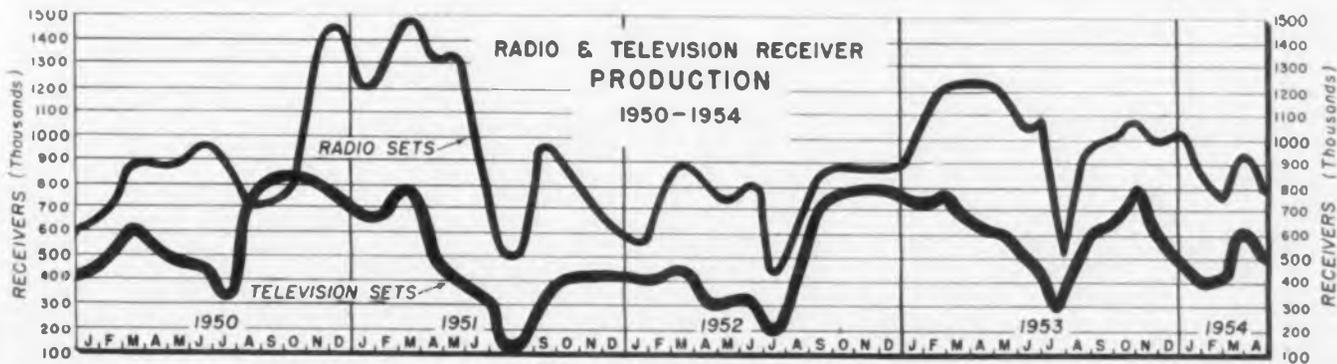
The tiny "cheerio" toroids are already being employed in filters small enough to hide with your thumb. Although the applications for these are myriad, the "cheerios" lend themselves perfectly to printed circuit applications as illustrated and are being sold at a cost comparable to standard miniature toroids.



Write for new and enlarged 16 page catalog 102A
Exclusive Manufacturers of Communications Network Components

Burnell & Co., Inc.
YONKERS 2, NEW YORK
CABLE ADDRESS "BURNELL"

2 For product information, use literature card on last page.



BROADCAST STATIONS IN U.S.

	AM	FM	TV	
Stations on Air	2537	533	257	VHF
Under Construction (CPS)	131	58	75	VHF / UHF
Applications Pending	188	7	219	VHF / UHF
				Comm'l. / Educ.

Estimated First Quarter Radio-TV Production

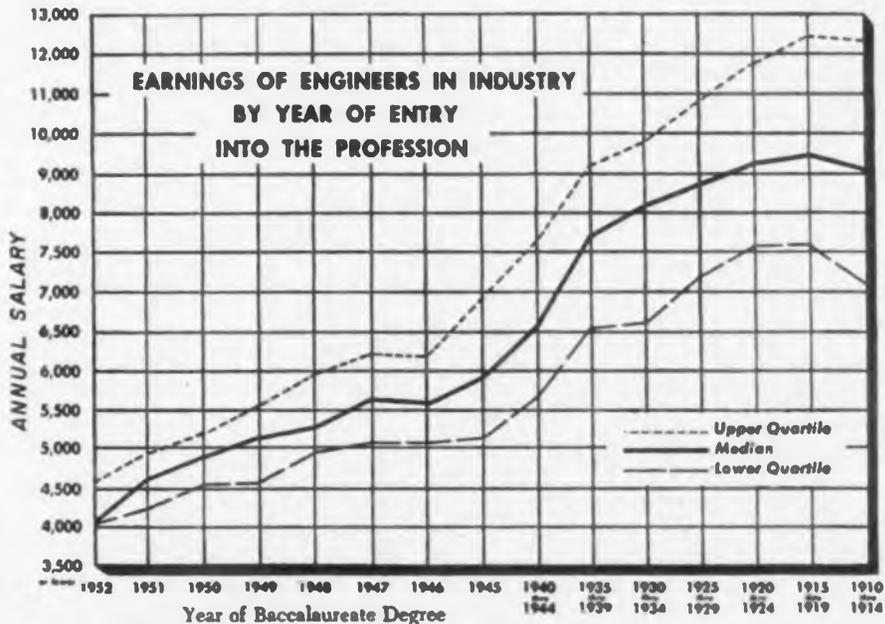
Item	Units
TV Sets	1,591,815
Home Radio	823,030
Portable Radios	386,076
Auto Radios	1,206,352
Clock Radios	424,228
Total Radios	2,839,565

Manufacturing Production Workers Earnings

Location	Avg. Wk. Ern.
United States	71.17
New York	71.04
New Jersey	74.27
Pennsylvania	70.88

(From U.S. Dept. Labor, Bur. of Labor Statistics, N.Y. Regional Office)

Interesting chart below is from new booklet entitled "Professional Income of Engineers-1953" compiled by the Engineers Joint Council 29 West 39 Street. Report contains information on income of about 72,000 engineers employed in industry, government and engineering education. It reportedly represents first comprehensive study on subject since 1947.



TOTAL NUMBER OF SALARY REPORTS — 295
TOTAL NUMBER OF ENGINEERS COVERED — 65,169
TOTAL NUMBER OF EMPLOYEES — 2,569,498

GOVERNMENT ELECTRONIC CONTRACT AWARDS

This list classifies and gives the value of electronic equipment selected from contracts awarded by government procurement agencies in April.

Ammeters	\$ 25,520	Cubicles and Control Panels	125,617	Regulators, Assys	52,734
Amplifiers	62,238	Dials, tuning	52,690	Regulators, voltage	92,965
Analyzers, spectrum	32,105	Fire Control Elements	16,525,074	Rotors	38,070
Anodes	25,110	Generators	3,345,997	Rotor Sub-Assys.	34,506
Antennas	66,203	Gunsights, cell	51,052	Shoran Trainer	1,199,345
Batteries	445,957	Harnesses, test bench	987,399	Solenoids	45,235
Boxes, electrical outlet	31,891	Kits, computer	517,237	Stabilizers, gyro	167,447
Cabinets, electrical equip.	30,950	Kits, potentiometer	51,976	Suppressors, electrical noise	115,760
Cable	310,165	Magneto Assys	31,082	Switchgear	277,000
Capacitors, variable	38,123	Meters, frequency	25,648	Telemetry Equipment	161,289
Coils, misc.	29,521	Motors	109,051	Telephone Sets	1,545,372
Computers, wind zone	74,423	Oscillographs	46,689	Terminals, telegraph	982,517
Computing Equip. electronic	30,520	Oscilloscopes	271,444	Testers	780,298
Connectors, plug	27,932	Panel Boards	30,181	Transformers	275,160
Connectors, receptacle	39,081	Plotting Boards	63,490	Transmitters, altitude	45,442
Contactors, circuitbreaker	214,907	Radiacimeters	36,995	Tuning Drives	151,875
Controllers, motor	124,545	Radiosondes	3,034,815	Tubes, electronic	1,414,167
Control Systems, gunfire	90,873,885	Radio Telephone Systems	421,040	Voltage connectors	49,183
Converters, image	264,471	Recorders	31,584	Wire	138,009
Crystal Units	875,749	Rectifiers	42,451	X-Ray Units	42,042

RAYTHEON

subminiature



HERE ARE MORE REASONS WHY RAYTHEON SUBMINIATURE TUBES ARE SO RELIABLE:

- ★ Additional Life Test Time
- ★ Large Test Samples
- ★ Higher AGC
- ★ Greater AGC
- ★ Median and Range Control of Actual Characteristics
- ★ 100% Air-tight Inspection
- ★ Guaranteed by Raytheon Performance
- ★ Narrower Tolerances
- ★ Low-temperature Operation from -55°C to +125°C

TEST

PLATE VOLTAGE MAXIMUM

PERMISSIBLE HEATER VOLTAGE RANGE

PLATE DISSIPATION

HIGH TEMPERATURE LIFE

1 HOUR STABILITY

100 HOUR SURVIVAL

HEATER CYCLING

MEDIAN CONTROLS

tubes have always been more

RELIABLE-

CHARTED ARE SOME OF THE ACTUAL MIL SPECIFICATION REQUIREMENTS OF PARTICULAR INTEREST TO THE READER. MANY OF THESE WERE PIONEERED BY RAYTHEON. COMPARE THE RAYTHEON TUBE DATA WITH THAT OF THE HEAVY COMPETITIVE TYPE, SHOWN IN RED.

A FEW TYPICAL RAYTHEON SUBMINIATURE TUBES

	CK5702WA	CK5703WA	CK5744WA	CK5784WA
RAYTHEON COMPETITIVE TYPE	200v 165v	275v 165v	275v 165v	200v 165v
RAYTHEON COMPETITIVE TYPE	±10% ± 5%	±10% ± 5%	±10% ± 5%	±10% ± 5%
RAYTHEON COMPETITIVE TYPE	1.85w 1.1w	3.3w 3.3w	1.6w 0.55w	1.85w 1.1w
RAYTHEON COMPETITIVE TYPE	200°C 175°C	200°C 175°C	200°C 175°C	200°C 175°C
RAYTHEON COMPETITIVE TYPE	YES YES	YES NO	YES NO	YES NO
RAYTHEON COMPETITIVE TYPE	YES YES	YES NO	YES NO	YES NO
RAYTHEON COMPETITIVE TYPE	7.5v 7.0v	7.5v 7.0v	7.5v 7.0v	7.5v 7.0v
RAYTHEON COMPETITIVE TYPE	YES YES	YES NO	YES NO	YES NO



RAYTHEON MANUFACTURING COMPANY

Raytheon Tube Division — Home Office: 35 Chestnut St., Woburn 23, Mass.
 For Application Information: Call Boston, Michigan 4-7300 • Chicago, MA 3000 2-2770 • New York, WH 4000 3-4760 • Los Angeles, TR 4000 7-4337

RAYTHEON MAKES ALL THESE:

RELIABLE SUBMINIATURE AND MINIATURE TUBES — SUPERCONDUCTIVE TUBES AND TRANSFORMERS — SHIELDING TUBES — WINDING TUBES — RECTIFIERS AND RECTIFIER TUBES



Edison Control Relay Amplifies Power 500,000 Times

New Edison Control Relay Amplifies Power 500,000 Times

Edison Control Relay Amplifies Power 500,000 Times

Control Relay Amplifies Power 500,000 Times

Relay Amplifies Power 500,000 Times

Amplifies Power 500,000 Times

Because there is an amplification factor of approximately 500,000 between the input power to the operating coils and the load capacity of its own contacts, Edison's Magnetic Control Relay actually eliminates the need for electronic boosting—operates *directly* from a thermocouple, photocell, or from vacuum tube currents. Yet this precision instrument stands up even under the shock and vibration of aircraft service.

Designed and developed in the world-famous Edison Laboratory, this small relay has features of particular interest to designer of electronic equipment.

Low power operation—Standard types operate at as low as 30 microamperes—do not drain

power from other circuit components, such as gyro motors.

Versatility—Coils can be supplied with resistances from 0.5 to 20,000 ohms. Differential operation is made possible by separate connections from each coil with polarized operation as an inherent characteristic.

Stability—Test relays have exceeded 8,000,000 cycles without calibration change.

Rugged Movement—Dissipates overloads up to 10,000 times normal operating input—withstands 50 g shock in all planes (unenergized).

Contacts—Platinum-iridium wire, either SPST or SPDT, with capacity of ½ ampere at 28 volts d.c.

Write us—especially if you are now using a single-stage electronic amplifier—for more complete information.

Thomas A Edison

A GREAT NAME CONTINUES GREAT NEW ACHIEVEMENTS

Thomas A. Edison, Inc.

INSTRUMENT DIVISION • 93 LAKESIDE AVENUE • WEST ORANGE, NEW JERSEY

6 For product information, use literature card on last page.

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MANUFACTURING

- Electronic equipment, communications, broadcasting, microwave relay, instrumentation, telemetering, computing.
- Military equipment including radar, sonar, guided missiles, fire controls.
- TV-FM-AM receivers, phonographs, recorders, reproducers.

OPERATION

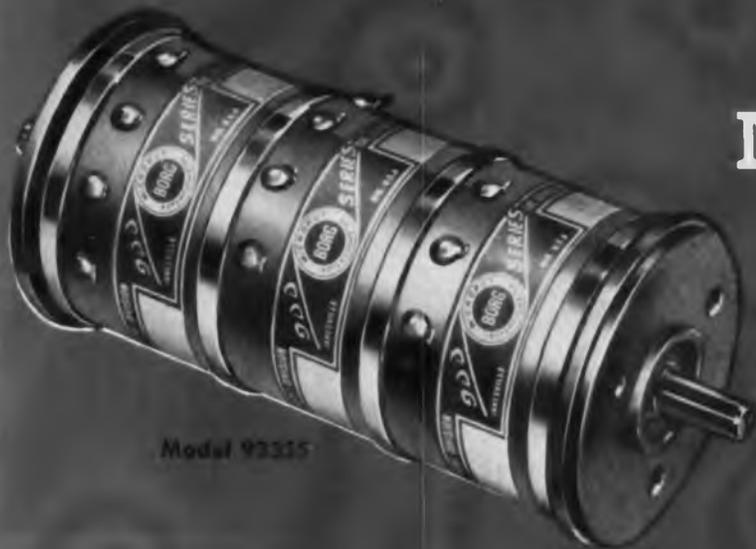
- Fixed, mobile and airborne communications in commercial, municipal, aviation and government services.
 - Broadcasting, video and audio recording, records, audio and sound systems, motion picture production.
 - Military, civilian and scientific electronic computing and control systems.
- *Reg. U. S. Pat. Off.

THE ELECTRONIC INDUSTRIES DIRECTORY

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BORG MICROPOTS

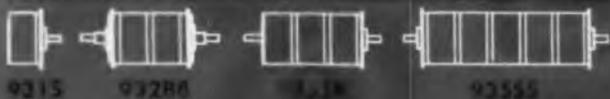
the
NEW STANDARD
of precision
multi-turn
potentiometers



Model 93315

BORG 900 SERIES 3-TURN AND 10-TURN MICROPOTS

3-TURN MODELS 931-935



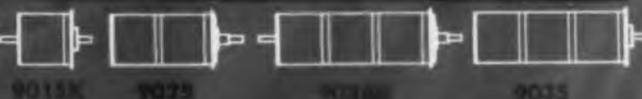
9315

93286

93555

93555

10-TURN MODELS 901-903



9015K

9025

9035

9035

Standard models of Borg 900 Series Micropots offer such flexibility that they meet special design needs. Borg has created a new standard for high-precision, multi-turn potentiometers.

Advantages of the Borg 900 Series include greater accuracy, finer resolution, lower torque, longer life, better performance under severe and excessive

vibration, greater adaptability and versatility of application.

Standard models include: 10-turn precision Micropots in 1 to 5 gang models; 3-turn in 1 to 5 gang models; single or double shafts; servo or bushing mounts on either or both ends. Available to designers and engineers in any quantity.

SYNCHRONOUS AND INDUCTION BORG-MOTORS

1000 SERIES 2 POLE AND 4 POLE MODELS With and Without Gear Trains

These Borg-Motors were designed specifically for instrumentation, control and timing devices. They are recommended for all applications where low torque, constant speed and long life are positive requirements.



ATTACH TO YOUR LETTERHEAD

For Complete Engineering Data



SERVO-CONTROL Borg-Motors

Two phase, 115 volt, 400 cps induction type Borg-Motors for servo control applications. Approximate size 1 1/2" diameter x 2" long with a locked rotor torque of 0.82 ounce-inch.

BORG EQUIPMENT DIVISION
THE GEORGE W. BORG CORPORATION
JANESVILLE, WISCONSIN

BORG EQUIPMENT DIVISION
THE GEORGE W. BORG CORPORATION
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NAME

TITLE

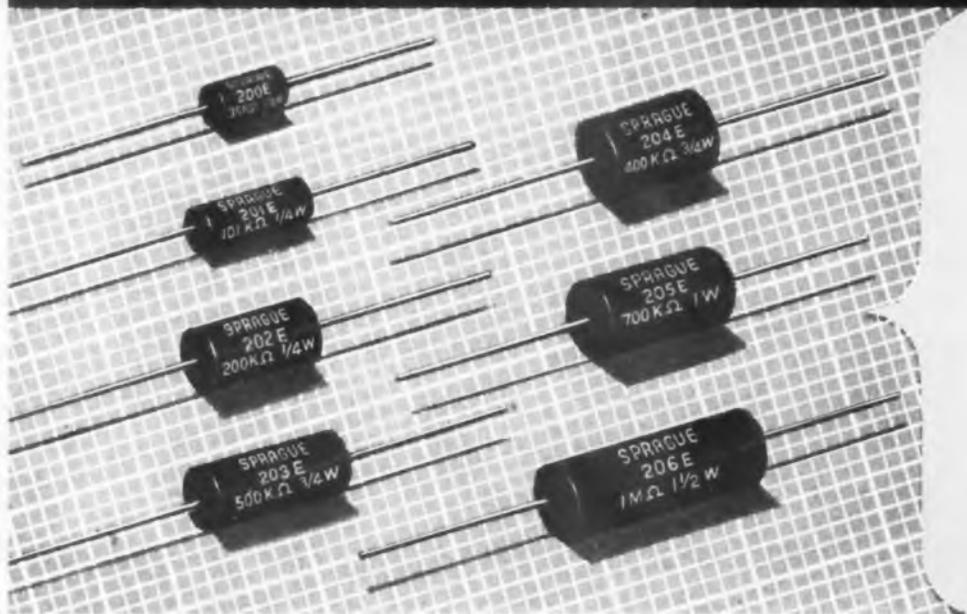
Please send complete information and engineering data on items checked.

- Precision Multi-Turn Potentiometers, 900 Series
- Borg Standard Potentiometer, 1100 Series
- Precision Multi-Turn Counting Dials
- Servo Control Motors
- Instrument Motors
- Frequency Standards
- Contract Manufacturing

PERMASEAL[®]

PRECISION RESISTORS

NOW! ENCAPSULATED AXIAL LEAD STYLES
FOR 85°C, 125°C and 150° AMBIENTS



85°C PERMASEAL[®] RESISTORS

SPRAGUE TYPE	D	L	SIZE	LEADS	RATED WATTS	MAX. OHMS
200E	1/4	1/2	No. 22 AWG	.20	140,000	
201E	1/4	3/4	No. 22 AWG	.33	225,000	
202E	1/4	3/4	No. 20 AWG	.50	500,000	
203E	3/4	1	No. 20 AWG	.75	700,000	
204E	1/2	3/4	No. 20 AWG	.75	1.2 MΩ	
205E	1/2	1	No. 20 AWG	1.00	1.7 MΩ	
206E	1/2	1 1/2	No. 20 AWG	1.50	2.8 MΩ	

125°C PERMASEAL[®] RESISTORS

SPRAGUE TYPE	D	L	SIZE	LEADS	RATED WATTS	MAX. OHMS
300E	1/4	1/2	No. 22 AWG	.10	140,000	
301E	1/4	3/4	No. 22 AWG	.15	225,000	
302E	1/4	3/4	No. 20 AWG	.25	500,000	
303E	3/4	1	No. 20 AWG	.30	700,000	
304E	1/2	3/4	No. 20 AWG	.30	1.2 MΩ	
305E	1/2	1	No. 20 AWG	.40	1.7 MΩ	
306E	1/2	1 1/2	No. 20 AWG	.40	2.8 MΩ	

PERMASEAL accurate wire-wound resistors are ideal for point-to-point wiring, for terminal board mounting and for use on processed wiring chassis.

Encapsulated for protection against high humidity, these resistors will stand up in military and industrial electronic service. The protective housing also guards against physical damage during installation and during equipment maintenance.

Standard designs are available in seven different physical sizes for operation at full rated watt-

age at ambient temperatures of 85°C and 125°C. Special units can be made for operation at 150°C ambient with full rated wattage dissipation.

Unusual long-term stability of resistance is another plus feature of Sprague PermaSeal Resistors—as the result of careful matching of winding forms, resistance wire and encapsulating material—together with a thoroughly controlled aging process during manufacture. PermaSeal Resistors are available in resistance tolerances down to 0.1%, when necessary.

SPRAGUE

FOR COMPLETE DATA, WRITE FOR COPY OF SPRAGUE ENGINEERING BULLETIN NO. 122, WITHOUT DELAY.

SPRAGUE ELECTRIC COMPANY,
233 Marshall Street, North Adams, Mass.



PIONEERS IN ELECTRIC AND ELECTRONIC DEVELOPMENT

NORTH ADAMS, MASSACHUSETTS

EXPORT FOR THE AMERICAS SPRAGUE ELECTRIC INTERNATIONAL LTD., NORTH ADAMS, MASS. CABLE SPREXINT



As We Go To Press...



High Speed Electronic Printer Revealed

A new automatic high speed printing and accounting machine capable of turning out 27,000 punched card paychecks an hour, handling in the process up to 108,000 punched cards, has been announced by John S. Coleman, president of Burroughs Corp. Operating at a speed of over 43,000 characters a minute, the new line of machines, called the Burroughs Series G, is the first business machine equipment in which printing and simultaneous high speed punching can be accomplished in a single operation.

Heat-Resistant Tube For Airborne Equipment

A rugged, hard-glass electron tube designed to withstand the high thermal environment and extreme stress conditions in aircraft has been developed by the Red Bank Div. of Bendix Aviation Corp.

The tube, which has an envelope of Nonex glass, will operate at a temperature of 572° F. for a minimum of 1000 hours.

New RETMA Color Service

A complete lecture program on color TV receivers for service technicians has been developed by the Radio-Electronic-Television Manufacturers Association. The lecture package, which includes text and slides, are being distributed to RETMA members across the country at a very nominal cost. It is the first industry-approved explanation of NTSC color, and is designed to establish a basic and uniform level of technical know-how from which individual manufacturers of receivers, components, test equipment and other products can plan their own technician training. Non-RETMA members and servicemen may obtain this lecture material from RETMA member companies.

New 19-in. Color TV Tube Announced

A significant decrease in the cost of color TV picture tubes was forecast by Dr. Allen B. Dumont as he revealed Dumont Labs newest development, the experimental 19-in. Chroma-Sync Teletron, commercial versions of which are expected to be available before the end of the year.



Component parts of Dumont 19 in. color tube.

An immediate savings in material cost of up to \$60 over similar types is already available with this new tube, Dr. Dumont pointed out. Production has not yet begun. The improved techniques which come with the actual manufacturing should drive the price down even further.

A number of significant improvements were pointed out. In the Chroma-Sync, the phosphor 3-color dots are deposited directly on the outside viewing screen. There is no exterior faceplate, nor is there the usual mask. The entire front screen is visible, as in conventional b & w tubes. Considerable material saving is attributed to the use of a lighter, curved shadow mask, which follows the contour of the viewing screen. Closer spacing of the electron guns, and improved grid structure have enabled Dumont to make this tube appreciably shorter than other color tubes of comparable size. The tube demonstrated presents a picture of 185 sq. in., or almost the equivalent of the b & w 19-in. tube.

Dumont also demonstrated their new "Color Multi-Scanner" which provides color from 16 mm. film. This equipment will make it possible for telecasters to have a wider range of color programming since a great many of the subjects already in film libraries can be utilized.

MULTI-OUTPUT COMPUTER FOR AIRCRAFT



Reflecting the growing interest in centralizing the multiplicity of airborne electronic functions, this True Airspeed and Mach Number Computer, developed by the Kollsman Instrument Corp., in conjunction with the Wright Air Development

Center, provides a single centralized unit to meet the requirements of airborne armament, photographic, meteorological, navigational and indicating systems for true airspeed and Mach number data.

MORE NEWS
on page 12



FIRST RCA 50 KW VHF



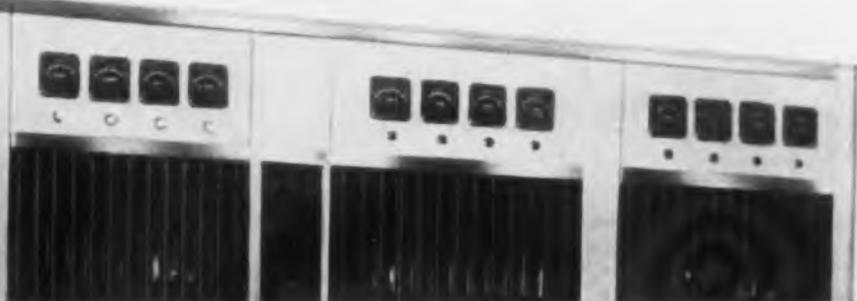
Type TT-50AH
RCA 50-kw VHF transmitters are in production!



RADIO CORPORATION of AMERICA
ENGINEERING PRODUCTS DIVISION
CAMDEN, N. J.

"NOW ON-AIR"

at WMIN-TV and WTCN-TV
Channel 11
Minneapolis-St. Paul



Here is the one high-power VHF transmitter that easily delivers a "full" 50 kilowatts of peak visual power . . . measured at the output of the side-band filter! And you get this full power output for monochrome—and for Color Operation!

The RCA TT-50AH is designed for the same conservative type of operation that has made RCA AM "Fifties" famous. It is the ultimate in high-power transmitters for channels 7 to 13. Operated in conjunction with an RCA 50-kw antenna (type TF-12BH) you can saturate your service area with strong signals. Even with antennas of medium gain, this transmitter develops Effective Radiated Power of 316 kw with power to spare!

Air-cooled throughout, the TT-50AH uses RCA-6166 high-gain tetrodes in both aural and visual "PA's" (RCA-6166 tetrodes are readily available from any RCA Tube Distributor). R-F amplifier and modulator circuits employ the very latest design principles which result in superior transmission fidelity.

Flexible mechanical design makes it convenient and practical to set up cabinets and power components in a variety of compact arrangements. Small size cabinets are moved in and out of standard elevators, doors, and hallways with ease.

For delivery information on the RCA 50-kw transmitter—call your RCA Broadcast Sales Representative.

RCA PIONEERED AND DEVELOPED COMPATIBLE COLOR TELEVISION

WMIN-TV and WTCN-TV PLANT . . .

. . . atop Foshay Tower Building in Minneapolis

The remarkable mechanical installation flexibility of the RCA 50-kw VHF makes it easy to set up in compact areas. Small-size cabinets can be moved in and out of standard elevators, doorways. Benefits: (1) You save floor space (2) You save on installation expense.



As We Go To Press . . . (Continued)

RELAY MANUFACTURE



The new home of C. P. Clare & Co., relay manufacturers, at 3101 W. Pratt Blvd., Chicago, was designed to eliminate the dust and dirt that cause the majority of electrical relay failures. Temperature and humidity controlled air is circulated through the plant after passing through a bank of self-cleaning electronic precipitators

ICAO Seeks Standardized Air Navigation System

At the recent 5th Session of the Communications Div. of the International Civil Aviation Organization in Montreal, Canada, the division made known its opinion that none of the long range navigation systems presently in use could be considered for world-wide standardization. However, to insure that any new installations would not be penalized unnecessarily by premature obsolescence in the event that the ICAO adopts a single system in the near future, they specified that any such installation, Loran or Consol, would not require replacement before 1964.

Hi-Fi Institute Created To Sift Audio Claims

The establishment of standards of measurement for all products connected with sound reproduction, is the first aim of the High Fidelity Institute, it was announced by Jerome J. Kahn, of Chicago, commissioner of the institute. Once these standards have been set up, they may be used by manufacturers to advertise the performance of their products, he said. When the claims of the manufacturers have been certified by a qualified independent testing laboratory, the High Fidelity Institute will issue its seal of approval, certifying the accuracy of the manufacturer's claims. The institute is operated on a non-profit basis from offices at 1 North LaSalle St., Chicago, Ill.

Improved "Chromatron" in Production

Chromatic TV Labs. has launched production of a new radiation-suppressed color tube. Details on p. 361.

FCC Approval Requested For Phonevision

Authorization to make experimental broadcasts of Zenith Radio Corporation's Phonevision system of subscription television, has been applied for by station WOR-TV, in N.Y., according to Gordon Gray, WOR-TV general manager, and Dr. A. Ellett, Zenith v.p.

If permission is forthcoming, the broadcasts will begin on May 31. Dr. Ellett said that the Phonevision system will be operated in N.Y. without the use of telephone lines, the decoding signal being broadcast over the air.

New England New Site For Weather Balloon Launching

Greiner Air Force Base, Manchester, N.H., recently became the launching site for "Moby Dick" high altitude weather balloons, it was announced by officials of the Air Force Cambridge Research Center, ARDC. The balloons, which carry research instruments to altitudes of 50,000 to 100,000 feet, were formerly launched from sites on the West Coast. The different wind conditions that exist during the summer influenced the change.

One balloon, recently released from Vernalis, Calif. reportedly set a speed record on its journey to Spain. It covered 6250 miles in 52½ hours, an average of 120 mph.

CD COMMUNICATIONS



Los Angeles gears for Civil Defense communications with the addition of three new trailer-mounted mobile communications centers. The 35 ft. Fruehauf trailer houses six G.E. transmitters and receivers with working space for station operators. The units, which cost approximately \$40,000, are linked to 36 fixed communications centers throughout the city. The entire system requires 17,800 persons

30th Anniversary of RETMA

The contribution of the RETMA Engineering Dept. in bringing about the orderly growth of the electronic industry through standardization of components was highlighted in a bulletin observing the 30th anniversary of RETMA. Tracing their activities over the past thirty years, RETMA also pointed out that they had sponsored the formation of two NTSC committees which had led to the standardization of b&w TV in 1941 and color TV in 1953.

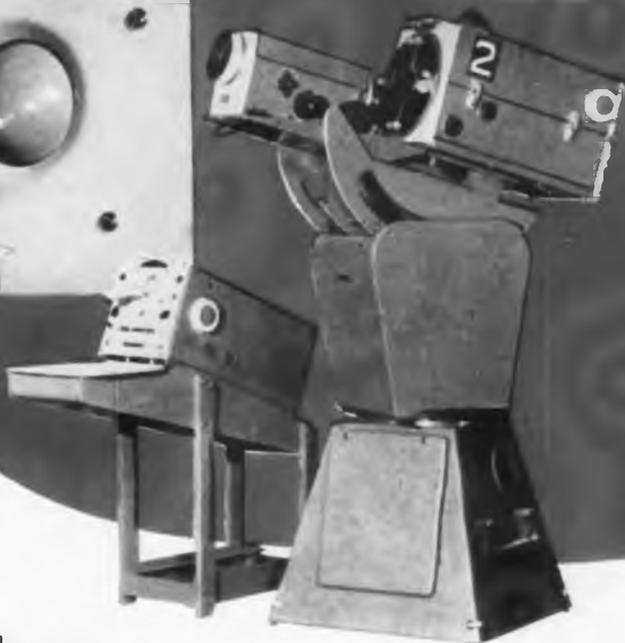
First TV for Colombia, S. A.

The first TV station in Bogota, Colombia, S.A., is scheduled to go on the air during June 1954. Some \$300,000 of DuMont broadcasting equipment is being used. Station architectural planning is by Dr. Walter J. Duschinsky of Raymond & Rado, New York. The Colombian government is expected to be the sole sponsor of the station, with emphasis on cultural programs.

**MORE NEWS
on page 18**



The REVOLUTIONARY NEW GPL PYE



REMOTE CONTROL CAMERA

**one hand does
the work of many...**

**USE the new GPL
one-hand camera
in studio or field**

Remote control pedestal can be operated from points 1,000 feet away from control center. Full pan, tilt, zoom, focus and iris. Set up and leave unattended for sports, conventions, parades, civic affairs.

Here is the new one-hand camera that makes possible one-camera shows with all the quality of two chains, yet *is operated by one hand from the control room.*

It's an image orthicon camera mounted on the remote control pan and tilt pedestal developed exclusively by GPL PYE. Added is the GPL-Watson Vari-Focus lens, with zoom in or out controlled by two buttons on the pan-tilt stick.

With one hand an operator can pan and tilt to follow action, can zoom in or out for extreme close-up or full stage shots. The same operator may handle audio, film or slide control, or switching.

No operator is needed on the studio floor. If you want protection, a stand-by chain can be kept hot with a capped lens in place. Open lenses can be brought instantly into action by remote control of the turret. This is a feature of GPL PYE cameras alone—all have remote control of focus, lens change and iris.

Ask For Cost Figures: GPL has worked out complete cost figures of what this camera can save you in operating expenses, interest, amortization and maintenance. Savings more than equal cost of added features, including the 3" to 30" lens (fully color corrected) and the pan and tilt pedestal. The camera puts money in your pocket the first month of operation.

Phone, wire or write for these figures... see how this new development can be used in your station operations.

**Write, wire or phone
for information on complete
television station equipment**



General Precision Laboratory

INCORPORATED

PLEASANTVILLE NEW YORK

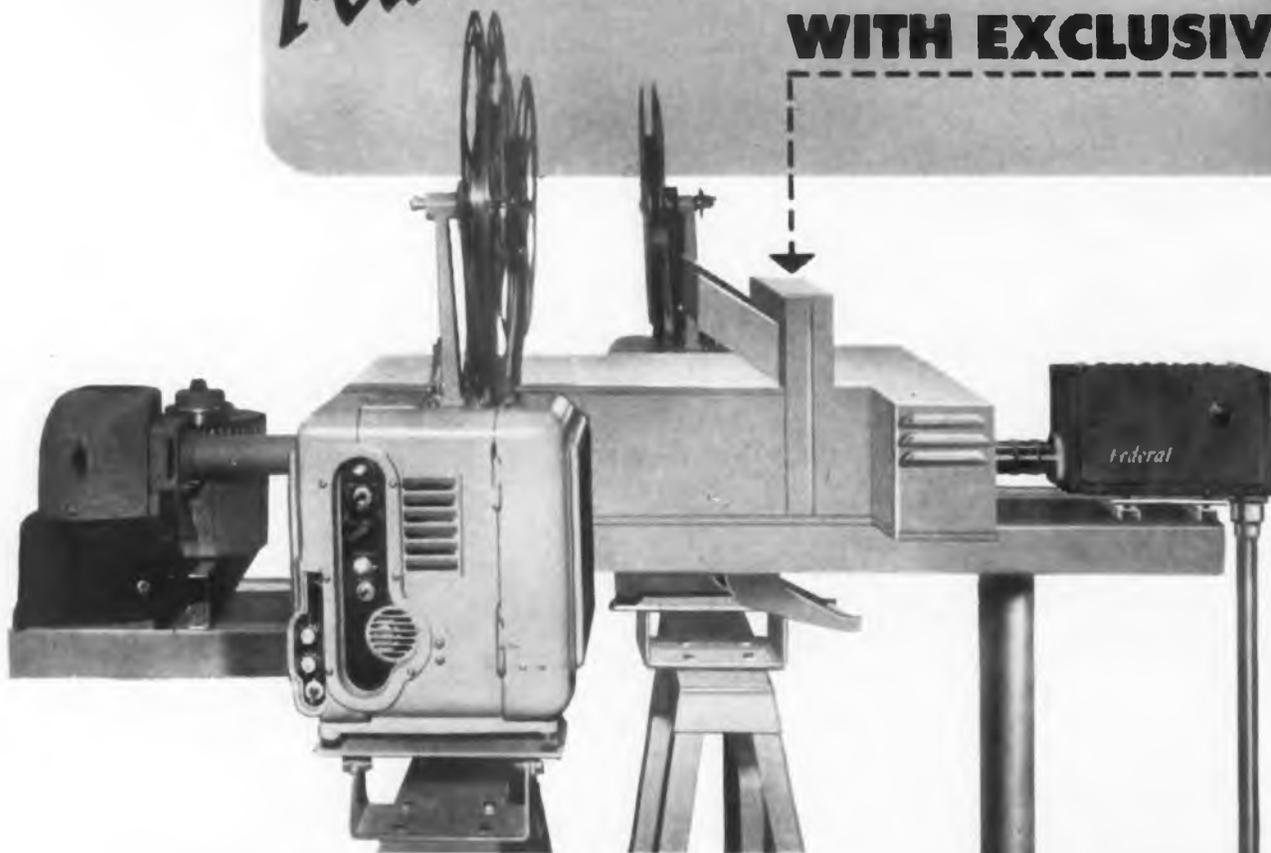
Regional Offices: Chicago • Atlanta • Dallas • Glendale, California

TELE-TECH & ELECTRONIC INDUSTRIES • June 1954

For product information, use literature card on last page. 13

Federal's NEW VIDICON

WITH EXCLUSIVE



Operational Features of the FTL-105A Film Camera Chain

- Only 3 basic units
- Minimum size and weight
- High definition—over 600 lines H. resolution
- Excellent contrast range
- 10 gray steps
- Full aperture correction
- Eliminates shading operator
- Smallest and lightest camera head—weighs 7.5 lbs.
- Control and Monitor in convenient operating console
- Rack-mounted low-voltage power supply

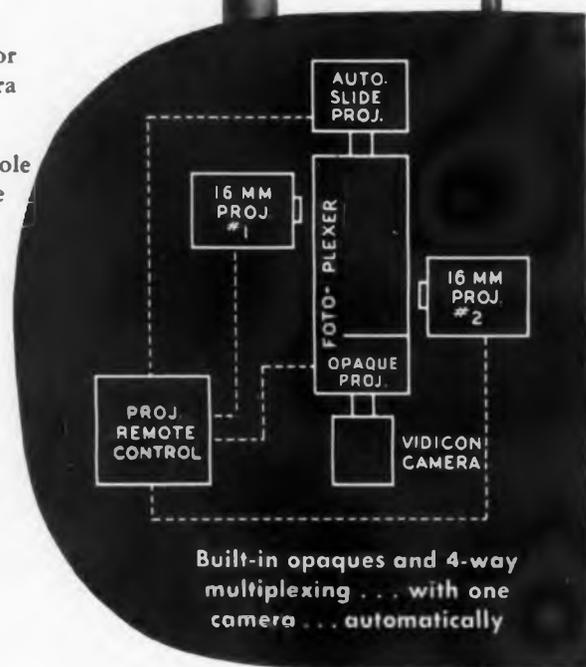
*Low in cost—outstanding
for economical operation!*

Federal's FTL-105A film camera chain equipment meets all requirements of film, studio and remote pickup . . . with universal portable units of exceptional efficiency and simplicity.

From camera head to power supply this equipment has been designed to deliver the finest in automatic facilities, smooth program continuity and dependable performance . . . at low initial and operating costs.

With the versatile Vidicon camera head the need of a shading operator is eliminated—and further economies are assured by a tube cost of less than 25¢ per hour. The expense of an external projector is eliminated by incorporation of the FTL-287A Foto-plexer with *built-in, automatically-controlled opaque projection*.

For all needs of modern multiplexing . . . for reliable remote and automatic control . . . for maximum economy and minimum maintenance . . . the FTL-105A Film Camera Chain is the logical buy for your TV dollar!



Built-in opaques and 4-way
multiplexing . . . with one
camera . . . automatically

*"Everything you need for TV—from
Federal—for VHF or UHF"*

FILM CAMERA CHAIN AND FOTO-PLEXER

Built-In OPAQUE PROJECTION

FTL-105A Film Camera Chain designed for unattended operation of 2 film projectors, slides and opaques . . . all remotely and automatically controlled!

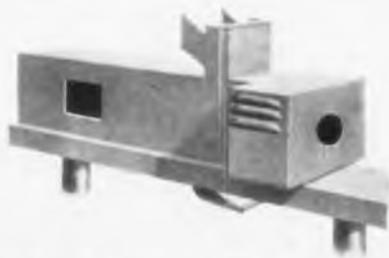
Federal's new Vidicon film camera chain brings to the television industry the latest developments in equipment for the highest quality broadcast studio operation. It is not an ITV unit.

Here is equipment of superior design and performance, assuring you the speed, versatility, dependability and operating economy essential to today's wide range of telecasting requirements.

The Federal Vidicon film camera chain consists of only *three* basic units: a camera head, a compact and remarkably efficient control and monitor sec-

tion, and a low voltage power supply.

These basic units, in conjunction with Federal's unique Foto-plexer—with *built-in opaque projection*—and Federal's Projector Control Panel, permit the automatic multiplexing of images from two 16mm/35mm film projectors, slides and opaques into a single camera head . . . providing an extremely flexible combination. At all times, pre-viewing of upcoming film, slides and opaques is easily accomplished. True unattended operation results with this remotely controlled group.



FTL-287A Foto-plexer: Multiplexes light images from two film projectors (16 mm/35 mm), 2" x 2" slides and 4" x 5" opaques into a single camera head. Provides ultimate in operating smoothness. Built-in opaque projector holds 15 cards—changed remotely by push-button from the console-mounted Projector Control Panel.



FTL-277A Vidicon Camera Head: Lightest and most compact unit of its kind. Weighs only 7.5 lbs. Exceptionally portable. Uses modern photo-conductive tube, providing high signal-to-noise ratio, excellent contrast range and fine color definition. Tube operating cost is less than 25¢ per hour.



FTL-278A Camera Control and Monitor: Mounts in handsome console section (13.5-16" wide). The FTL-271A Projector Control Panel is shown on the right of the FTL-278A. Camera control and monitor provides 10" picture and 5" waveform. Simplified panel permits one operator to fully control two film projectors, automatic slide projector and opaque projector. Weighs 60 lbs.



FTL-279A Low Voltage Power Supply: Mounts in 14" height in standard rack cabinet. Employs long-life selenium rectifiers. Low heat dissipation and unusually light weight are features of this equipment. Weighs only 40 lbs.

Your nearest Graybar office will be glad to give you complete technical information.

Federal Telecommunication Laboratories



TELEVISION BRANCH

ROUTE 17, LODI, N. J.

Main Office: 500 Washington Avenue, Nutley, N. J.

In Canada: Federal Electric Manufacturing Company, Ltd., Montreal, P. Q.
Export Distributors: International Standard Electric Corp., 67 Broad St., N. Y.



Federal's FTL-100B 12.5 KW UHF TV AMPLIFIER

DESIGNED TO PROVIDE HIGH POWER OVER
THE ENTIRE UHF BAND—CHANNELS 14-83



View of FTL-100B Cabinet, showing cavities and magnet structure designed for rapid tube change.

The FTL-100B Features:

- Broad Band Circuits
- Excellent Linearity
- Low Noise—no critical adjustments
- 5-Minute Tube Change
- Silent, Efficient Water-cooling
- Remarkably Rugged Construction
- Small Space Requirements

The FTL-100B utilizes rugged circuitry that is easily adjusted for optimum performance . . . easily maintained in operation. There is no critical tuning . . . no compensation of one circuit for the deficiencies of another.

All amplifier circuits have been designed for wide band operation.

The amplifier uses a 3K50,000 Klystron amplifier tube, with ceramic-copper seals for sturdy construction. Heavy-duty, silver-plated cavity parts insure circuits of high efficiency and stability. Tube changes can be made in less than five minutes.

Efficient water-cooling keeps tubes cool . . . can be handled as soon as anode power is off. Distilled water is not required.

Space requirements of the FTL-100B amplifier are small. Amplifiers require one standard bay each for aural and visual units — each bay 33" deep x 66" long x 83" high. These bays house all power supplies for Klystron focusing magnets and all associated controls. Plate power rectifier units are of the fireproof, sealed-in-oil type. The latter are mounted in a power vault approximately 6' x 10' x 8', which need not be fireproof.

Details of floor plans are best determined by examination of the customer's requirements.

Your nearest Graybar office will be glad to give you complete technical information.



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Federal's FTL-97-98B

25 KW VHF TV AMPLIFIER

WITH ANTENNA GAINS OF 16, 316 KW OF ERP
CAN EASILY BE ATTAINED ON CHANNELS 7-13



View of FTL-97-98B showing visual amplifier bay, with view of high-power amplifier cavity circuit.

The FTL-97-98B Features:

- Broad Band Circuits
- High-grade Color-Signal Performance
- Excellent Linearity
- Remarkable Black Level Efficiency
- Quiet, Dependable Water-cooling
- Small Space Requirements
- Rugged Construction

The FTL-97-98B is designed to be driven by any standard 5 KW VHF television transmitter. Used in conjunction with an antenna system with a gain of five or more it will provide ERP in excess of 100 KW on the low channels; with gains of 16, 316 KW of ERP on channels 7-13.

The unit utilizes a stable grounded-grid-screen type circuit with a rated power gain of 8½. Output is double-tuned with a single control. The 10 mc band width is more than adequate for color TV.

All circuits of the transmitter are metered; currents and voltages are indicated on front panel. Complete monitoring facilities for all RF portions of the circuit are presented by reflectometers.

The FTL-97-98B uses a single water-cooled tetrode type 4W20,000. Excellent heater life is assured by a bombarder type of cathode. Ceramic-copper tube seals are used for tube strength; heavy bronze castings for critical circuit parts.

Space requirements are small. Amplifiers require one standard bay each for aural and visual units—each bay 33" deep x 66" long x 83" high. Plate power rectifier units are of the fireproof, sealed-in-oil type. The latter are mounted in a power vault approximately 6' x 10' x 8', which need not be fireproof.

Details of floor plans are best determined by examination of the customer's requirements.

Your nearest Graybar office will be glad to give you complete technical information.



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Stud Welding Aids Color TV Tube Assembly

Development engineers of both Corning Glass Works and the Kimble Glass Co. have turned to the stud welding gun as the best available means of installing the color screen assembly in color TV picture tubes.



End welded studs installed on flange of tube simplify alignment of shadow mask and screen

This was disclosed by the Nelson Stud Welding Div. of Gregory Industries, Inc. recently as they exhibited sample color TV tubes in Philadelphia, as examples of the work done by their equipment.

Plans for TV Camera Tube Production Disclosed

The establishment of a camera tube project at the GE Tube Dept., Schenectady, N.Y., as the first step toward the production of image orthicons and vidicons for TV cameras, was announced by J. Milton Lang, general manager. Commercial production of the tubes is scheduled for 1955.

It Can Happen Here!

One of the off-moment discussions at a recent engineering meeting, we think is worthy of summary: What would happen if the electronic industry was suddenly to pattern its modus operandi after the free enterprise system of the automotive industry; i.e., each organization to do business on the basis of its own engineering merits, with no licensing or cross-licensing agreements with other organizations. What would happen to engineering standards; to engineering employment? Which organizations would survive or fail under such a system? Would there have to be a patent pool?

We grant that there'd be many more patent law suits, but interestingly, this topic isn't just speculation. It can happen!

COMING EVENTS

June 7-10—National Plastics Exposition, sponsored by the Society of the Plastics Industry, Inc., Public Auditorium, Cleveland, Ohio.

June 9-11—Eighth Annual Convention American Society for Quality Control, St. Louis, Mo.

June 13-18—ASTM Annual Meeting, 11th Exhibit of Testing and Scientific Apparatus and Laboratory Supplies and Ninth Technical Photographic Exhibit, Sherman and Morrison Hotels, Chicago, Ill.

June 15-17—RETMA Convention, Palmer House, Chicago, Ill.

June 16-18—High Vacuum Symposium, Berkeley Carteret Hotel, Asbury Park, N.J.

June 21-25—AIEE Summer General and Pacific Meeting, Hotel Biltmore, Los Angeles, Calif.

June 24-25—1954 International Convention 50th Anniversary of Oxide Coated Cathodes, 44 Rue de Rennes, Paris, France.

July 6-9—International Conference on Electron Microscopy, Joint Commission on Electron Microscopy of International Council of Scientific Unions, London, England

July 8-12—Convention British Institution of Radio Engineers, Christ Church, Oxford, England.

July 13-15—Plant Maintenance Show, Pan Pacific Auditorium, Los Angeles, Calif.

July 21-28—3rd International Crystallographic Congress, at the Sorbonne, Paris, France.

Aug. 25-27—Western Electronic Show and Convention. Los Angeles and San Francisco IRE sections and WCEMA sponsored. (Show) Pan-Pacific Auditorium, Los Angeles. (Convention Hq.) Ambassador Hotel, Los Angeles, Calif.

September—First International Scientific Radio Union, Amsterdam, Holland.

Sept. 1-16—Golden Jubilee Meeting of the International Electrotechnical Commission, University of Pennsylvania, Philadelphia, Pa.

Sept. 5-9—International Frankfort Fair, Frankfort, Germany.

Sept. 15-17—IRE-MIT Symposium on the Information Theory, co-sponsored by the AIEE and URSI, Massachusetts Institute of Technology, Cambridge, Mass.

Sept. 15-21—ISA First International Instrument Exposition, Convention Hall, Philadelphia, Pa.

Sept. 16-18—Joint Electron Tube Engineering Council General Conference, Chalfont-Haddon Hall, Atlantic City, N. J.

Sept. 30-Oct. 2—High Fidelity Show, International Sight and Sound Exposition, Inc., Palmer House, Chicago.

Oct. 4-6—Tenth Annual National Electronics Conference, Hotel Sherman, Chicago, Ill.

Oct. 11-15—AIEE Fall General Meeting, Morrison Hotel, Chicago, Ill.

Oct. 18-20—RETMA Radio Fall Meeting, Hotel Syracuse, Syracuse, N. Y.

Oct. 18-22—42nd National Safety Congress and Exposition, Conrad Hilton, Congress, Morrison and La Salle Hotels, Chicago, Ill.

Nov. 4-5—East Coast Conference on Airborne and Navigational Electronics, sponsored by the Baltimore section of IRE and IRE Professional Group on Aeronautical and Navigational Electronics. Sheraton-Belvedere Hotel, Baltimore, Md.

Nov. 10-11—AIEE Conference on Electronic Instrumentation and Nucleonics in Medicine, Morrison Hotel, Chicago, Ill.

Nov. 18-19—6th Annual Electronics Conference, sponsored by the Kansas City Section of IRE, Hotel President, Kansas City, Mo.

Nov. 29-Dec. 4—First International Automation Exposition, 242nd Coast Artillery Armory, New York, N. Y.

ACM: Assoc. for Computing Machines.
AES: Audio Engineering Society.
AIEE: American Institute of Electrical Engineers.
ASTM: American Society for Testing Materials.
IRE: Institute of Radio Engineers.
ISA: Instrument Society of America.
NACE: National Assoc. Corrosion Engineers.
NARTB: National Assoc. of Radio and TV Broadcasters.
RETMA: Radio-Electronics-TV Manufacturers Assoc.
WCEMA: West Coast Electronics Manufacturer's Association.
WESCON: Western Electronics Show & Convention.

Eleven TV Stations Join Bell Network

The Bell Telephone System announces the connection of eleven new stations to their nationwide TV network: WJHL-TV, Johnson City, Tenn.; WAIM-TV, Anderson, S.C.; KOOL-TV and KOY-TV, Phoenix, Arizona; KARK-TV, Little Rock, Ark.; KWWL-TV, Waterloo, Iowa; KVAL-TV, Eugene, Ore.; WNET, Providence, R.I.; WDEF-TV, Chattanooga, Tenn.; WHO-TV, Des Moines, Ia., and WSEE-TV, Erie, Pa. the Bell System's network facilities are now available to 295 stations in 187 cities in the U.S.

Reliable AC-DC Operation By Standardizing Tubes

Savings in the cost, weight and size of TV receivers is possible with the standardization of TV tube complements, according to Dorman D. Israel, exec. vice-pres. of Emerson Radio and Phonograph Corp. The reference was to the elimination of the power transformer, as it was achieved in radio manufacturing, and Emerson's role in the development. Mr. Israel pointed out that this is possible only when a basis for producing uniform tubes is available.

MORE NEWS on page 26





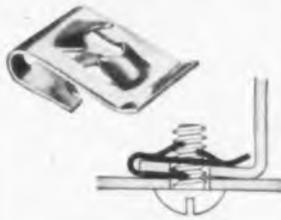
FLAT TYPE

One-piece self-locking spring steel fasteners. Replace threaded nuts, lock washers or spanner washers. Available in a wide variety of shapes and screw sizes.



PUSH-ON

Zip over unthreaded die cast or plastic studs, rivets, nails, tubing, or wire to lock parts securely. Removable types available in many sizes.



"J" TYPE

Snap over edge of panels and into center hole locations. Hold themselves in place for blind assembly. Full range of panel thicknesses and screw sizes available.



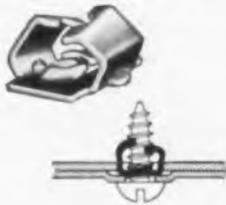
"U" TYPE

Perform same function as "J" type for reduced materials handling. Used where full bearing on lower leg of the SPEED NUT is required.



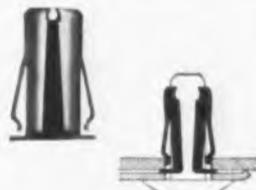
LATCH TYPE

Easily applied by hand, are self-retained in bolt-receiving position at center panel locations for blind attachments. Front mounting types are also available.



EXPANSION TYPE

For lightning-fast attachments in blind locations. Snap into mounting holes by hand. Screw spreads spring fingers, wedge-locks part in position. Secure, vibration-proof attachment.



TUBULAR CLIPS

For use with unthreaded studs or rivets. Virtually "nails" panels together where there is access to one side only. Permanent lock or removable types.



CABLE, WIRE, AND TUBE RETAINERS

Snap in place by hand, self-retained in position to receive wide range of cable, wire and tube sizes. Easily removed for service or re-location.



HARNESS CLAMPS

Open or close by hand — no tools needed. Attach to panel or pre-assemble to harness before installation. Cushioned to protect wires. Cannot open accidentally.



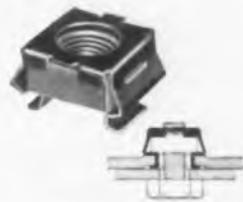
ANGLE BRACKETS

Combine bracket and fastener to reduce number of parts, speed up assembly and strengthen the structure. Variety of shapes and sizes.



HOSE CLAMPS

Self-locking, ratchet-type design, one-piece low profile construction — no bolts, nuts or thumb screws. Fast and easy to apply and remove for medium- and low-pressure connections.



NUT RETAINERS

Retain square nuts in blind locations. No welding, clinching, staking — snap in by hand. Provided in a wide range of screw sizes. "U" and "J" type retainers available.



Engineer Savings into your products with SPEED NUTS® — The Fastest Thing in Fastenings!™

Assembly cost savings from 30% to 75% . . . increased product quality . . . reduced materials handling . . . far less field service problems. These are a few of the reasons why more and more manufacturers are specifying SPEED NUT brand fasteners. Write today for your copy of "Savings Stories" — a

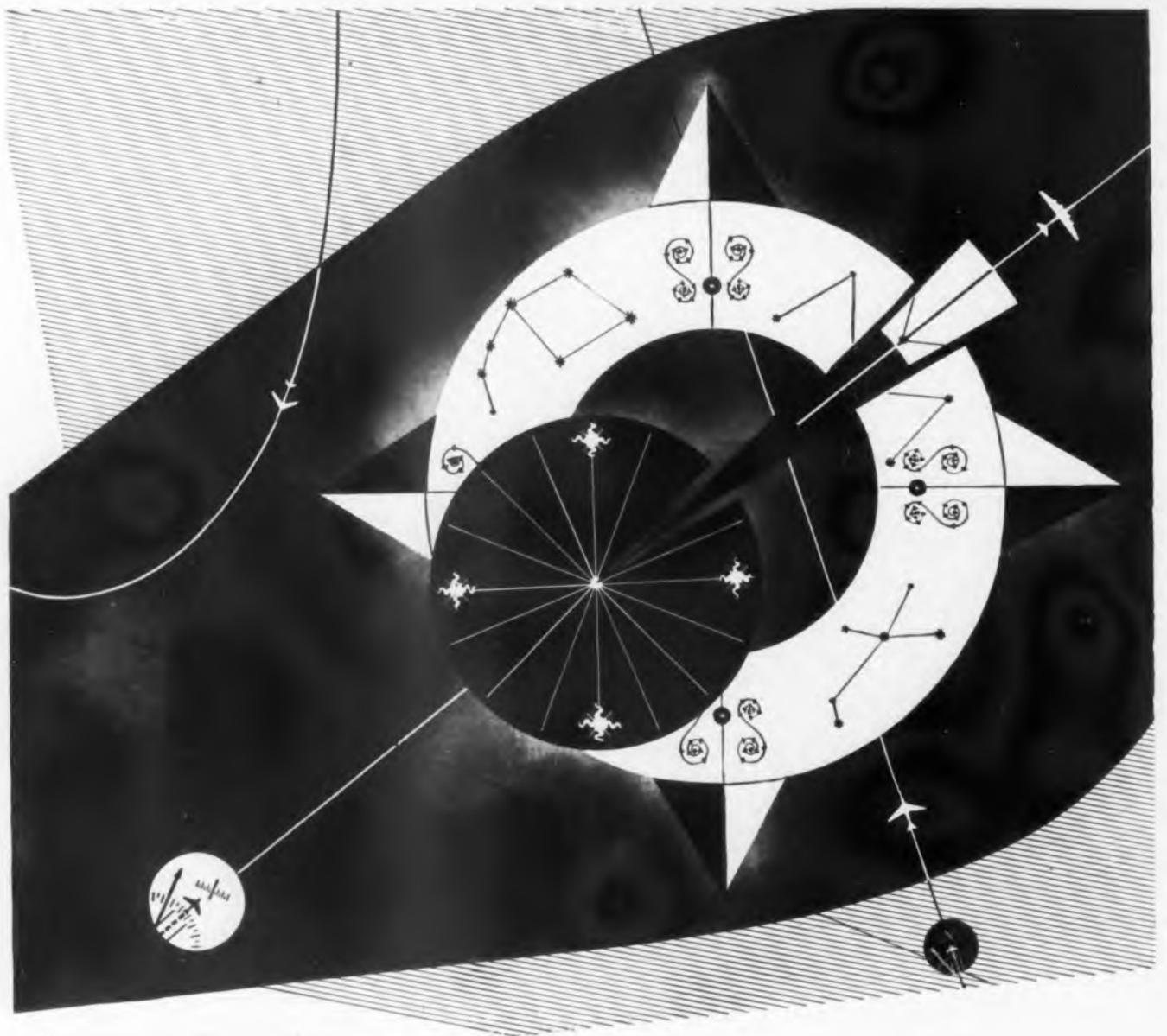
book full of cost-saving fastening reports. **TINNERMAN PRODUCTS, INC.**, Box 6688, Cleveland 1, Ohio. *In Canada:* Dominion Fasteners Ltd., Hamilton, Ontario. *In Great Britain:* Simmonds Aerocessories, Ltd., Treforest, Wales. *In France:* Aerocessaires Simmonds, S. A., 7 rue Henri Barbusse, Levallois (Seine).

TINNERMAN

Speed Nuts®

MORE THAN 8000 SHAPES AND SIZES





The ancients marked time by sun dial and by earth-bound sightings of the zodiac. Today we check the same sun . . . the same constellations, sight Pole Star or Southern Cross, but now we observe them as we fly in space . . . safe in time and place, with Kollsman instruments.

seconds to spare

Degrees, minutes, seconds . . . and to spare. The accurate measurement and instant integration of Kollsman instruments gives seconds to spare — where seconds count.

Count on Kollsman for —

**AIRCRAFT INSTRUMENTS AND CONTROLS
OPTICAL PARTS AND DEVICES
MINIATURE AC MOTORS
RADIO COMMUNICATIONS AND NAVIGATION EQUIPMENT**

Our manufacturing and research facilities . . . our skills and talents, are available to those seeking solutions to instrumentation and control problems.


kollsman INSTRUMENT CORP.

ELMHURST, NEW YORK • GLENDALE, CALIFORNIA • SUBSIDIARY OF *Standard* COIL PRODUCTS CO. INC.

STILL LEADING THE BIG

Electronics Parade!

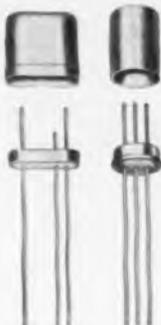
E-I

HERMETICALLY-SEALED

miniature closures

—FOR TRANSISTORS AND OTHER COMPONENTS

NO. 1 SERIES NO. 3 SERIES



TRANSISTOR CLOSURES

(SHOWN ACTUAL SIZE)

WRITE FOR THESE CATALOGS

- **BULLETIN 949-A** On hermetically sealed terminals. Discusses cushioned glass construction, thermal shock resistance, preferred types and special terminals.
- **BULLETIN 950-A** On hermetically sealed multiple headers. Explains vacuum tight feature, cushioned glass construction, strain-free qualities.
- **BULLETIN 951** With complete information on octal type plug-in and multiple headers. Solid metal blanks insure maximum mechanical strength and rigidity.
- **BULLETIN 952** Complete information on E-I and seals for hermetic sealing condensers, resistors and other tubular electronic and electrical components.
- **BULLETIN 953** Individual, color-coded hermetically sealed terminals. Available with glass inserts colored in standard, easily identified RMA color codes.

- **BULLETIN 960** Compression type multiple headers. Super rugged, absolutely rigid and practically indestructible. Guaranteed vacuum-tight.

New EI Miniature Closures can be supplied in various standard types or economically produced to your exact specifications for all electrical and electronic applications. The EI closure types illustrated are typical examples of the many miniature designs now in production. Cases can be supplied in round, rectangular or square shapes with hermetically sealed terminations to your order.

FOR COMPLETE DATA AND PRICES ON SPECIFIC TYPES OF MINIATURE CLOSURES, CALL OR WRITE,

twice actual size

*PATENT PENDING ALL RIGHTS RESERVED

DIVISION OF AMPEREX ELECTRONICS CORPORATION



ELECTRICAL INDUSTRIES

44 SUMMER AVENUE, NEWARK 4, NEW JERSEY

EXPORT AGENTS: PHILIPS EXPORT CORP., 100 EAST 42nd STREET, NEW YORK 17, N. Y.



GERMANIUM PRODUCTS

The complete General Electric line for use in electronic and electrical power circuits requiring

DETECTION . . . RECTIFICATION . . . AMPLIFICATION!

CATEGORY	KEY	RETMA DESIGNATION	G-E TYPE	PEAK INVERSE VOLTAGE	CONTINUOUS OPFR. INV. VOLTAGE	MIN. FORWARD CURRENT (mA) AT +1V	MAX. INV. CURRENT (μA) AT -50V	AVERAGE RECTIFIED CURRENT (mA)	PEAK RECTIFIED CURRENT (mA)	SURGE CURRENT (AMP)
GENERAL PURPOSE	A	1N48	G5	85	70	4.0	833	50	150	400
		1N51	G5C	50	40	2.5	1667	25	100	300
		1N52	G5D	85	70	4.0	150	50	150	400
		1N63	G5E	125	100	2.5	50	50	150	400
		1N65	G5G	85	70	2.5	200	50	150	400
		1N75	G5M	125	100	2.5	50	50	150	400
TV	A	1N64	G5F	20	Min. dc current in 44 mc rectifier—100 μa					
JAN (Ceramic case)	B	1N69	G5K	75	60	5.0	850	40	125	400
		1N70	G5L	125	100	3.0	300	30	90	350
		1N81	G5P	50	40	3.0	10(±)—10v	30	90	350
VHF	A	G6	15	Min. Rect. Eff. at 100 mc and 2 v signal—60%						
UHF	A	1N72	G7	+3 db max. noise factor over 1N21B in 500 mc mixer CKT		25	75			
		G7A			25	75				
		G7B	5	75% min. rect. eff. at 100 mc for detector		25	75			
		G7C	5			25	75			
		G7D	5	Tested for sharpness of break E-1 char. for freq. Multiplier		25	75			
		G7E	5			25	75			
		G7F	5	60% min. rect. eff. at 100 mc for detector		25	75			
		G8C	5			25	75			
MATCHED PAIRS Note (1)	A	1N48 (2)	G8	85	70	4.0	833	50	150	.400
		1N52 (2)	G8A	85	70	4.0	150	50	150	.400
		1N63 (2)	G8B	125	100	4.0	50	50	150	.400
		1N75 (2)	G8C	125	100	2.5	50	50	150	.400
QUADS	E	1N73		75		Note (2)	50(±)—10m	22.5	60	.100
		1N74		75		Note (3)	50(±)—10v	22.5	60	.100
DIFFUSED JUNCTION RECTIFIER	C-1 C-2	1N91		100	30			150	470	25
		1N92		200	65			100	310	25
		1N93		300	100		(ALL RATINGS AT 55° C)	75	250	25
		1N151		100	30			500	1570	25
		1N152		200	65			500	1570	25
		1N153 1N158		300 380	100 185			500 500	1570 1570	25 25
TRANSISTORS	D	2N43	PNP Junction Transistor, Current Amplification 0.98, Maximum Power Gain 40 db, Maximum Collector Dissipation 150 mw.							
		2N44	PNP Junction Transistor, Current Amplification 0.95, Maximum Power Gain 39 db, Maximum Collector Dissipation 150 mw.							
		2N45	PNP Junction Transistor, Current Amplification 0.92, Maximum Power Gain 38 db, Maximum Collector Dissipation 150 mw.							

- (1) Matched at +1v so that current through higher resistance unit is within 10% of lower resistance unit.
- (2) Consists of 4 balanced diodes. With 15 ma forward current, the voltage drop of each diode is 1.3v min. and 1.7v max. All diodes are within 0.1 volt of each other, and voltage drop of a pair is 0.03 volts of each other.
- (3) Consists of 4 balanced diodes. With 15 ma forward current, the voltage drop of each diode is 1.2v min. and 1.8v max. All diodes are within 0.2v of each other and voltage drop of a pair is 0.1v of each other.



WELDED GERMANIUM DIODES



SPECIAL, GAS-TIGHT DIODES
Hermetically Sealed
... Ceramic Case

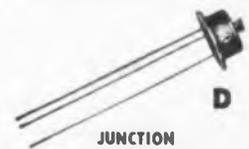


C-2



C-1

DIFFUSED JUNCTION GERMANIUM RECTIFIERS



JUNCTION TRANSISTORS



GERMANIUM QUADS



SEND FOR THIS HANDY REFERENCE MATERIAL

GERMANIUM DIODE HANDBOOK, complete specifications on G-E germanium diode products. Contains diode and rectifier characteristics and applications, curves on resistance, voltage, temperature, efficiency, circuit diagrams covering AM, FM and TV receivers, radar, carrier current. \$1.25 post-paid. Send your check or money order today to: General Electric Company, Section X4864, Electronics Park, Syracuse, New York.

GERMANIUM DIODE INTERCHANGEABILITY CHART IS FREE UPON REQUEST



You can put your confidence in—

GENERAL ELECTRIC

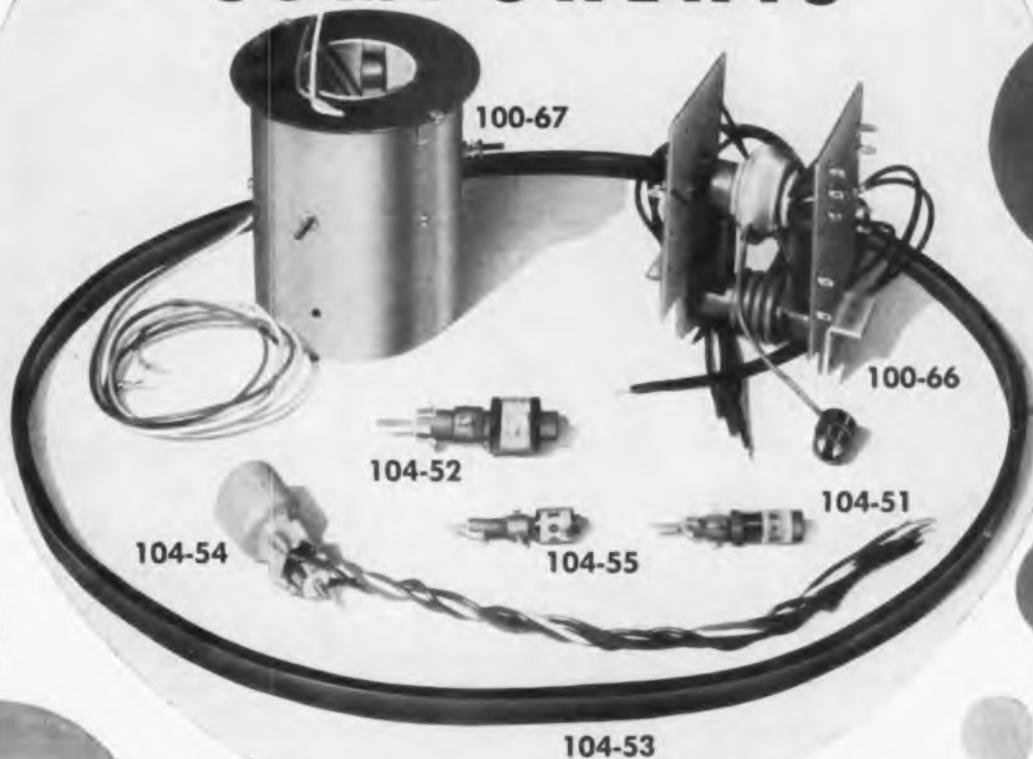


Another Raypar First...

TV

Color

COMPONENTS



RAYPAR

INCORPORATED

7800 WEST ADDISON STREET • CHICAGO 34, ILLINOIS

SERVING AMERICA'S LEADING RADIO & TV MANUFACTURERS

- 100-66 FLYBACK TRANSFORMER
- 104-51 HORIZONTAL LINEARTY CONTROL
- 104-55 HORIZONTAL DYN. CONV. PHASE CONTROL
- 104-54 HORIZONTAL CONVERGENCE TRANSFORMER
- 104-52 WIDTH COIL
- 100-67 PURITY COIL
- 104-53 FIELD NEUTRALIZING COIL



Germanium Products

POINT CONTACT DIODES



The interior of the RR_{CO} Diodes is vacuum filled with a flexible wax material which is chemically and electrically inert. Because of this the diode is excellently protected against the effects of moisture and contamination from the surrounding air.

1N34	1N54	1N64
*1N34A	1N54A	1N65
1N35	1N55	*1N69
1N38	1N55A	*1N70
1N38A	1N58	1N72
1N48	1N58A	1N75
1N51	1N60	*1N81
1N52	1N63	1N110

*JAN type

DIFFUSED POWER DIODES



Featuring very low forward resistance along with high back resistance which results in high rectification efficiencies of close to 100%. Intended for power rectification service.

1N91	1N152
1N92	1N153
1N93	1N158
1N151	

COMPUTER DIODES



Recommended for applications requiring stability, long life and higher temperature operation. Thousands in use meeting special requirements.

1N111
1N112
1N113
1N114
1N115

TRANSISTORS



Types RR14, RR20, RR34, 2N34, 2N36, 2N37 and 2N38 intended for applications in low level audio circuits. Particularly applicable where small size and economy of operation are desirable.

Type RR21 intended for applications in low level audio circuits requiring power outputs in the 10 milliwatt range.

Type RR38 intended for applications requiring economy of operation at low power levels. Particularly applicable as the output stage for hearing aids and personal receivers.

Type RR66, photo transistor.

Types RR83 and RR87 intended for service in switching applications such as flip-flop, multivibrator and pulse circuits.

RR14	†RR83
RR20	†RR87
RR21	2N34
RR34	2N36
RR38	2N37
*RR66	2N38

*Photo Transistor
†Computer Transistor

Our engineers will be glad to offer suggestions regarding your Germanium Diode and Transistor applications without obligation. For further information write for the following bulletins:

TG16A—Replacement Guide.
 TG24 —Computer Diodes.
 TG23 —General Diodes & PNP Transistors.
 TG25 —Diffused Junction Power Diodes.
 TG26 —1N110 Measuring Technique.
 TG27 —Photo Transistor.

NOTE:

The art of manufacturing germanium products is constantly changing as new methods and techniques are developed. New products and variations of the old are continuously added to our line. Write us requesting the latest information.

Really



Reliable

Seletron and Germanium Division RADIO RECEPTOR COMPANY, INC.

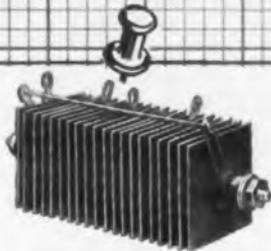
In Radio and Electronics Since 1922

SALES OFFICES: 251 WEST 19TH STREET, NEW YORK 11, N.Y., WATKINS 4-3633, FACTORIES IN BROOKLYN, N. Y.

Really



Selenium Rectifiers



INDUSTRIAL TYPE RECTIFIERS

These have proved reliable through years of service in various voltage and current combinations up to several hundred kilowatts. Useful for a multitude of applications: power supplies, magnetic amplifiers, electroplating, battery charging, etc.



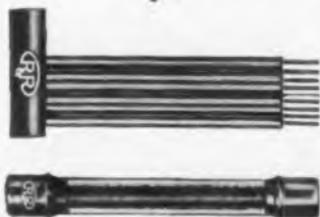
HALF-WAVE RADIO TYPE RECTIFIERS

These stacks can meet the needs of many small power applications as for instance, relay operation. Millions are in use in radio and TV. Available for black and white as well as color TV in ratings up to 750 MA.



EMBEDDED RECTIFIERS

For adequate protection in military and other stringent uses. Recommended for use where size and weight are important considerations such as in aircraft applications.



CARTRIDGE ASSEMBLES

... From tiny, single cell diodes to several thousand volts. Phenolic or glass encased, wide range of half-wave, bridge and center tap types.



HIGH TEMPERATURE TYPES

These selenium rectifiers are capable of operating in an ambient temperature of 125°C. with no increase in the size of the cell as compared with a similar rectifier operating in a normal ambient.



HERMETICALLY SEALED UNITS

Built to special requirements to meet unusually severe conditions. Designed to meet individual needs.

RECTIFIERS FOR MAGNETIC AMPLIFIERS

Designs will be submitted to meet individual requirements.

Our engineering department will be glad to aid you in the solution of your rectifier problems. Submit your requirements and let us make recommendations . . . without obligation, of course! See our catalog in Sweet's Product Design file.

For additional information write for the following bulletins:

- T-177—Listing Industrial and Half-wave Radio Types.
- T-172—Selenium Diodes.
- T-178—Cartridge assemblies.



Seletron and Germanium Division RADIO RECEPTOR COMPANY, INC.

In Radio and Electronics Since 1922

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MINIATURIZING YOUR EQUIPMENT?

Specify SIMPLEST, MOST COMPACT

AMPERITE THERMOSTATIC DELAY RELAYS

MOST ECONOMICAL, HERMETICALLY SEALED



STANDARD



MINIATURE

Provide delays ranging from 2 to 120 seconds.

- Actuated by a heater, they operate on A.C., D.C., or Pulsating Current.

- Hermetically sealed. Not affected by altitude, moisture, or other climate changes.
- Circuits: SPST only—normally open or normally closed.

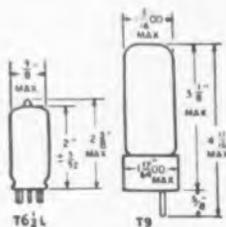
Amperite Thermostatic Delay Relays are compensated for ambient temperature changes from -55° to $+70^{\circ}$ C. Heaters consume approximately 2 W. and may be operated continuously. The units are most compact, rugged, explosion-proof, long-lived, and — inexpensive!

TYPES: Standard Radio Octal, and 9-Pin Miniature.

PROBLEM? Send for Bulletin No. TR-81

BALLAST-REGULATORS

- Amperite Regulators are designed to keep the current in a circuit *automatically regulated* at a definite value (for example, 0.5 amp).
- For currents of 60 ma. to 5 amps. Operates on A.C., D.C., Pulsating Current.
- Hermetically sealed, light, compact, and most inexpensive.



T9 BULB

Maximum Wattage Dissipation: T6 1/2 L—5W. T9—10W.

Amperite Regulators are the simplest, most effective method for obtaining *automatic regulation* of current or voltage. *Hermetically sealed*, they are not affected by changes in altitude, ambient temperature (-55° to $+90^{\circ}$ C), or humidity. Rugged; no moving parts; changed as easily as a radio tube.

Write for 4-page Technical Bulletin No. AB-51

AMPERITE CO. Inc., 561 Broadway, New York 12, N. Y.

In Canada: Atlas Radio Corp., Ltd., 560 King St. W., Toronto 2B

As We Go to Press

ASME Standard Acoustic Symbols

Engineers engaged in work involving acoustical measurements will be interested in a recent publication of the A.S.M.E. which sets an American Standard on Letter Symbols for Acoustics. The new standard lists more than one hundred symbols for terms used in acoustics measurements. Copies of the publication, designated ASA Y10.11—1953, may be obtained at \$1.00 from Order Dept., American Society of Mechanical Engineers, 29 W. 39th St., New York 18, N.Y.

Solar Eclipse Attracts Great Interest

Astronomers, geodesists and other experts will observe the Solar Eclipse of June 30 from ten sites, scattered along an 8,000-mile arc from James Bay, Ontario to Bandarsha, Iran as part of a program sponsored by the HQ A.F. Cambridge Research Center, ARDC. The result should be the most comprehensive survey of a solar eclipse in history. The great interest in this project is explained by the fact that not until 2151, or 197 years, will scientists have an opportunity to observe another solar eclipse in this area.

COMPUTER GETS LIFT



One of Remington-Rand's famed Univac's is delivered to Metropolitan Life Ins. Co. in N.Y. Parts of the electronic computer were so bulky that they had to be lifted by hoist to 20th floor

MORE NEWS
on page 80



INTERNATIONAL RECTIFIER

C O R P O R A T I O N



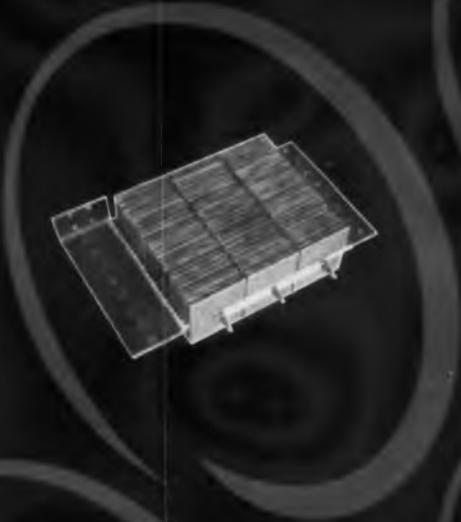
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CALIFORNIA

Selenium Rectifiers



HIGH VOLTAGE CARTRIDGE RECTIFIERS

Made to your specifications.
DC output from 20 volts to 200,000 volts.



INDUSTRIAL POWER RECTIFIERS

Ratings to 250 KW
Power Factor 95%
Finest Industrial Rectifiers produced today.



HERMETICALLY SEALED

Selenium Rectifiers
Made to your specifications.



TV & RADIO MINIATURE RECTIFIERS

Widest range in the industry.
Available with universal mounting for universal replacement.



HIGH TEMPERATURE GERMANIUM DIODES

"Red Dot" Series
for -60°C
to $+100^{\circ}\text{C}$
temperature applications.

LARGEST SUPPLIERS OF INDUSTRIAL RECTIFIERS

WRITE DEPT. D for complete descriptive literature.

INTERNATIONAL RECTIFIER

C O R P O R A T I O N

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Chicago Branch Office: 205 West Wacker Drive · Phone: Franklin 2-3889
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When you *TEST*, use the *BEST*...

**THE SYMBOL OF QUALITY,
ACCURACY, DEPENDABILITY**



The equipments illustrated are typical examples of the complete line of PRD quality test components. Rigorously engineered and meticulously manufactured to the highest attainable standards, these units are now standard equipment in many of the leading research and development laboratories throughout the world. In addition to the widely diversified standard equipments offered, PRD maintains a highly qualified staff for special products development. This staff is at your service at all times for consultation.



**Type 587
UHF
FREQUENCY
METER**
170-900 mc/s



**Type 801-A
UNIVERSAL
KLYSTRON
POWER
SUPPLY**
300-1500 V
at 65 ma;
1.5-3.6 KV
at 25 ma



**Type 854
UNIVERSAL
SPECTRUM
ANALYZER**
8.5-9.6 kmc/s,



**Type 907
ROADBAND
SWEEP
FREQUENCY
GENERATOR**
40-900 mc/s

FREQUENCY MEASURING DEVICES

Frequency Meters	Frequency Range (kmc/sec)	Type No.	Transmission Line Size (Nominal O.D.—inches)	R—Reaction T—Transmission
General Purpose	0.47—0.95	587	3/8	T
	2.40—3.70	583-D	3/8	R
	5.30—6.50	588-A	1 1/2 x 3/4	R
	3.95—5.85	574	2 x 1	R
	5.85—8.20	575	1 1/2 x 3/4	R
	7.05—10.0	576	1 1/4 x 3/8	R
	8.2—10.0	585-A	1 x 1/2	R
	8.2—10.0	585-B	1 x 1/2	T
	8.2—10.0	586-A	1 1/4 x 3/8	R

In addition to the General Purpose Frequency Meters listed above, PRD manufactures a complete line of Precision Frequency Meters covering the entire frequency range from 0.55 to 39.0 kmc/s. Transmission line sizes include 3/8" coaxial line and all standard wave guide sizes from 0.280" x 0.140" I.D. to 2" x 1" O.D. All types are available in Reaction and Transmission styles.

The Type 500 Frequency Standard Multiplier is available to generate standard frequency signals in the UHF and microwave regions when used with the Type 612-A Tunable Crystal Mount.

SIGNAL SOURCES AND RECEIVERS

TUBE MOUNTS Type 701 Type 702 Type 703 Type 704	For type 2K28 klystrons, 2.400—3.445 kmc/sec For type 2K25 klystrons, 8.50—9.60 kmc/sec, 1 1/4 x 3/8 waveguide For type 2K25 klystrons, 8.50—9.60 kmc/sec, 1 x 1/2 waveguide For type 2K22 klystrons, 4.24—4.91 kmc/sec, 2 x 1 waveguide
OSCILLATORS Type 705 Type 706	Covering the frequency range from 7.0 to 11.0 kmc/sec Covering the frequency range from 3.6 to 7.3 km/sec
POWER SUPPLIES Type 801-A	Providing all required electrode voltages to operate a wide variety of klystrons, plus internal modulators
SPECTRUM ANALYZERS Type 853-A Type 854-A Type 855-A	Covering the frequency range from 2.40 to 3.40 kmc/sec Covering the frequency range from 8.50 to 9.60 kmc/sec Combining both of the above ranges in one instrument
GENERATORS Type 902 Type 903 Type 907	Covering the frequency range from 3.65 to 7.30 kmc/sec Covering the frequency range from 7.00 to 10.5 kmc/sec Covering the frequency range from 40 to 900 mc/sec
NOISE GENERATORS Type 904	For the direct measurement of noise factors in the range of 10 to 1000 mc/sec



**Type 904
VHF-UHF
NOISE
GENERATOR**
.01-1.0 kmc/s

**Type 275
VOLTAGE STANDING
WAVE RATIO AMPLIFIER**
300-3000 cps.



Write for Catalog
SEND FOR YOUR FREE COPY
OF THE PRD CATALOG TODAY
—COMPLETELY ILLUSTRATED,
IT IS A VALUABLE ADDITION
FOR YOUR REFERENCE FILES
—ADDRESS DEPT. T-6.

Polytechnic

-from VHF through EHF,

PRECISION RF TEST EQUIPMENT

Type 312
E/H TUNER
26.5-40.0 kmc/s



Type 196-B
VARIABLE
ATTENUATOR
8.20-12.4 kmc/s
0-40 db



ITEM	TRANSMISSION LINE SIZE									
	COAXIAL (Nom. O.D.-in.)		WAVEGUIDE (Nominal O.D.-inches)							
	1/4	3/8	3x1 1/2	2x1	1 1/2x1 1/2	1 1/4x1 1/4	1x1 1/2	0.622x 0.311 I.D.	0.420x 0.178 I.D.	0.280x 0.140 I.D.
ATTENUATORS AND TERMINATIONS										
Variable Attenuators Uncalibrated			171	162	1156 161	160	154-A 159	189	190	191
Dial Precision			174-B	169-B	1177 177-B	184-B	196-C 196-D	187-B		
Cut-off		181, 198					180			
Fixed Attenuators Low Power	136 series	130 series 1100-A, B, C	s	s	s	s	140 series	s		
Terminations	145-A	139	129	115	121	114-A	116-A	131-A	132-A	133-A

Type 211
PRECISION WAVEGUIDE
SLOTTED SECTION
18.0-26.5 kmc/s



TRANSMISSION LINE COMPONENTS										
Waveguide to Coaxial Adapters			365	357	356	355-A	354-B			
Coaxial Transitions	389, 390 391, 392	389, 390 391, 392								
Directional Couplers				400	404	401	402 408	405		
Waveguide Stands			375-A	376-A	377-A	378-A	379-B	386-A	387-A	388-A
Flange Bolt & Nut Assemblies			369-A	369-B	369-B	369-C	369-D	369-E	f	f
Bands and Tees				s	s	s	462 465 481	s	s	s

Type 585
DIRECT READING
FREQUENCY METER
8.20-10.0 kmc/s



IMPEDANCE MEASUREMENT & TRANSFORMATION

Slotted Sections	200-C	205-A 215-A	209-A	201-A	204-B	202-B	203-B	210-A	211-A	212-A
Tuners		306	309-A	300-A	305-A	302-B	303-A	314-A	313-A	312-A

The Type 250-A Broadband Probe is designed for use with Types 200-C through 209-A and with Type 215-A Slotted Sections; Types 210-A and 212-A are supplied with built-in tunable probes. The Type 361 B-F Adapter is available for use with the Type 250-A Probe.

Type 612-A
CRYSTAL BOLOMETER
MOUNT
1.00-12.4 kmc/s

Type 389
COAXIAL
TRANSMISSION
LINE ADAPTER
0-4.0 kmc/s

DETECTION AND POWER MEASUREMENT

Bolometer and Crystal Mounts		612-A				601	616 616A	621 621A	615
Crystal Mounts		613		601				620	615
Bolometer Mounts (s)		627-A, 628-A					616	620	618
Thermistor Mounts						635			

Power Bridge Type 650-A Universal Power Bridge for use with above mounts to measure absolute power level.

Type 650-A
UNIVERSAL
POWER BRIDGE
0.1, 1.0, 10, 100
mw full scale



BOLOMETERS

TYPE 610-A FOR USE WITH 250-A, 612-A, 613	TYPE 631-C FOR USE WITH 627-A
TYPE 614 FOR USE WITH 210-A, 211-A, 616-A, 621-A	TYPE 631-D FOR USE WITH 628-A
TYPE 617 FOR USE WITH 212-A, 618, 620	

f—Equipment is supplied with captive range screws
s—Available on special order only

Type 627-A
BROADBAND COAXIAL
BOLOMETER MOUNTS
.5-10.0 kmc/s



Standard and Custom Units
SERVO AMPLIFIERS • LOW LEVEL
AMPLIFIERS • HIGH FREQUENCY
AMPLIFIERS • REGULATION OF
ALTERNATOR VOLTAGE AND FRE-
QUENCY • CONTROL OF MOTOR
TORQUE AND SPEED • MAGNETICALLY
REGULATED STATIC POWER SUPPLIES

PRODUCTION MEN PREFER



CEN-TRI-CORE
 "ENERGIZED or PLASTIC"
ROSIN-FILLED SOLDER

Standard for Television, Radio and fine Electronic and Electrical work. Non-corrosive, melts faster, more joints per pound, insured continuity of flux. Available in 6 different flux percentages. Meets Federal Specifications.

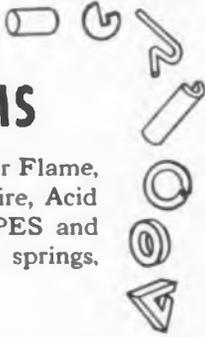
*foremost
in
Quality*



the mighty midgets

SOFT-SOLDER PREFORMS

Designed for YOUR application. For Flame, oven or induction heating. Solid Wire, Acid or Rosin Core. ALL SIZES, SHAPES and ALLOYS...rings, washers, pellets, springs, discs and other shapes.



**SPECIALISTS IN
SOLDERS AND FLUXES
FOR OVER 50 YEARS**

**SOLDERS FOR
PRINTED CIRCUITRY**

For dip soldering copper, solder plated and gold systems a 60% tin or a 63% tin alloy is recommended. For silver containing systems a silver bearing alloy is recommended to prevent silver take-up by the solder bath.



EXTERNAL FLUXES

for all soldering applications

ROSIN, ACTIVATED ROSIN,
GENERAL PURPOSE AND
STAINLESS STEEL FLUXES

**SOLDERS FOR LOW
TEMPERATURES — INDIUM**

INDIUM pellets in all sizes. Made of pure indium and tolerances can be closely held. Indium pellets are most useful in Transistors, Resistors and Junction Resistors of all types, where very low temperatures are required. Alpha also makes solder pellets of all alloys for the soldering of GERMANIUM and SILICON DIODES.

Consult us on YOUR Soldering Problems!

Trained Field Engineers are always available to assist YOU.



ALPHA METALS, INC.

58 WATER STREET

OTHER ALPHA PRODUCTS

- LAMP FLUX CORE • SOLID WIRE
- BAR • RADIATOR and BODY
- FOIL • RIBBON • PASTE SOLDER
- PRINTED CIRCUIT SOLDERS
- INDIUM PELLETS & ALLOYS AVAILABLE
- UNI-CORE LEAK-PRUF ACID FLUX

JERSEY CITY 4, N. J.



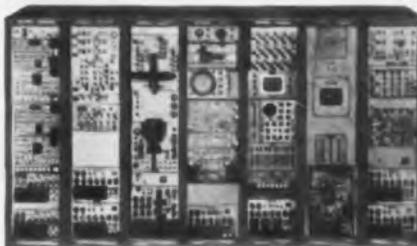
TELECHROME THE ONLY COMPLETE LINE
of INSTRUMENTATION for
COLOR TV



Chromascope
(Signal
Certification)



Phase Slope
(Envelope Delay)
Curve Tracer



Full facilities — Transmits, receives, monitors,
analyzes composite color pictures

In Color TV instrumentation, no other name means as much as Telechrome . . . because no organization can match Telechrome's 3 years of experience in providing color TV generating, testing and broadcasting equipment to these and other prominent manufacturers, laboratories and broadcasters.

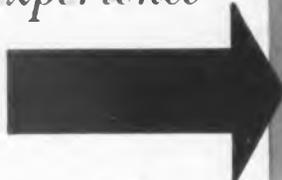
Complete equipment for generating color bars; creating encoded and composite pictures from transparencies; color signal certification; transmission, reception, monitoring, and analysis of color pictures — literature on these and more than 100 additional instruments for color TV by TELECHROME are available on request

DELIVERY 60 DAYS

TELECHROME
INCORPORATED

The Nation's Leading Supplier of Color TV Equipment
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AMityville 4-4446

*Years of experience
proves to users . . .*



the dependability of

KOVAR

Glass-sealing Alloy



* Westinghouse Trade Mark No. 337,962

The ideal alloy for glass sealing, Kovar matches the expansivity of certain hard glasses over the entire working temperature range. It resists mercury attack, has ample mechanical strength and seals readily. A permanent and impervious bond is obtained by a closely controlled thickness of oxide on Kovar alloy interfused with hard glass.

Kovar is a cobalt, nickel, iron alloy, manufactured under very carefully controlled conditions, and supplied by Stupakoff in the form of: SHEET, ROD, WIRE, FOIL, TUBING, EYELETS, LEADS and FABRICATED SHAPES. The prominent users of KOVAR and the length of time they have employed this metal are convincing proof of satisfaction.

Full information on the use of Kovar is given in Stupakoff Bulletin 145, which we will send upon request.

Stupakoff CERAMIC & MFG. CO.
Latrobe, Pennsylvania

- S** 18 YEARS
- GE** 18 YEARS
- Western Electric** 16 YEARS
- AMPEREX** 12 YEARS
- RCA** 18 YEARS
- Eimac TUBES** 13 YEARS
- FTR TELEPHONE & RADIO** 11 YEARS
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Outstanding Value

PRESTO SR-II STUDIO CONSOLE TAPE RECORDER

For the first time . . . a precision Presto tape recorder complete with amplifier in studio console cabinet for less than \$1000. Here are the facts about this amazing value:

The R-II* Mechanism Here is the smooth operating, sleekly designed tape transport unit that drew engineers acclaim when it was introduced last year. Embodies the exclusive Presto capstan drive unit where pressure pulley and solenoid are mounted on a single sub-assembly for easy maintenance. Capstan and motor are interconnected by a belt. Two torque motors, each including its own brake system (external contracting type) assure smooth, positive action without the usual hazard of tape breakage. If tape does break, an automatic safety switch instantly stops the mechanism.

The Amplifier Actually there are two separate chassis for amplification. One contains the recording and reproducing channels. The second is the power supply located at the base of the console. This arrangement reduces noise and keeps operating temperature down.

The Console Cabinet Presto's designers have given particular attention to accessibility of every part of the SR-11. The top panel swings upward on a sturdy hinge to expose the underside of the tape mechanism, while the amplifier opens from the front and turns over on gimbals for access to tubes.

Ask your Presto distributor to order your SR-11 today. You'll never match it in value or performance.

*formerly RC-11

\$995 COMPLETE
with amplifier
in console cabinet

- Three triple shielded magnetic heads
- Frequency response: 50 to 15,000 cps. (15"/sec.)
- 55 db signal to noise ratio (at 2% distortion)
- Flutter: less than .15% (15"/sec.)
- Push button function switches
- Will accommodate reels up to 10½"



PRESTO RECORDING CORPORATION
PARAMUS, NEW JERSEY

Export Division: 25 Warren Street, New York 7, N. Y.
Production Division: Walter P. Downs, Dominion Square Bldg., Montreal

WORLD'S LARGEST MANUFACTURER OF PRECISION RECORDING EQUIPMENT AND DISCS



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Performance-Guaranteed

ARE YOU READY FOR
Guaranteed
 Shield Performance?

MAGNETIC SHIELDS

Are you ready for a major electronic and electrical first—Magnetics, Inc. "Performance-Guaranteed" Shields for shielding of standard cathode ray and other tubes against moderate and high flux external fields . . . and custom-designed "Performance-Guaranteed" Shields for specific shielding problems?

Here are shields which eliminate waste . . . are guaranteed to your performance specification . . . and are sold at standard prices.



THE WIDEST CHOICE IS YOURS

MATERIALS . . . Premium quality Performance-Guaranteed Shields are usually made from Mumetal or A.E.M. 4750, dry-hydrogen annealed for optimum isolating properties. Shields can be made from any other commercially available magnetic and non-magnetic materials when required by performance specifications.

METHOD OF MANUFACTURE . . . Performance-Guaranteed Shields can be fabricated or drawn by Magnetics, Inc., depending upon which is most economical for your requirements.

FINISH . . . Performance-Guaranteed Shields can be furnished painted, lacquered or unfinished, as your requirements dictate. Paint color can be matched to any equipment shade you select. Pre-painting by Magnetics, Inc. eliminates danger of damage to shields in painting operations in your plant . . . provides you with shields immediately ready for your assembly operations.

FREE ENGINEERING DESIGN . . . Our Engineering Department will carry out all phases of your shield design . . . including magnetic analysis . . . mechanical design . . . and production engineering to your cost requirements.

write on company letterhead



DEPT. TT-9, BUTLER, PENNSYLVANIA

34 For product information, use literature card on last page.

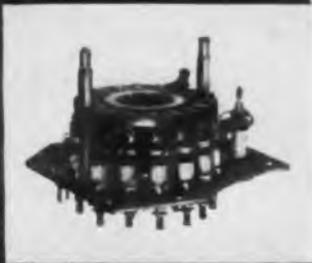
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BH6A



★ BLILEY TYPE BCS-1A



★ CUSTOM-BUILT
OSCILLATOR
ASSEMBLY



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SOLID ULTRASONIC DELAY LINES

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Informative bulletins are available on all Bliley products. Write, specifying your requirement.

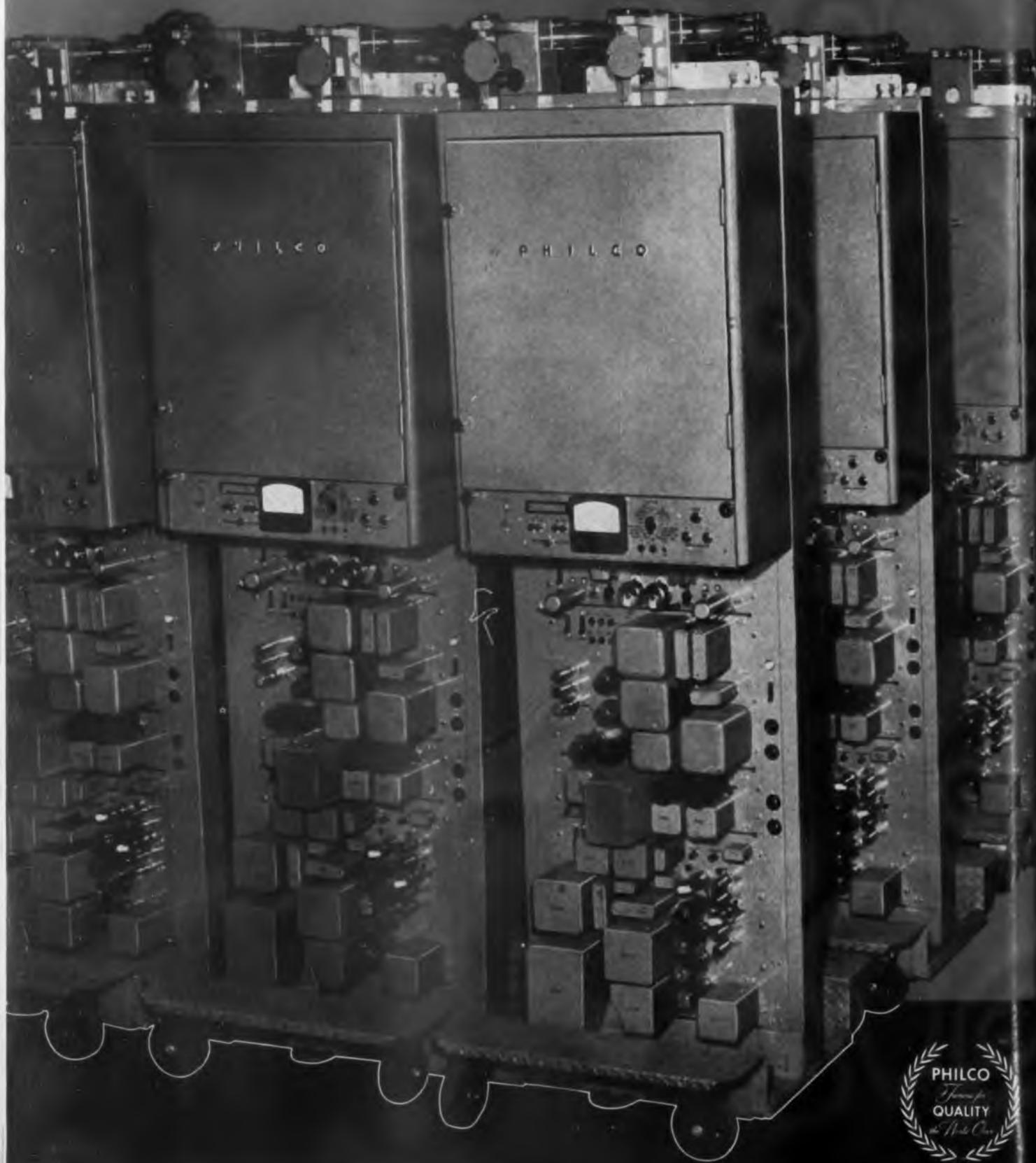


BLILEY ELECTRIC COMPANY

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Philco has the distinct advantage of a world-wide installation and service organization, and an experienced system-planning department. These valuable facilities enable Philco to obtain first-hand information on the operation of existing installations, improve equipment, and thus supply new microwave systems which assure the greatest economy and dependability in performance.

This is one reason why Philco microwave is the preference of industry—*good reason why Philco is the world's leading manufacturer of microwave equipment.*

Need a speedy and permanent cure for those communication headaches? Then consider microwave . . . and when you do, specify Philco. An experienced Philco representative is ready to serve you.

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*S'matter, Swami,
won't it work?*

Near-sighted or not, our snake charmer friend should know he can get more out of a wire if it has a well soldered connection. How do we know that? Well, making the right kind of flux core solder for every application has been Kester's sole business for more than 50 years. There's no mystery about Kester Solder, no secret ingredients either. With Kester, quality is the paramount feature . . . the same today as it's always been.

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Plastic Rosin-Core Solder . . . your best bets . . .
with exact core size or flux-content and alloy
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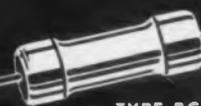
Shallcross

Borohm

BORO-CARBON RESISTORS



TYPE BC-30
(2-watt)



TYPE BC-25
(1-watt)



TYPE BC-20
(1/2-watt)

STABLE—Typical average change
after 1000 hours load life test 0.2%.

ACCURATE—Within 1, 2, 5% on
all standard types.

LOW T.C.—200 p.p.m. per °C
above 20K.
100 p.p.m. per °C below 20K.

RUGGED—Epoxy resin coating re-
mains elastic, cannot crack or chip.

Shallcross Borohm resistors are unusually stable, accurate, and long-lived as a result of Shallcross' basic research on carbon films and manufacturing processes. Complete control of the quality and distribution of the boro-carbon film on specially formulated ceramic rods assures minimum film variation within each unit, as well as from unit to unit.

Automatic machine handling of resistors throughout the carbon deposition process prevents contamination. Rigid automatic control of rod and gas temperatures during deposition eliminates soot formation in the carbon film. Resistance for a given size rod is therefore both predictable and reproducible.

Borohm resistors have negligible voltage coefficient, consistent temperature coefficient, and stability proven by temperature cycling, moisture resistance, and load life tests.

For detailed information as to sizes, styles, ratings, and performance test data results write for the new Shallcross Engineering Bulletin L-33.

1929—Our 25th year—1954

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MILLIONS

OF VARIABLE

COMPLETE MILITARY LINE AVAILABLE.

POPULAR MILITARY TYPES ILLUSTRATED.

CORRESPONDING COMPLETE LINE FOR COMMERCIAL APPLICATIONS ALSO AVAILABLE.

5 acres of plant area . . . over 1000 employees . . . making ALL TYPES of variable resistors by the million . . . for ALL your requirements. CTS SPECIALIZES in precision mass production of variable resistors and associated switches . . . makes nothing else.

Most controls available with switches and in concentric shaft tandems or with two controls operating on one shaft. Also available with locking bushing, water sealed bearing and many other special features not illustrated.

Immediate delivery from stock on many JAN-R-94, JAN-R-19 and other types.



WRITE FOR ILLUSTRATED CATALOG—

Describes Electrical and Mechanical characteristics, Special Features and Constructions of a complete line of variable resistors for military and civilian use. Includes dimensional drawings of each resistor

REPRESENTATIVES

Henry E. Sanborn
Mechanical Div.
1000 E. 17th St.
Wheat Ridge, Denver,
Phone: FOrster 3-3420

W. S. Harman Company
121 No. Robertson Blvd.
Beverly Hills, California
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OTHER EXPORT

Sylvan Quaffery
8 West 45th Street
New York 18, New York

1/2 watt 70°C, 3/4" diameter miniaturized variable composition resistor.

TYPE 65
(Miniaturized)



TYPE C90-65
Tandem



UNPRECEDENTED PERFORMANCE CHARACTERISTICS

Types 65, 90 and 95 are specially designed for military communication equipment subject to extreme temperature and humidity ranges: -55°C to +150°C . . . aridity to saturation.

1 watt 70°C, 15/16" diameter variable composition resistor.

TYPE 90



TYPE GC-90
With Switch



TYPE C2-90
Tandem



Meets JAN-R-94 type RV4

2 watt 70°C, 1-1/8" diameter variable composition resistor. Also available with other special military features not covered by JAN-R-94.

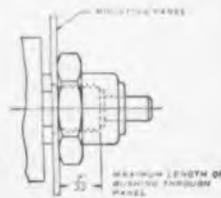
TYPE 95



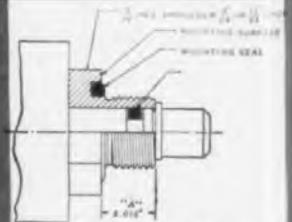
TYPE GC-95
With Switch



TYPE C2-95
Tandem



WATER SEALED MOUNTING AND BEARING FOR TYPE 65



(CAN BE SUPPLIED WITHOUT THE WATER SEALED MOUNTING SHOULDER)
WATER SEALED MOUNTING AND BEARING FOR TYPE 45, 35, 90, 95, 25, 252.



CHICAGO TELEPHONE SUPPLY
Corporation

ELKHART • INDIANA

RESISTORS... FOR EVERY NEED

Meets JAN-R-94
type RV3

1/2 watt 1-1/8" diameter
variable composition
resistor. Also available
with other special mili-
tary features not covered
by JAN-R-94.

TYPE 35



Meets JAN-R-94
type RV3

1/4 watt 15/16" diameter
variable composition
resistor. Also available
with other special mili-
tary features not covered
by JAN-R-94.

TYPE 45



Meets JAN-R-19
types RA25 and RA30

4 watt 1-17/32" diameter
variable wirewound resis-
tor. Also available with
other special military
features not covered by
JAN-R-19.

TYPE 25



Meets JAN-R-19
type RA20

2 watt 1-17/64" diameter
variable wirewound resis-
tor. Also available with
other special military
features not covered by
JAN-R-19.

TYPE 252



TYPE GC-35
With Switch



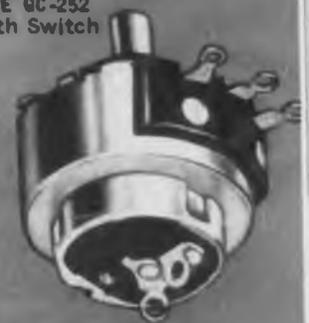
TYPE GC-45
With Switch



TYPE GC-25
With Switch



TYPE GC-252
With Switch



TYPE C2-35
Tandem



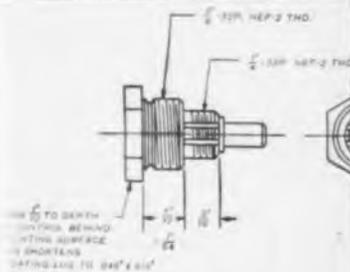
TYPE C2-45
Tandem



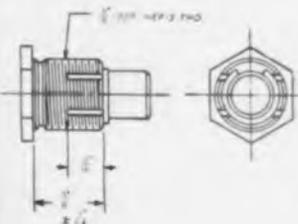
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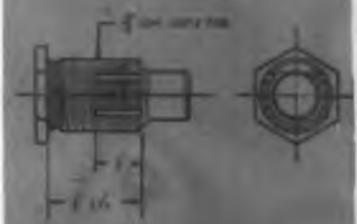
TYPE C2-252
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LOCKING BUSHINGS FOR TYPE 35 CONTROL



LOCKING BUSHINGS FOR CONTROL TYPES 25, 252, 95, 35, 90, 45.



Specialists in Precision Mass Production of Variable Resistors • Founded 1896

THE CHOICE FOR MARINE APPLICATIONS



Federal QUALITY-CONTROLLED COAXIAL CABLES

... serve on the Seven Seas with the same dependability they bring to ALL transmission requirements of communications and industry!

FEDERAL'S Armored RG Types
Outstanding for ruggedness, efficiency and reliability

RG-10/U • RG-12/U • RG-18/U
RG-20/U • RG-35/U • RG-74/U
RG-79/U



RG-18/U



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Remember: Federal is the manufacturer of "America's most complete line of solid dielectric cables." Tell us your needs!



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BROADCASTING



TEST EQUIPMENT

YOURS FOR THE ASKING: Federal's new 28-page buying guide contains a world of information on Federal quality-controlled wires and cables, plus numerous tables and diagrams. For your free copy write to the department above.

On ships at sea... plowing through all kinds of weather... from sub-zero regions to the tropics!

That's where coaxial cables receive the supreme test of *dependability*... operating radar, direction finders, Loran, RF power and general communications... safeguarding human life and valuable cargoes!

Marine applications are only one of the many fields where Federal quality-controlled coaxial cables are the choice of designers and engineers for *trustworthy transmission*!

In aviation, industry, broadcasting, TV, test, experimental, pulse or special purpose... for HF, VHF or UHF anywhere... you'll find the best in *quality and performance* in Federal's RG types. Write us today about your specific requirements, to Dept. D-166.



RADAR, PULSE, EXPERIMENTAL EQUIPMENT AND SPECIAL TYPES



INDUSTRIAL



Federal Telephone and Radio Company

A Division of INTERNATIONAL TELEPHONE AND TELEGRAPH CORPORATION
SELENIUM-INTELIN DEPARTMENT 100 KINGSLAND ROAD, CLIFTON, N. J.
In Canada: Federal Electric Manufacturing Company, Ltd., Montreal, P. Q.
Export Distributors: International Standard Electric Corp., 67 Broad St., N. Y.

GET YOUR DC from AC with dependable, long-life Federal Selenium Rectifier Power Supplies.

Tower designed to take wave guide that feeds UHF antenna of WROW-TV

To operate on channel 41 at 269,000 watts, WROW-TV, Albany, New York, needed a wave guide to feed their UHF-TV antenna. And this required a special design tower to take the wave guide.

The result was a triangular Blaw-Knox Type TG-3 Tower as the basic design. Plus a number of major modifications to provide for the 7½" x 15" wave guide inside the tower. An inside climbing ladder permits easy inspection and maintenance of the wave guide for its entire length.

The tower has a number of features which enable it to carry heavy loads and yet withstand tremendous wind pressures. For instance, double laced structural angle bracing provides extra strong, rigid construction . . . pivoted or articulated base

avoids excessive bending stresses . . . factory pre-stressed guys are proof tested to a load greater than ever required in service . . . and hot-dip galvanized coating protects against all weather conditions.

This 700 foot tower for WROW-TV is another typical illustration of the flexibility of Blaw-Knox design and construction which is readily available to you.

For further information on the many types of Blaw-Knox Antenna Towers, write for your copy of Bulletin No. 2417. Or, for prompt service send us your inquiry, specifying height of tower and type of antenna.

BLAW-KNOX COMPANY

BLAW-KNOX EQUIPMENT DIVISION • TOWER DEPARTMENT
PITTSBURGH 38, PENNSYLVANIA



ANTENNA TOWERS

Guyed and self-supporting—for AM • FM
• TV • microwave • communications • radar



Detail showing wave guide as it leaves the tower.

Note sturdy angle supports for both wave guide and ladder.



Dual-Trace Applications

WITH THE TEKTRONIX TYPE 535 OSCILLOSCOPE
AND TYPE 53C DUAL-TRACE PLUG-IN PREAMPLIFIER

Here is a combination ideally suited to most applications involving accurate comparisons of two signals.

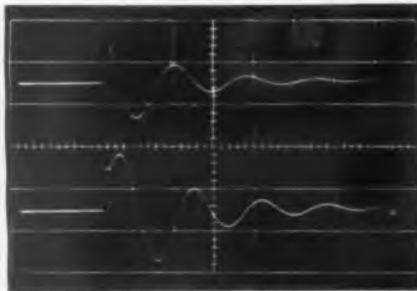
The Type 53C Dual-Trace Unit contains two identical amplifier channels that can be electronically switched either by the oscilloscope sweep or at a free-running rate of approximately 100 kc. When amplifier switching is triggered by the sweep, the two signals to be compared appear on alternate sweeps. Because the sweeps are identical, and time-delay characteristics of the two amplifier channels are closely controlled, time comparisons accurate within 1 μ sec can be made. Two simultaneous transients may be viewed by free-running the switching. Transients of as little as 1 msec duration are well delineated, having about 100 elements in each trace. For many purposes, shorter transients can be adequately observed.

The Type 535 Oscilloscope is designed to use plug-in preamplifiers. It has an exceptionally wide sweep range, high accelerating potential, new accurate sweep-delay circuitry, and many



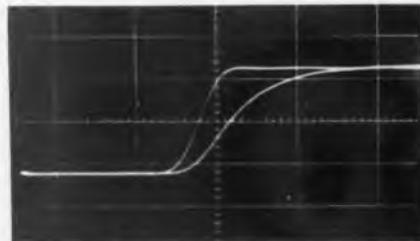
Please write for complete specifications

other important features. Four Plug-In Preamplifiers have been developed for use with the Type 535, to provide an unusually high degree of flexibility in a single oscilloscope.



SINGLE-SWEEP PRESENTATION

Response of two networks excited by a single pulse shows free running operation of the Dual-Trace Unit in a one-shot application. A single 200- μ sec/cm sweep is used for this display.



ALTERNATE-SWEEP PRESENTATION

Output of an RC network superimposed on the input pulse. Both waveforms appear on alternate 0.04 μ sec/cm sweeps, accurately measuring the risetime deterioration caused by passage through the network.

MAIN OSCILLOSCOPE FEATURES

600,000,000 to 1 Sweep Range—0.02 μ sec/cm to 12 sec/cm, continuously variable. Calibrated—0.02 μ sec/cm to 5 sec/cm, accurate within 3%.

10 KV Accelerating Potential—Brighter display at low repetition rates.

Flexible Sweep Delay—1 μ sec to 0.1 sec, jitter-free, incremental accuracy within 0.2% of full scale. Type 535 Oscilloscope—\$1300 plus price of desired plug-in units.

DUAL-TRACE PLUG-IN PREAMPLIFIER

Type 53C Specifications

Two Identical Amplifier Channels

Frequency Response—DC to 8.5 mc.

Risetime—0.04 μ sec.

Sensitivity—0.05 v/cm to 20 v/cm calibrated, continuously variable to 50 v/cm.

Electronic Switching

Triggered—actuates alternate sweeps.

Free-running rate—100 kc, approximately.

Type 53C Dual-Trace Unit—\$275.

OTHER PLUG-IN PREAMPLIFIERS

Type 53A Wide-Band DC Unit—\$85.

Type 53B Wide-Band High-Gain Unit—\$125.

Type 53D High-Gain Differential Unit—\$145.

Prices f.o.b. Portland (Beaverton), Oregon.



Tektronix, Inc.

P. O. Box 831L, Portland 7, Oregon • Cable: TEKTRONIX

TELE-TIPS

PEST control in Britain is aided by a facsimile type picture transmitter which is incorporated in a spray droplet analyzer. Samples of the spray are collected on an absorbent paper and scanned on the fax drum, eliminating human observer fatigue.

LANGUAGE translating machines will become increasingly important in disseminating scientific information. *Industrial Bulletin* of Arthur D. Little reports that two-thirds of all engineering literature is published in English, but more than two-thirds of the world's professional engineers can't read English. An even greater proportion of English-speaking engineers can't read foreign languages, thus limiting the effect of the more than 1,000,000 technical items published annually. An example of the syntax problems for machines is the fact that "a word-for-word translation of German would almost always the verb at the end of the sentence give."

BROADCASTERS can expect audiences to increase at the rate of nearly 3,000,000 a year for the next ten years, reports NARTB President Harold E. Fellows.

RED TAPE literally cost the government more than \$4700 last year. Some 8900 spools of the stuff were used to tie up documents for storage.

OVERHEARD at a public color TV demonstration: "If they can make a 12-inch picture tube, what's so hard about making one 24 inches wide?"

WHY EDITORS turn grey at a tender age. . . . A leading wire manufacturer sent us an announcement of a new catalog. The following mail brought the following correction notation: "Due to a typographical error reference was made to 'crotholes and cockets.' It should read crotches and sockets."

INDUSTRIAL ACCIDENTS last year caused lost man-hours equivalent to an entire year's shutdown of industrial plants employing 1,100,000 people. Two-thirds of all industrial injuries occurred in businesses with fewer than 100 workers.

(Continued on page 50)

Good-bye

**to all maintenance problems
with ADLAKE Mercury Relays!**



Type 1133 ADLAKE
three pole load relay...
contact normally open

Thanks to their positive, leak-proof sealing... their sure-fire mercury-to-mercury contact... their immunity to normal vibrations and temperature changes!... thousands of satisfied users in every branch of industry can testify that ADLAKE Relays literally *need no maintenance whatever!*

ADLAKE Relays have won their place by *proven* dependability—year in and year out—in jobs that conventional relays can do in an uncertain

manner at best! For every ADLAKE Relay is tested—and guaranteed—to meet specifications!

Yes, in chick incubators or diesel locomotives—for street traffic control or long-range navigation—wherever sensitivity and dependability are required—you can count on ADLAKE. Send for complete ADLAKE Relay catalog today... write The Adams & Westlake Company, 1175 N. Michigan, Elkhart, Indiana. In Canada, write Powerlite Devices, Ltd., Toronto.



THE
Adams & Westlake
COMPANY

Established 1857 • ELKHART, INDIANA • New York • Chicago
Manufacturers of ADLAKE Hermetically Sealed Mercury Relays



ML-200 Series

Crystals for color television are available to your specific calibration for either the ringing or oscillator circuit. This new design provides hermetic seal at an economical cost.

NOW IN PRODUCTION . . .

Newly-Designed CRYSTALS for COLOR TELEVISION

MIDLAND is ready *now* to supply you in quantity with color TV crystals to your exact specifications . . . and to advise with you on any phase of this subject.

MIDLAND MINIATURES

Midland has developed, and is expanding, a new series of crystal units which will comprise the MIDLAND MINIATURE line. Their small glass enclosures insure true hermetic seal and long-term stability.

Type ML-6 Range
1.0 mc—100 mc. supplied per mil Type CR-18, CR-19, CR-23, CR-27, CR-28, CR-32, CR-33, CR-35, CR-36, CR-48 when specified. Hermetically sealed metal holder with glass and metal base. Height of can is $\frac{3}{8}$ in. Pins are .050" dia., spaced .486".

Type ML-6A
Identical to Type ML-6 except provided with .093" diameter pins.

Type ML-6S Range
5.0 mc.—100 mc. for those applications in which long-term stability is the paramount requisite

Type ML-6W Range
3.0—15.0 mc. This unit is same as Type ML-6 except wire leads are provided, eliminating need for crystal socket.

Midland **CRYSTALS**
PAY OFF IN PERFORMANCE

The quality of Midland Crystals—which is another way of saying the completely dependable job they will do for you—is assured by exacting tests and controls through every step of processing. The finest precision equipment and most advanced techniques known to the industry are used by Midland from selection of raw quartz to final sealing of the crystal.

That's a big reason why Midland has climbed to its present position as the world's largest producer of quartz crystals for use in 2-way communications and other electronic devices.

Midland's engineering staff is ready to help in any project involving the use of crystals.

*Whatever your Crystal need, conventional or specialized
When it has to be exactly right, contact*

Midland
MANUFACTURING CO., INC.
3155 Fiberglas Road Kansas City, Kansas



Type ML-4 Range
1.0 - 10.0 mc. Supplied per mil Type CR-5, CR-6, CR-8, CR-10 when specified. Holder is phenolic, gasket sealed. Holder size is $1\frac{1}{8} \times 1\frac{1}{8} \times \frac{7}{16}$ with .093" diameter pins $\frac{1}{2}$ " long spaced .486".

Type ML-13
Units of this type are currently undergoing tests on experimental basis. The unit is hermetically sealed. Pin dimensions are the same as our Type ML-6. Height of can is $\frac{1}{2}$ -inch.

Type ML-1A Range
2.0 - 15.0 mc. Supplied per mil Type CR-1A when specified. Holder is phenolic, gasket sealed. Holder size is $1\frac{1}{4} \times 1\frac{1}{4} \times \frac{27}{64}$ with .125" diameter pins $\frac{3}{8}$ " long, spaced at .500".

Type ML-10 Range
15.0 - 50.0 mc. Supplied per mil Type CR-24 when specified. Over-all length is 1.055". Pin contacts, .062" diameter.

WORLD'S LARGEST PRODUCER OF QUARTZ CRYSTALS

"FUSES?"



There's BUSS — the one Source for all FUSES."

For your exact fuse needs, there's a BUSS fuse. A complete line of fuses for the Electronic Industries — in sizes from 1/500 amperes up . . . plus a companion line of fuse clips, blocks and holders.

Besides meeting your specifications, BUSS fuses are known for their ability to give accurate and dependable electrical protection under all service conditions.

To make sure that a BUSS fuse will never let you down — every BUSS fuse normally used by the Electronic Industries is tested in a sensitive electronic device that rejects any fuse that

is not correctly calibrated, properly constructed and right in all physical dimensions.

That's why manufacturers and service organizations throughout the nation rely on BUSS as the one source for fuses of unquestioned high quality.

Should you have a special problem in electrical protection, let BUSS save you engineering time. The world's largest fuse research laboratory and its staff of engineers are at your service to help you select the fuse best suited for your device — and if possible, a fuse available from local wholesalers' stocks.

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For more information
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Please send me bulletin SFH containing facts on BUSS small dimension fuses and fuse holders.

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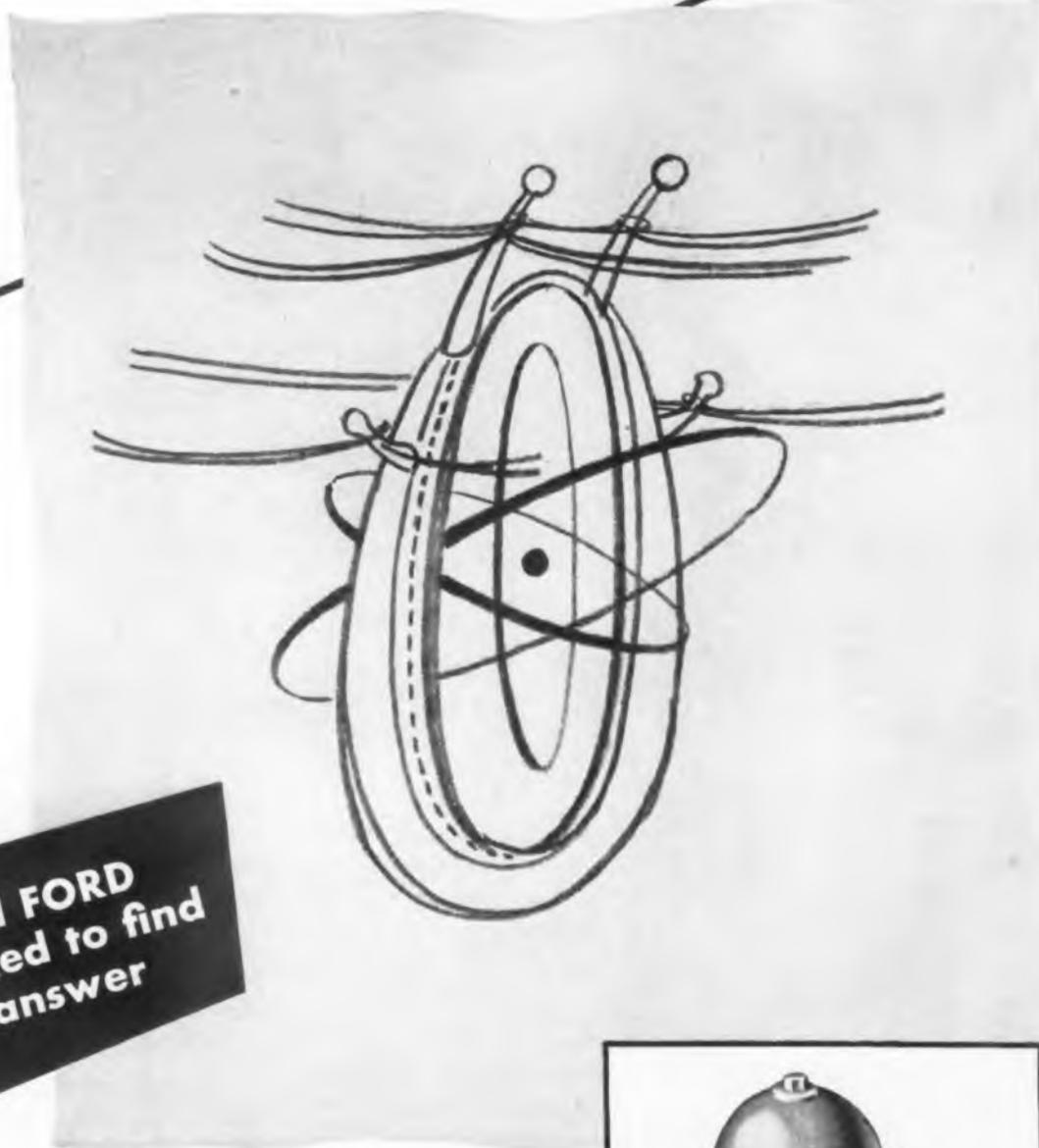
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1954

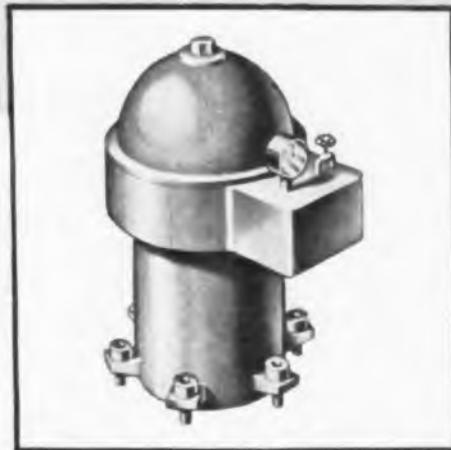
HOW TO MAKE A HARNESS for an Atom



**...and FORD
was asked to find
the answer**

Taming the monster power of a nuclear reactor requires precision control of all the elements. Ford Instrument is designing controls that seek and hold the optimum power level of the pile . . . and keep the rods so exactly set that the reactor's energy is harnessed . . . safely, securely.

This is typical of the problems that Ford has been given by the Armed Forces since 1915. For from the vast engineering and production facilities of the Ford Instrument Company, come the mechanical, hydraulic, electric, magnetic and electronic instruments that bring us our "tomorrows" today. Control problems of both Industry and the Military are Ford specialties.



You can see why a job with Ford Instrument offers young engineers a challenge. If you can qualify, there may be a spot for you in automatic control development at Ford. Write for brochure about products or job opportunities. State your preference.



FORD INSTRUMENT COMPANY

DIVISION OF THE SPERRY CORPORATION
31-10 Thomson Avenue, Long Island City 1, N. Y.

A BIG SURPRISE IN A SMALL PACKAGE

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new*

AMPEX

600



WEIGHS ONLY 26 LBS.

The most portable truly high fidelity tape recorder ever built.

**PERFORMS LIKE
A TRUE AMPEX**

Frequency response is 30 to 15,000 cycles at 7 1/2 in/sec; signal-to-noise ratio over 55 db; and every machine is tested to meet or exceed specifications.

**SERVES ALL BROAD-
CASTING NEEDS**

For recording, editing, dubbing and broadcasting, it's a full time troublefree machine. Major components have been "life tested" for an equivalent of 10 years' normal use.

**COSTS LESS THAN
ANY AMPEX BEFORE**

It's simpler and lighter, but it's all Ampex —and still the best.

AMPEX

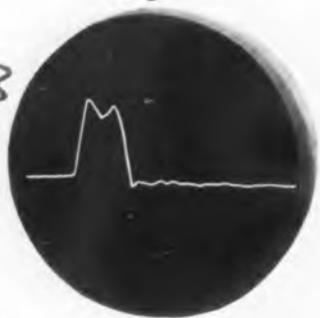
CORPORATION

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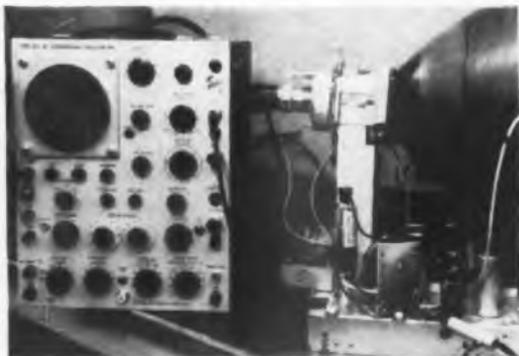
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FLYBACKS designed to your
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Irv. M. Cochrane Co.
408 So. Alvarado St., Los Angeles, Calif.

TELE-TIPS

(Continued from page 44)

TELEPHONE companies, which employ about 250,000 operators, would require some 1,500,000 full-time operators to handle the same message traffic if automatic switching equipment were not utilized.

COST OF TWO MILTON BERLE shows would be more than enough to build an educational TV station, observes *The Catholic Digest*.

EDUCATIONAL TV stations now on the air are: KUHT, Houston, Texas; KTHE, Los Angeles, Calif.; WKAR-TV, E. Lansing, Mich.; and WQED, Pittsburgh, Pa. Other educational TV stations testing or expected on the air within a month are: KQED, San Francisco, Calif.; WHA-TV, Madison, Wis.; KETC, St. Louis, Mo.; and WCET, Cincinnati, Ohio.

SCHOLARSHIPS for 100 college juniors to assist them in completing their senior year at school are being awarded for the second consecutive year by General Electric. Each student is granted \$500, a most worthwhile investment.

COLOR BLINDNESS does not seem to affect a person's ability to adjust a good color TV picture, according to a Motorola report. The trick lies in the man's ability to adjust the set to receive a clear black-and-white picture, thereby assuring that the color intensities are correct.

BIRTHDAY celebration at radio station KPOJ, Portland, Ore., honored the 14th year of operation of the RCA-891R broadcast tube. It has logged well over 91,000 operating hours.

TRAFFIC DEATHS totaled 38,500 last year, and injuries a record 2,140,000. Saturday was the most dangerous day of the week to drive.

"THE MOTIVATION which urges scientific men forward is the faith that it is good for man to understand that this is his mission. The human race is, from one point of view, an incidental excrescence in an enormous and heartless cosmos. But there is another side to the coin. Man, in his dignity, looks out upon the cosmos and fathoms it"—Vannevar Bush

**Tops for
All Electrical Uses**



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Outstanding for many years as the Top Performer, Clevelite is unmatched in its ability to meet unusual specifications.

Built-in Dimensional Stability, High Dielectric Strength, Low Moisture Absorption, Great Mechanical Strength, Excellent Machining Qualities and Low Power Factor make Clevelite Tubing outstanding.

Available in diameters, wall thicknesses and lengths as desired, for Collars, Bushings, Spacers, Cores and Coil Forms.

Our new Yorkrite internally threaded and embossed tubing affords better control of adjustments in coil forms using threaded cores.

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REPRESENTATIVES

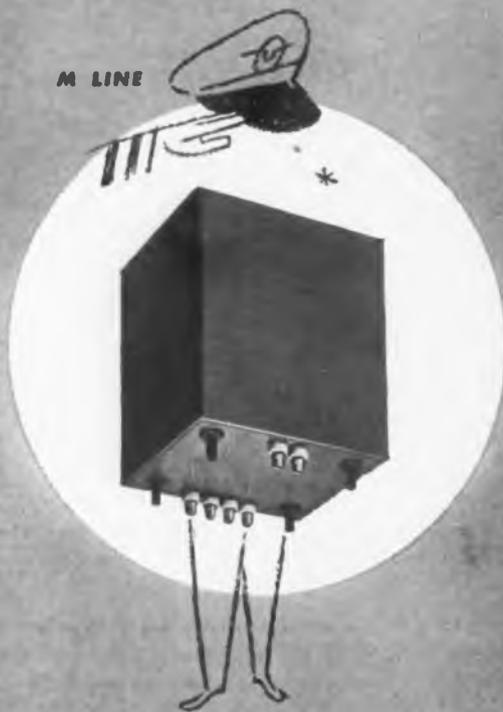
NEW YORK AREA R. T. MURRAY, 604 CENTRAL AVE., EAST ORANGE, N. J.
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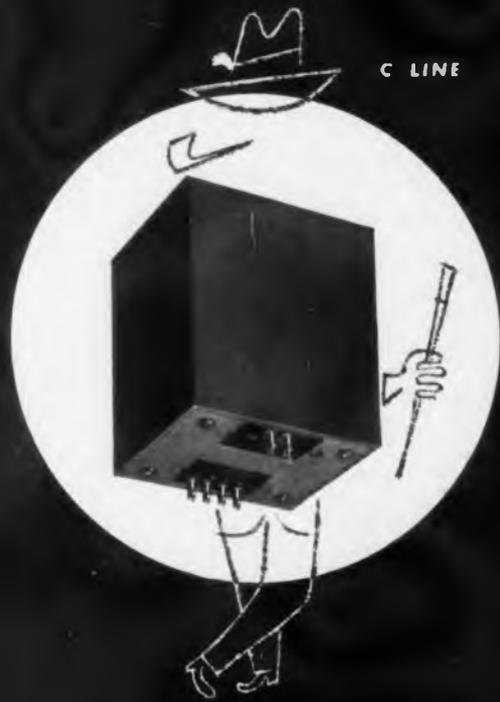
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Completely hermetically sealed to meet MIL-T-27 specifications. Military Standard types are included. Catalog Listing M L



MEETS ALL CIVILIAN REQUIREMENTS

A complete line to MIL electrical specifications, housed in conventional cases. Satisfactory performance at substantial savings. Catalog Listing C L

HOUSED IN CASES WITH STANDARD MIL-T-27 DIMENSIONS, BOTH LINES CARRY THE USUAL KENYON GUARANTEE



The new Kenyon Military and Commercial Lines feature the very latest practice, using the best class "A" wire and insulation now available, and the latest types of core material, to obtain minimum size at reasonable cost. . . . Cases are identical to the requirements in the MIL-T-27 specification and standard units are finished in a smooth, durable medium gray. Other colors are available on special order. Full rating information and schematic is furnished in the form of a stencil on each case. . . . Special units with other ratings and the same or similar cases are available on short delivery, in any quantity. Class B, class C, and class H units can also be delivered on special order. Where casing is not required yet sealing is important, we recommend our "Ken-Seal" molded transformers, available on special order. Write for catalog. Your inquiry will receive prompt attention.

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Only a few of the many Houston Fearless models are shown here. For complete information on the type of equipment best suited for your particular needs or for help on your special requirements and problems, send the coupon below. Houston Fearless engineers will recommend what is most appropriate and, if desired, plan your entire film processing job for maximum efficiency and highest quality results.

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TO GET
 THE *Best* IN TV
 TRANSMITTING EQUIPMENT...

Compare
 ALL THE FACTS!

THE RIGHT TRANSMITTER FOR YOUR "SPECIAL" NEED

Standard Electronics offers you the most adaptable VHF equipment in the industry today . . . to solve your station's expansion problems on the basis of individual needs and market requirements.

For example, to start television service, you may choose an economical, trouble-free 5 or 10 KW 100% air cooled S-E transmitter. Later, go to 20, 25, 40 or 50 KW output, simply by adding a matching S-E amplifier. You get the right combination of the best equipment to give you the ERP you need at any time.

For television stations now on the air who want to improve their competitive status with a maximum power signal . . . Standard Electronics offers a complete line of 100% air cooled amplifiers . . . DESIGNED TO DRIVE DIRECTLY FROM YOUR PRESENT TRANSMITTER, whatever its make . . . with no need to replace any part of your existing equipment. YES, EVEN IF YOU HAVE A 2 KW TRANSMITTER, IT CAN BE EXPANDED TO 20 KW WITH ONLY THE ADDITION OF A S-E AMPLIFIER. Your high power broadcasts can begin SOON . . . because Standard Electronics has a reputation for deliveries ON TIME, as promised.

Compare true equipment costs . . . not just initial cost . . . but also tube replacement and power consumption costs. (Within a five year period, an S-E 50 KW-VHF transmitter can save you up to \$120,000 in operating expenses alone.)

Compare circuitry . . . layout and control simplicity . . . ease of maintenance.

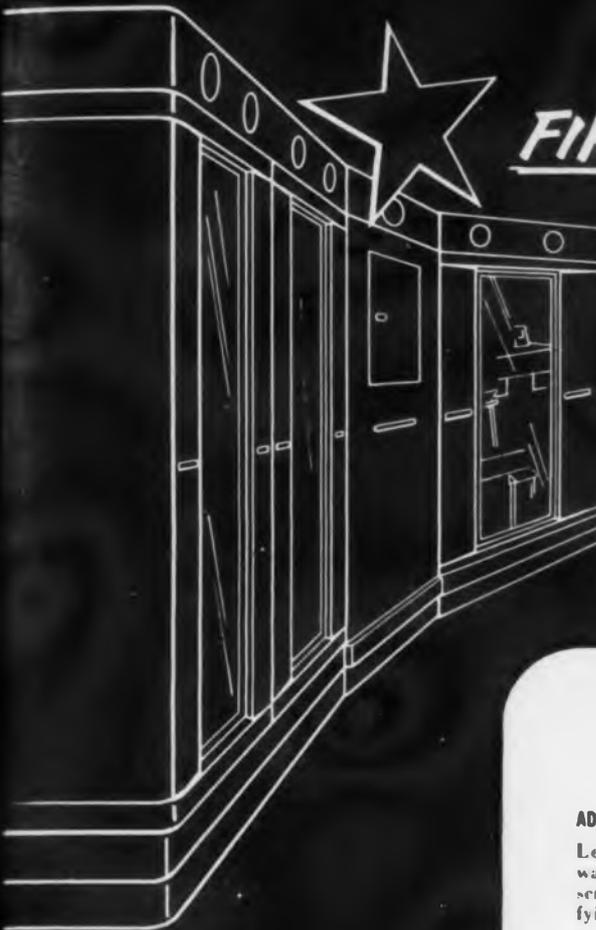
Consider the advantages of S-E's "Add-A-Unit" design that makes it easy for any station to expand to higher power . . . and compare delivery schedules for both complete transmitters and high power amplifiers.

Get all the facts . . . and let them help you decide truly which transmitter best serves your needs.

Comparison Chart of VHF High Power Transmitters

	S-E Transmitter	Transmitter B	Transmitter C	Transmitter D
AMPLIFIER DRIVES WITH 5 KW	★ YES	NO	YES	YES
AMPLIFIER WILL OPERATE WITH ANY MAKE DRIVER	★ YES	NO	NO	NO
TUBE COST <small>(complete set FCC spare)</small>	★ \$6,138 \$1,495	\$11,425 \$4,237	\$12,230 (est) \$6,429 (est)	\$9,250 (est) \$5,050 (est)
AIR COOLED	★ YES	YES	NO	NO
POWER LINE REQUIREMENTS <small>(at blank level)</small>	208/230 V ★ 60 cy, 3 φ 145 KW	460 V 60 cy, 3 φ 193 KW	208/230 V 60 cy, 3 φ 150 KW (est)	208/230 V 60 cy, 3 φ 165 KW (est)
FLOOR AREA <small>(including power equipment, blowers, etc.)</small>	★ 152 sq. ft.	154 sq. ft.	160 sq. ft. (est)	—
ALL TUBES VISIBLE FROM FRONT	★ YES	NO	NO	NO
SELF CONTAINED <small>(no separate enclosures, vaults, pumps, etc.)</small>	★ YES	NO	NO	NO
INDIVIDUAL CHASSE CONSTRUCTION	★ YES	NO	NO	NO
INTERUNIT CABLING WITHOUT TRENCHES	★ YES	NO	NO	NO

FIRST WITH 50 KW Transmitter deliveries



Transmitter room of WOR-TV's new Empire State 40 KW transmitter, 130 KW ERP, 100% air cooled. Completely self-contained. Equipment throughout by Standard Electronics.

Only STANDARD ELECTRONICS
has these exclusive features

ADD-A-UNIT DESIGN

Lets you go from 500 watts to 50 KW without scrapping or even modifying a single piece of equipment.

VERSATILE AMPLIFIERS

S-E's Add-A-Unit amplifiers can be added to existing equipment regardless of make. Any 5 or 10 KW transmitter will drive a 10 or 50 KW S-E amplifier. Any 2 or 5 KW transmitter will drive a 20 KW S-E amplifier.

ECONOMICAL INSTALLATION

Fewer building alterations. Units fit any station layout.

ADVANCED STYLING

Modern cabinetry by Dreyfuss, leading industrial designer.

SELF-CONTAINED

Compact. No external blowers or external vaults needed.

LOWER OPERATING COSTS

Similar tube types throughout. Low emission visual tubes interchangeable.

able with aural section where power requirements are less. Lower initial tube cost, AND LONG LONG HOURS OF LIFE. Lower power consumption too, saving many dollars on your power bill.

ACCESSIBLE

All tubes visible and accessible from the front via full length glass doors.

COLOR ADAPTABLE

Elimination of back porch clamp insures proper operation with color signals.

S-E's BLUE STAR STATIONS

Using Standard Electronics' high power transmitters and amplifiers to obtain maximum power authorized by the FCC

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WABT • Birmingham • Channel 13
40 KW - 316 KW ERP
- ★ **CROSLY BROADCASTING CORP.**
WLW-A • Atlanta • Channel 11
50 KW - 316 KW ERP
- ★ **GENERAL TELERADIO** • **WOR-TV**
Empire State Building • New York
Channel 9 • 40 KW - 130 KW ERP



with high power



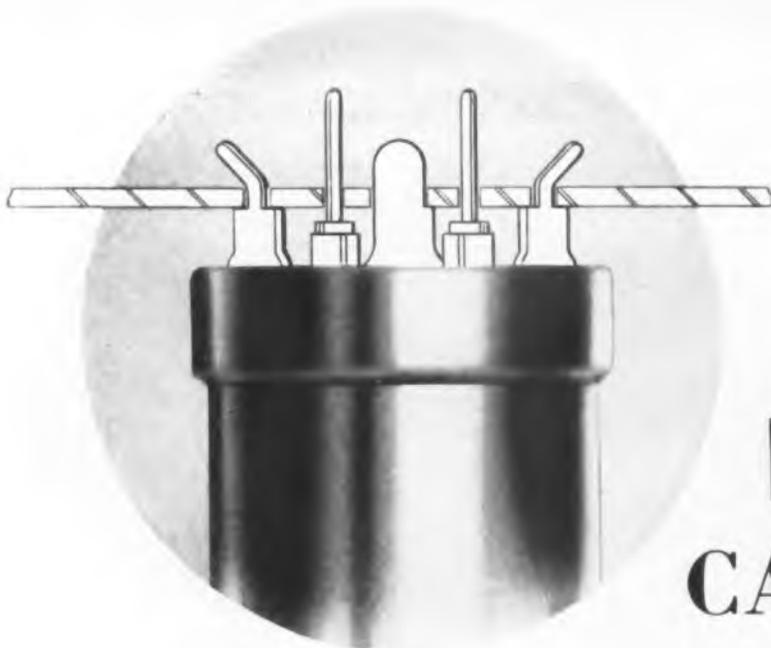
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devoted exclusively to the engineering, manufacturing, and servicing of equipment for the broadcast and television industry



P. R. MALLORY & CO. Inc.
MALLORY
CAPACITORS

designed for easy mounting
 on printed circuits



A new line of Mallory FP Electrolytic Capacitors features mounting prongs and terminals specifically designed for use with printed electronic circuits. These new features give you practical, fool proof mounting—plus the high standards of performance which have earned FP Capacitors outstanding acceptance by leading manufacturers.

Note the shoulders cut in the mounting tabs, to hold the capacitor clear of the chassis. You can print the circuit on *both* sides, without danger of shorting against the case.

Keyed mounting tabs assure correct positioning. Solder terminals are smaller... save chassis space, need only a small solder drop to hold securely.

To give a strong mechanical mounting, the prongs can be spread conveniently by means of a simple jig. Aluminum risers from the foil stop short of the soldering area of the terminal... can't contaminate the solder.

Write or call us for complete technical information, and for cooperative engineering analysis of your specific capacitor application.

**FOR USE ON
 CONVENTIONAL CHASSIS**



The same special FP Capacitors are also usable on any metal chassis, for service replacement or other applications where they can be individually mounted. For production line use on conventional chassis, the standard Mallory FP Capacitors are recommended.

Expect more... Get more from **MALLORY**

Parts distributors in all major cities stock Mallory standard components for your convenience.

Serving Industry with These Products:

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From "The House of Resistors"*
comes...

Precise CONTROL

★ Series 52 potentiometers are available in 1 to 18 section linears. Single shaft, simultaneously controlled.

★ Prong terminals engage with corresponding jacks for plug-in circuitry.

★ Overall tolerances to plus/minus 0.5% where resolution permits. Voltage ratio accuracy of 0.005.

★ Molded low-loss mica-filled phenolic casings. Corrosion-resistant materials and plating throughout.

★ Life of over 1,000,000 cycles. These controls exceed applicable JAN-R-19 specifications.



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Series LC	<input type="checkbox"/>
Series C	<input type="checkbox"/>
Series Push-On	<input type="checkbox"/>
Coaxial Cable Fittings	<input type="checkbox"/>
Coaxial Cable Adapters	<input type="checkbox"/>

BOOKS

Introduction to Color TV
 By Milton Kaufman and Harry E. Thomas.
 Published 1954 by John F. Rider, Inc.,
 180 Canal St., New York 13, N.Y. 140
 pages. Price \$2.10.

Here is one of the first books to present the overall concepts and equipment descriptions of the fast growing color TV medium. In concise form, the text and illustrations explain the fundamentals of color, the NTSC system, tri-color picture tubes, the color receiver, and receiver circuitry and adjustment. The book is written on an intermediate technical level, which should enable any electronic engineer to obtain a firm grasp of the basic elements of "tinted TV." The part of the text which examines the functions of the various receiver sections is very helpful. Since the book is only intended to be an introduction, complex data of an advanced nature is omitted. However, there are a few essential items which could have been included, such as the CIE chromaticity diagram. Nevertheless, this volume is a most worthwhile contribution to the infant color TV field, and is to be highly recommended. AJF

Electronics
 By Geo. F. Corcoran and Henry W. Price, Published 1954 by John Wiley & Sons, Inc., 480 4th Ave., N.Y., N.Y. 459 pages. Price \$7.00

This book will appeal to the electrical engineer who finds himself becoming increasingly involved in the electronic field. It is written with particular emphasis on the circuitry aspect of the subject and considerable space is devoted to graphical representation of the principles involved.

A brief discussion of mobile charges and vacuum tube-diode characteristics opens the book, and from this basis, the authors go on to detailed analyses of the more common circuits. Although the text is intentionally not pointed at specific equipment, the circuits which are used to illustrate the subject matter are recognizable as prototypes of systems in general use. In other words, this book is, in every sense, functional.

The authors have included a particularly detailed discussion of transistors, diodes, and similar semi-conductors, with emphasis on their application to certain circuits.

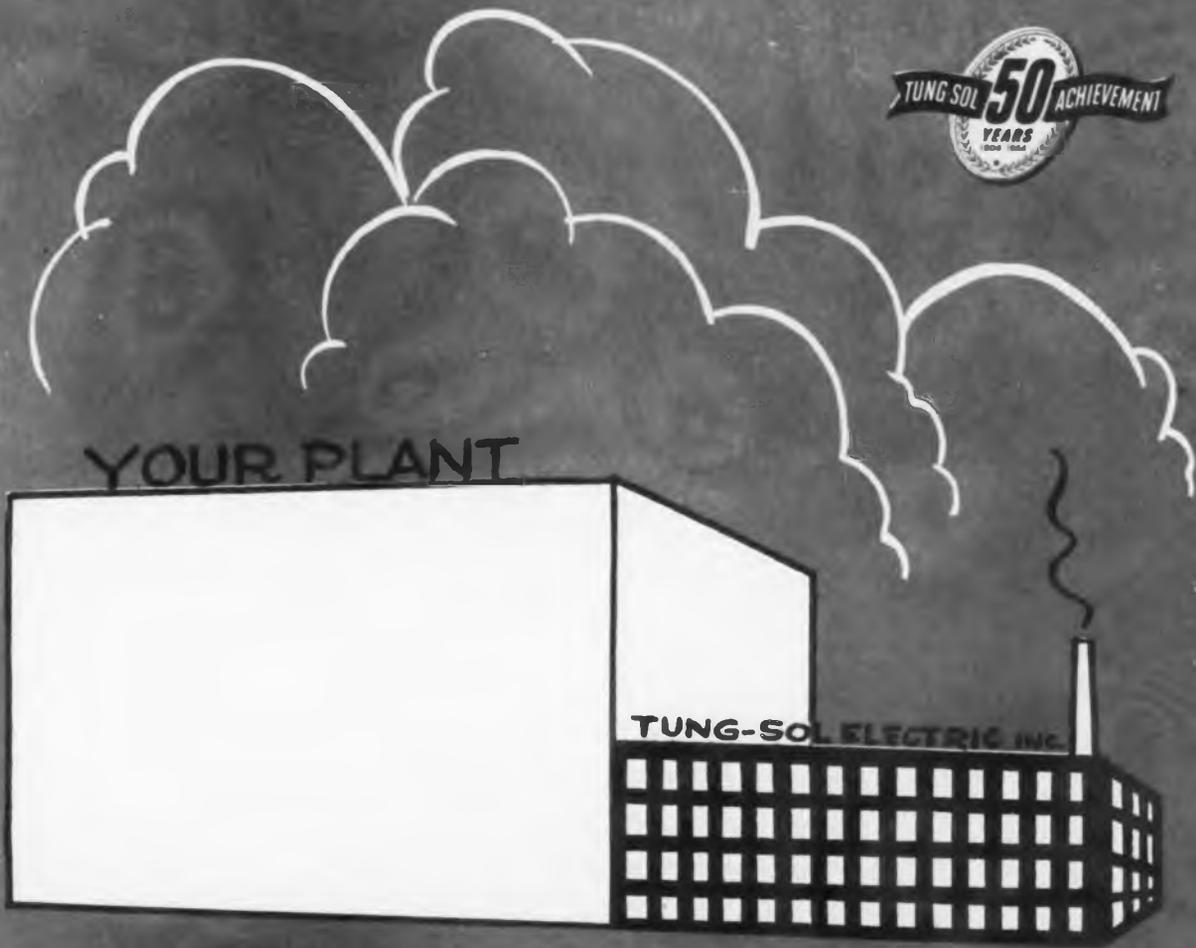
Of equal importance to the engineer are discussions of servo operation, thyatron characteristics, feed back problems and cathode followers.

CMM

BOOKS RECEIVED

Chamber's Shorter Six-Figure Mathematical Tables
 Compiled by L. J. Comrie. Published 1954 by Chemical Publishing Co., Inc., 212 Fifth Ave.,

(Continued on page 64)



Our plant becomes an extension of your plant

Our engineering and manufacturing facilities can make our plant a vital extension of your plant. We make nothing but electron tubes—no sets—no equipment. We are completely independent, so we are in a position to keep your plans in strict confidence—to work with you with as much loyalty and secrecy as if we were in your own organization.



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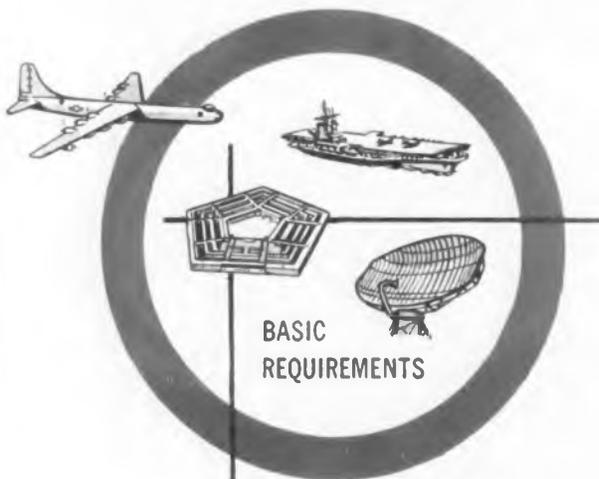
Sales Offices: Atlanta, Chicago, Columbus, Culver City (Los Angeles), Dallas, Denver, Detroit, Newark, Seattle.

TUNG-SOL MAKES All-Glass Sealed Beam Lamps, Miniature Lamps, Signal Flashers, Picture Tubes, Radio, TV and Special Purpose Electron Tubes and Semiconductor Products.



Automatic testing and recording permits accurate evaluation of greater numbers of resistors.

ONLY IRC MAKES SO MANY JAN AND



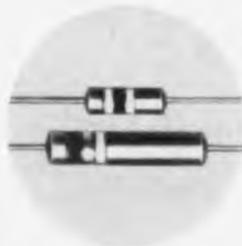
JAN and MIL Specifications are basic guideposts for electronic advancement, whether used as engineering reference points or as procurement standards. IRC's dual emphasis on mass production and frequent, accurate performance testing assures you of the highest performance standards at the lowest possible cost.

56 different IRC resistors is today's figure—
all equivalent to JAN or MIL specifications. And all are standard units, available on excellent delivery cycle! If you manufacture end-equipment for the armed forces and must meet these specifications, or if you apply them as standards to your own requirements, depend on IRC for everything you need. For, manufacturing the widest line of resistors in the industry—127 different types in all—IRC is logically your best source of JAN and MIL type units.



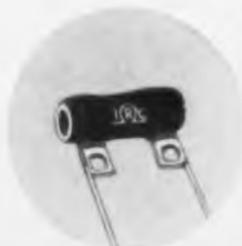
JAN-R-29 specification

For all requirements of JAN-R-29 Specification, Amendment 4, IRC sealed precision Voltmeter Multipliers function efficiently even when exposed to the most severe humidity. Used with 1-milliampere DC instruments, they enable voltage measurements to be made up to 6000 volts. Send for Bulletin.



JAN-R-184 specification

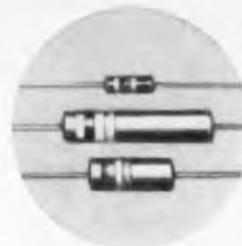
Unusually stable and inexpensive, IRC BW Wire Wounds meet JAN-R-184 Specification, Amendment 5, at 1/2 and 1 watt. Resistance element is uniformly and tightly wound on insulated core. Molded housing provides full insulation. Widely used in meters, analyzers, high stability attenuators, low-power ignition circuits, etc. Send for Bulletin.



MIL-R-26B specification

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MIL-R-11A specification

IRC Advanced BT Resistors meet and beat MIL-R-11A Specification, Amendment 2. Filament-type resistance element and other exclusive features afford extremely low operating temperature and superior power dissipation in a compact, light, fully insulated unit. Available at 1/4, 1/2 and 1 watt to MIL specification and 2 watts to commercial specification. Send for Bulletin.

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Precision Wire Wounds • Ultra HF and Hi-Voltage Resistors • Selenium Rectifiers • Insulated Chokes • Hermetic Sealing Terminals •



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Rugged construction—tough and resilient; withstands constant vibration.

Type HS-1 Feed-Thru Terminals, provide assured hermetic sealing for electrical and electronic components. Exclusive IRC molding Technique bonds Kel-F* to metal in a superior seal. Designed to the sealing requirements of MIL-B-ET. Send coupon for full data.

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INTERNATIONAL RESISTANCE CO.
407 N. Broad St., Philadelphia 8, Pa.

In Canada: International Resistance Co., Ltd., Toronto, Licensee

Send me data on MF Voltmeter Multipliers, BW Resistors, Power Wire Wounds, Advanced BT Resistors, HS-1 Terminals.

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Title _____

Company _____

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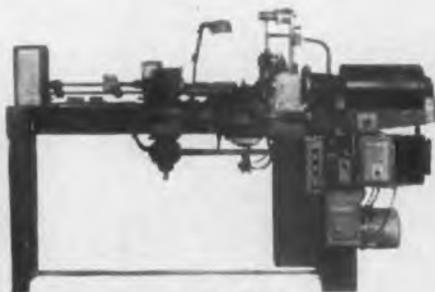
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3-piece lead wires welded per hour for
miniature receiving tubes!

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filaments per hour, depending on
wire diameter!

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RPM on Kahle Grid Winding Machine

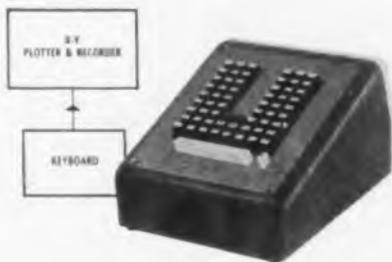
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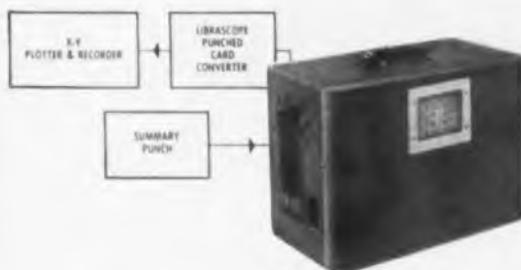
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DECIMAL KEYBOARD: Consists of a three-decimal bank for each axis with associated plus-minus keys. Depressing plot bar initiates plot and clears keyboard automatically. Also manual clear button. Size: 8½ x 11 in., Weight: 12 Lbs.



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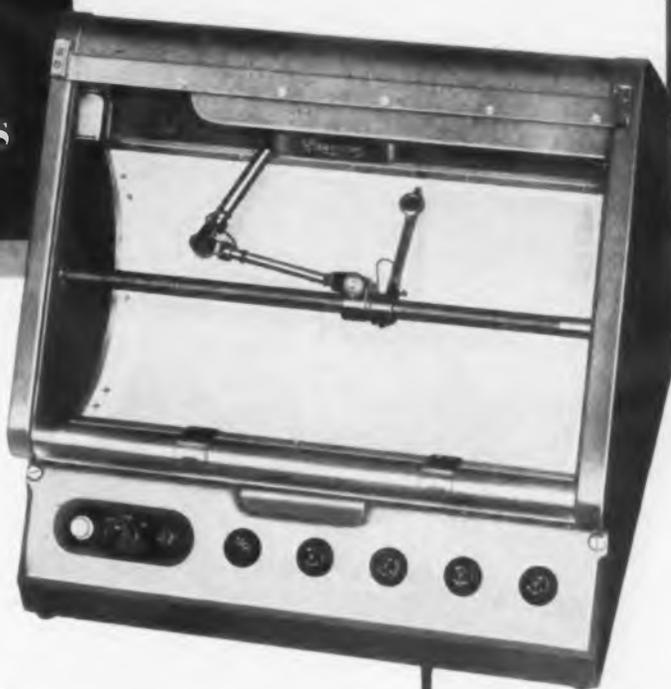
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A compact, desk-size unit that accepts either analog or digital inputs. Standard digital converters: Decimal keyboard, Decimal punched card, and Binary for Computer Outputs. Handles remote mechanical shaft rotations directly without modification. Modifications available to customer specifications. Full chart visibility allows observer to view curve generation at all times. Unique pen travel for fast, dependable performance. Write for full catalog information.



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BOOKS

(Continued from page 58)

New York 10, N.Y. 387 pages. Price \$6.50. Tables for precise computation include logs, trig functions, circular functions, exponential and hyperbolic functions, powers, roots, reciprocals, factorials, prime numbers, interpolation, numerical differentiation and integration, proportional parts, and conversion tables.

Electronics

By Thomas B. Brown. Published 1954 by John Wiley & Sons, Inc., 440 4th Ave., N.Y., N.Y. 545 pages. Price \$7.50. A practical course in electron-tube theory at the engineering level which includes treatment of a number of modern developments: reflex klystrons, magnetron, Eccles-Jordan (flip-flop) circuits, cathode follower circuits, transistors, crystal rectifiers and a brief description of computers.

Investigation of Electron Tube Reliability in Military Applications

General Report No. 1 Published 1954 under contract N01bar-52372 by Aeronautical Radio Inc., 23 I. Street, N.W., Washington 5, D.C. 97 pages. Price \$0.50. This report describes surveillance of electron tube performance at Air Force, Army and Navy bases and presents conclusions and recommendations.

Damages Resulting from Laboratory Vibration and High-Impact Shock Tests

Published 1953 by Department of Navy, Bureau of Ships, Washington 25, D.C. 36 pages. An unclassified report presenting conclusions of a study of 270 individual equipments subjected to Navy vibration and shock tests

Protection Against Betatron-Synchrotron Radiations up to 100 Million Electron Volts

Prepared as a National Bureau of Standards Handbook from recommendations made by the National Committee on Radiation Protection. Published by the Government Printing Office, Washington 25, D.C. 52 pages. Price 25c. The protection requirements for operating personnel and the public against the potential hazards of the high energy electron accelerators of the betatron and synchrotron type.

Statistical Theory of Extreme Values and Some Practical Applications

By E. J. Gumbel, as part of the National Bureau of Standards Applied Mathematics Series 33. Published by the Government Printing Office, Washington 25, D.C. 51 pages. Price 40c. Comprehensive statistical treatment of the asymptotic theory of extremes, which treats natural phenomena as extremes of large samples.

Applied Electronics Annual 1953-54

Edited by R. E. Blaise. Published by British Continental Trade Press Ltd., 222, Strand, London, W.C. 2. Price £1. This new edition includes, for the first time, a chapter on new devices and components of general interest, also a "Who's Who" for the electronic industry. Available in the U.S. from J. D. Griffiths, 3606 Parkwood Drive, Greensboro, N. C.

Electronics

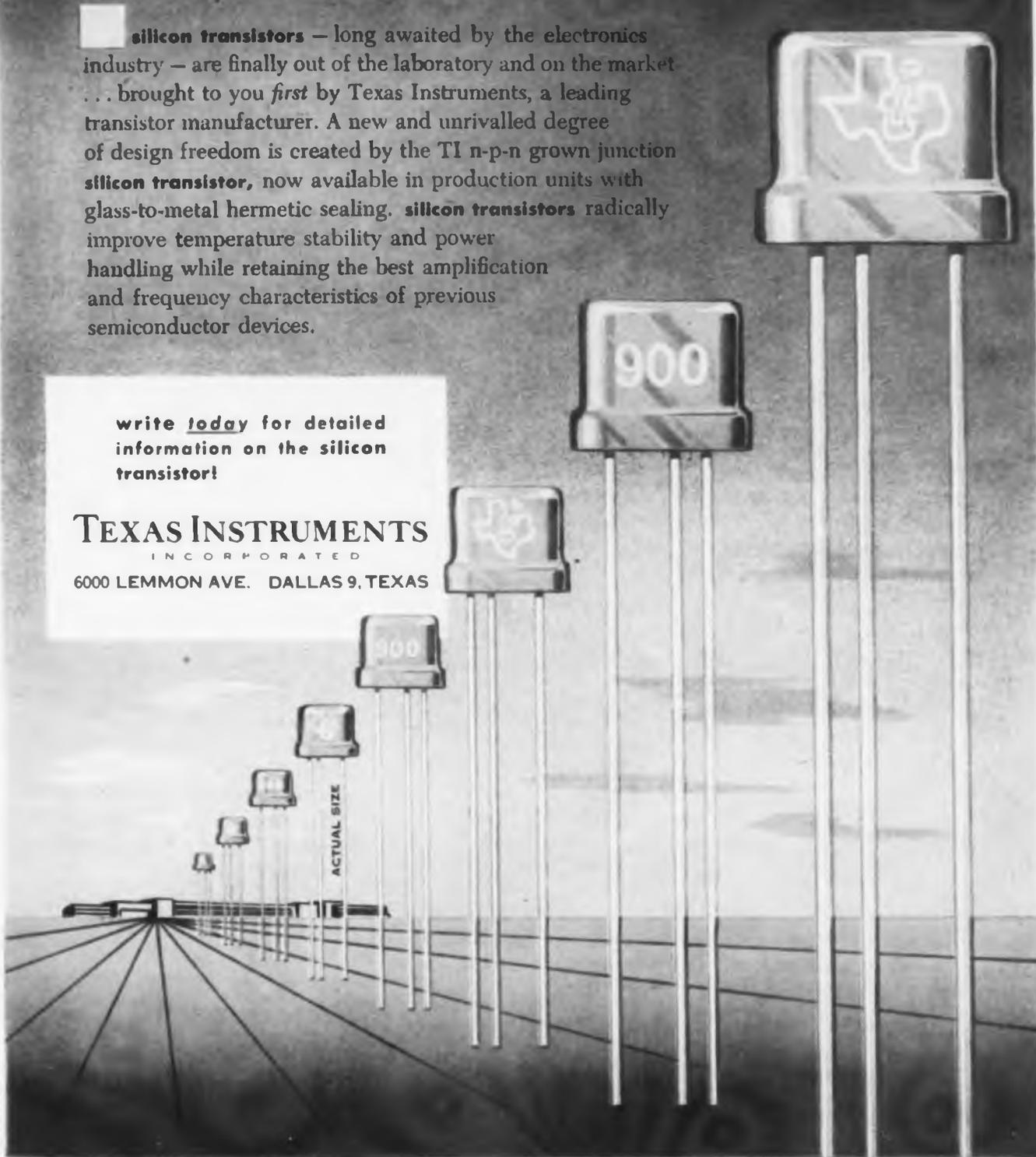
By A. T. Starr. Published 1954 by Sir Isaac Pitman & Sons, Ltd., Pitman House, Parker St., Kingsway, London, W.C. 2. Distributed in the U.S. by Pitman Publishing Corp., 2 W. 45th St., N.Y., N.Y. 395 pages. Price \$7.50. Written by an eminent British authority, this book is distinguished by the all-inclusive nature of its content. Essentially a mathematical treatment of electronics, it includes thermocouples, magillip or solayns, induction heating, and delay lines. Particularly interesting is a large section devoted to the Fourier analysis and Laplace transforms.

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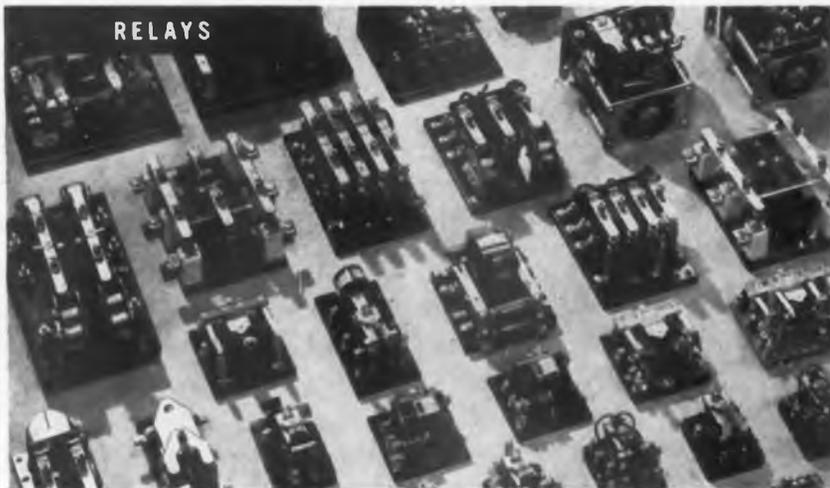
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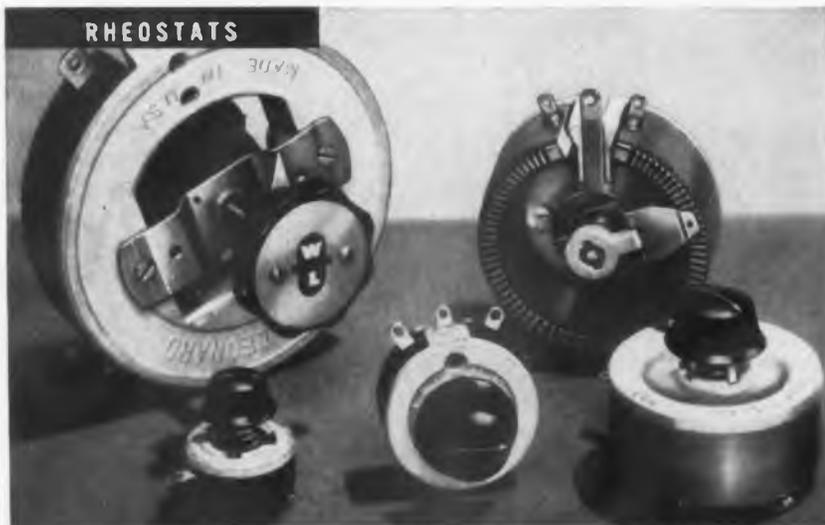
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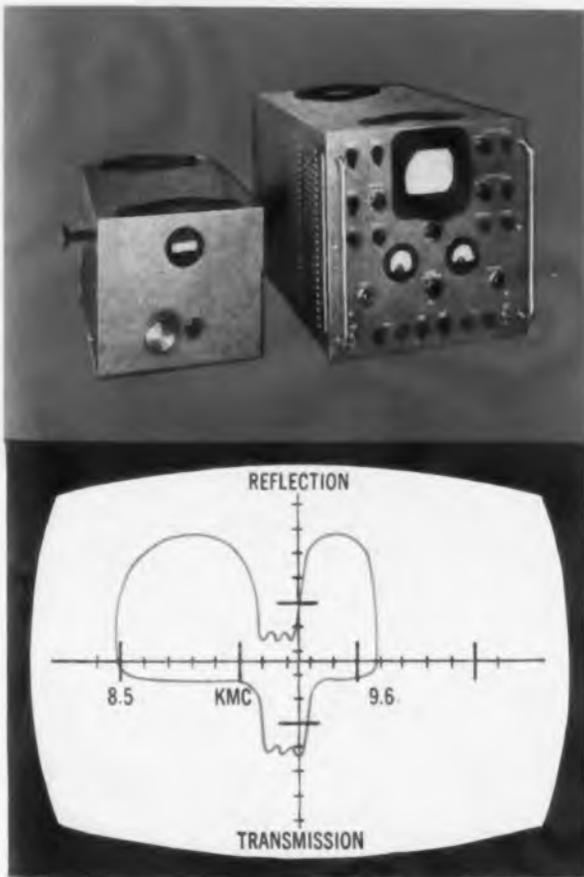
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wide band--8500 to 9600 mc;
output constant within one db;
for dynamic testing of microwave
components and systems



Now, for the first time, an instantaneous graphic display of the entire frequency range 8500 to 9600 MCS. This new Polarad X-Band Sweep Oscillator makes possible rapid, dynamic testing of microwave components such as TR tubes, antennas, crystal mounts, even complete microwave systems over a 1100 MC sweep at X-band. Eliminates laborious point-by-point testing methods. A unique display unit shows both reflection and transmission characteristics simultaneously, since two deflection amplifiers are utilized.

The X-Band Sweep Oscillator is an important instrument for laboratory and production line application. It gives one quick answer where formerly hours of checking were necessary. For further information, write to your nearest Polarad representative or the factory.

A Typical Scope Display (at left)
Shows transmission and reflection characteristics of a double tuned cavity under test. This is an example of how the dynamic display reduces time required to test X-band components and systems. As a design tool in the laboratory, the effects of electronic or mechanical changes may be evaluated instantaneously. As a production tool, "go" and "no go" limits may be checked visually.

SPECIFICATIONS	
Frequency Range	8.5 to 9.6 KMC
Output	+ 12 dbm minimum into matched load
Output Variation	+ 1 db maximum
Sweeper Rate	12 cycles per second
Operating Voltage	115 V ± 10%
Input Power	400 watts
Type of Output Connector	UG-52A-U
Size of Control and Display Unit	15 1/2" wide x 20 1/2" deep x 16 1/2" high
Size of Sweeper Oscillator	12" wide x 16 1/2" deep x 12" high
Approx. Wt. of Control and Display Unit	135 lbs
Approx. Wt. of Sweeper Oscillator	55 lbs



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RCA DESIGNER'S NEWS

—from the RCA Tube Division

New "Premium" Miniature Twin Triodes for Military and Industrial Applications



*6101/6J6WA
Military Control
Type. For
government and
use only.

RCA-6101 and 6101/6J6WA* are medium-mu triodes designed principally for use as class A amplifiers and control tubes in mobile and aircraft equipment where uniformity of characteristics and dependable performance under shock and vibration are essential requirements. The tube can withstand an impact acceleration of 500 G max. and vibrational acceleration of 2.5 G max. Developed from the type 6J6, these "premium" types incorporate many structural improvements, and undergo stringent production controls and rigorous tests during and after manufacture.

New "Mighty Midget" Speaker for "Pocket-Personal" Radios



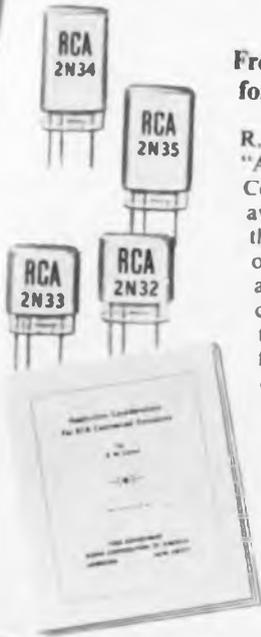
Contoured for economy of space, this new RCA-222S1 PM speaker features a 2 1/2-in. cone and measures only 2 3/4 in. in diameter by 1 1/4 in. in depth. The weight is only 4.6 ounces, including a 1.0-ounce Alnico V magnet for high efficiency. Frequency range is 300-3500 cps and the voice-coil impedance is 12 ohms. Life-tested at 250 milliwatts, the speaker is designed for long trouble-free service in applications where space is at a premium.

New Dual-Band Oscilloscope for Color and Black-and-White TV



The new WO-78A 5-inch Oscilloscope permits accurate voltage measurements of TV signals throughout the video range in both color and black-and-white receivers. In the wide-band position, the WO-78A has a response flat within -1 db, from 3 cps to 4.5 Mc, with sensitivity of 0.1 volt peak-to-peak per inch (0.035 volt rms per inch). In the narrow-band position, sensitivity is 0.01 volt peak-to-peak per inch. Phase characteristics are excellent throughout entire frequency range.

Free Paper on Application Considerations for RCA Commercial Transistors



R. M. Cohen's popular technical paper entitled "Application Considerations for RCA Commercial Transistors" is now available on request. Included in the contents are: descriptions of problems involved in the application of RCA point-contact and junction type transistors and typical circuits for af and rf amplifiers, rf oscillators, and "flip-flop" circuits—as well as performance data for these circuits. For your free copy fill out coupon—or write for Reprint ST-817 to RCA, Commercial Engineering, Harrison, N.J.

New 90° Deflecting Yoke for Full Screen Focus



The new RCA-220D1 yoke is designed for rectangular-type 90° kinescopes operating at ultor voltages up to 18 kv. A ferrite core and precision-shaped cosine-type windings, treated with anti-corona silicone resin, provide high efficiency and good side and corner resolution. Molded insulation is employed to withstand the high peak voltage between the horizontal and vertical coils. The 220D1 is designed for use with the RCA-238T1 and RCA-239T1 horizontal-output and high voltage transformers.



RADIO CORPORATION OF AMERICA
ELECTRON TUBES

TELE-TECH & ELECTRONIC INDUSTRIES • June 1954

RCA Tube Division
Commercial Engineering, Section F119, Harrison, N. J.

Please send me technical data on:

RCA-6101
 Transistor Reprint ST-817
 RCA-222S1 "Mighty Midget" Speaker

RCA-220D1 Yoke
 WO-78A Oscilloscope

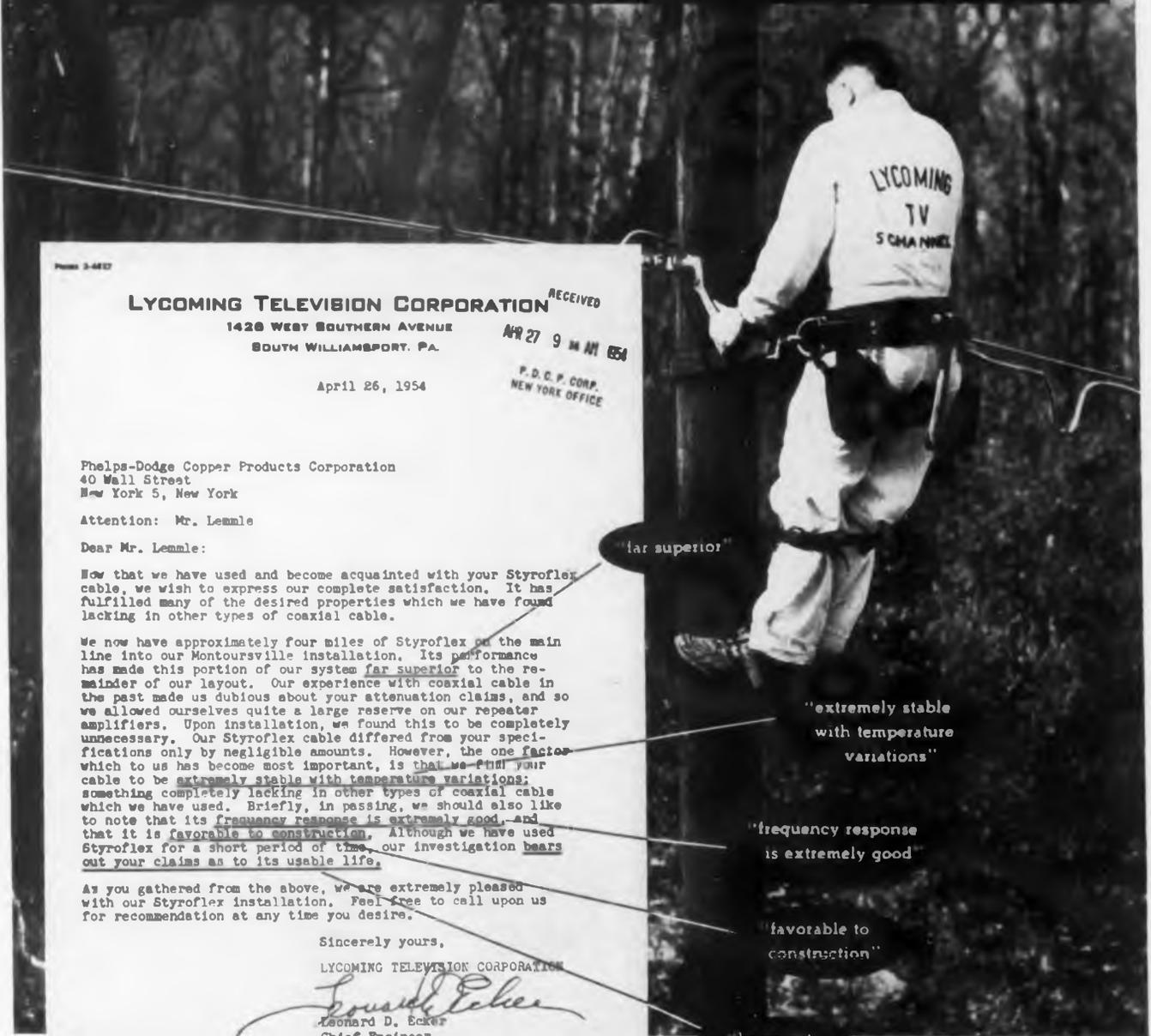
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For product information, use literature card on last page. 69

Styroflex Coaxial Cable

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COMMUNITY ANTENNA SYSTEMS



Form 3-4817

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April 26, 1954

Phelps-Dodge Copper Products Corporation
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New York 5, New York

Attention: Mr. Lemle

Dear Mr. Lemle:

Now that we have used and become acquainted with your Styroflex cable, we wish to express our complete satisfaction. It has fulfilled many of the desired properties which we have found lacking in other types of coaxial cable.

We now have approximately four miles of Styroflex on the main line into our Montoursville installation. Its performance has made this portion of our system far superior to the remainder of our layout. Our experience with coaxial cable in the past made us dubious about your attenuation claims, and so we allowed ourselves quite a large reserve on our repeater amplifiers. Upon installation, we found this to be completely unnecessary. Our Styroflex cable differed from your specifications only by negligible amounts. However, the one factor which to us has become most important, is that we find your cable to be extremely stable with temperature variations; something completely lacking in other types of coaxial cable which we have used. Briefly, in passing, we should also like to note that its frequency response is extremely good, and that it is favorable to construction. Although we have used Styroflex for a short period of time, our investigation bears out your claims as to its usable life.

As you gathered from the above, we are extremely pleased with our Styroflex installation. Feel free to call upon us for recommendation at any time you desire.

Sincerely yours,
LYCOMING TELEVISION CORPORATION
Leonard D. Ecker
Leonard D. Ecker
Chief Engineer

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"far superior"

"extremely stable with temperature variations"

"frequency response is extremely good"

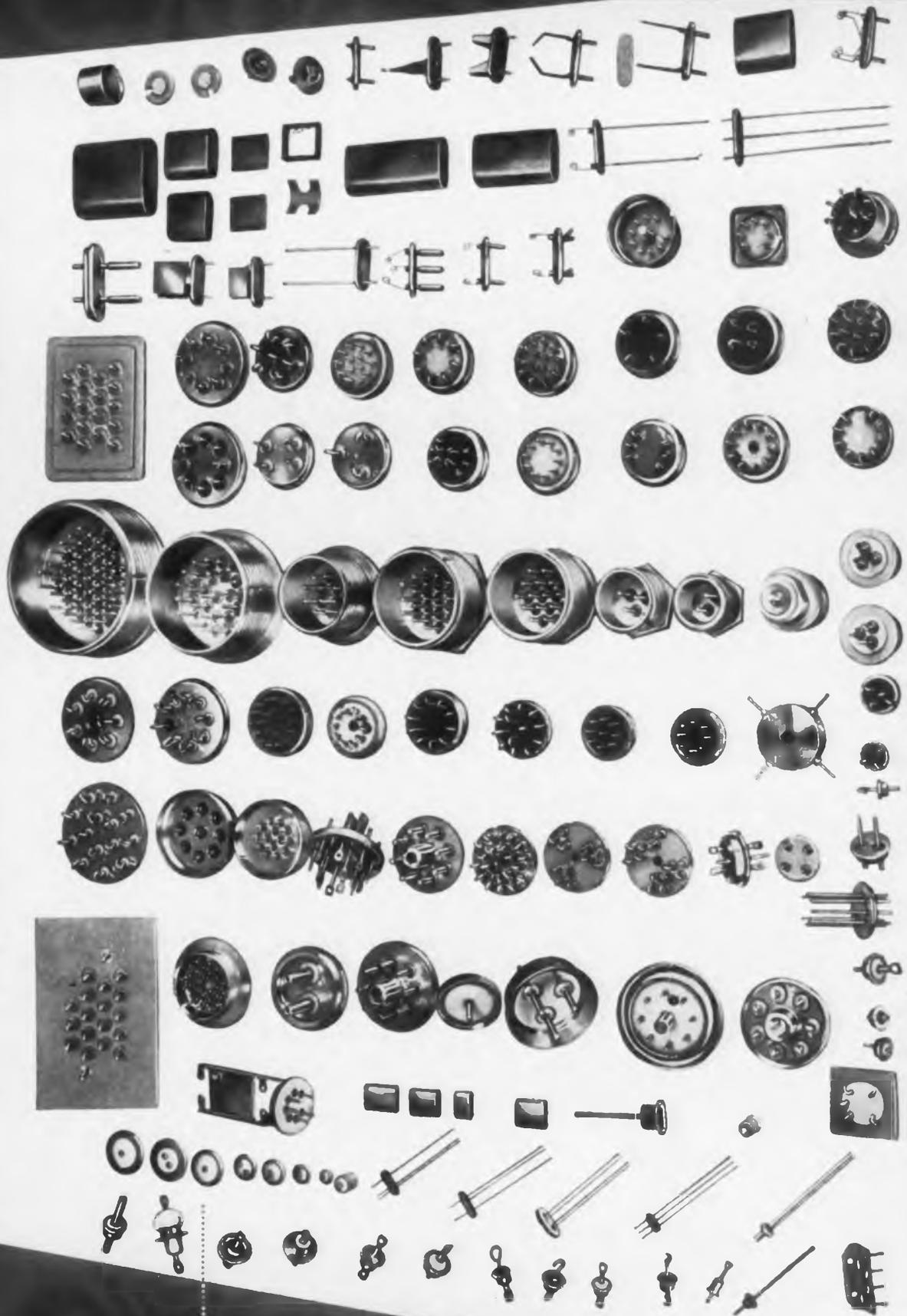
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"bears out your claims as to its usable life"

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The Pocket-Size Oscilloscope



...light... compact... accurate... portable

Featuring small size, light weight and outstanding performance the HIGH, WIDE and TWIN POCKETSCOPES have become the "triple threat" of the oscilloscope field. Their incomparable versatility, reliability and accuracy have skyrocketed this team of truly portable instruments into unparalleled demand. Each oscilloscope features DC coupled amplifiers in both vertical and horizontal channels.

HIGH

The S-14-A HI-GAIN POCKET-SCOPE provides the optimum in oscilloscope flexibility for analysis of low-level electrical impulses. Extremely light weight (12 $\frac{3}{4}$ lbs.), compact in size (12 x 5 $\frac{3}{4}$ x 7 in.), dependable and accurate in performance. Vertical and horizontal channels: 10mv rms/inch with response within 2DB from DC to 200 KC and pulse rise of 1.8 μ s . . . non-frequency discriminating attenuators and gain controls with internal calibration of trace amplitude . . . repetitive or trigger time base with linearization from $\frac{1}{2}$ cycle to 50 KC with \pm sync or trigger.

WIDE

The S-14-B WIDE BAND POCKETSCOPE is ideal for investigations of transient signals, DC signals, aperiodic pulses or recurrent waveforms. Vertical channel: 50 mv rms/in. within -2DB from DC to 700 KC . . . pulse rise time of 0.35 μ s. Horizontal channel: 0.15v rms/in. within -2DB from DC to 200 KC . . . pulse rise of 1.8 μ s. Attenuators and gain controls are non-frequency discriminating . . . trace amplitude calibration . . . repetitive or triggered time base from $\frac{1}{2}$ cycle to 50 KC . . . \pm sync or trigger . . . trace expansion, filter graph screen and many other features . . . 14 lbs. . . 12 x 6 x 7 inches.

TWIN

The S-15-A POCKETSCOPE is a portable, twin tube, high sensitivity oscilloscope with two independent vertical as well as horizontal channels. It is indispensable for investigation of electronic circuits in industry, school and laboratory. Vertical channels 10

mv rms/in. with response within -2DB from DC to 200 KC and pulse rise time of 1.8 μ s . . . horizontal channels 1v rms/in. within -2DB from DC to 150 KC . . . non-frequency discriminating controls . . . internal signal amplitude calibration . . . linear time base from $\frac{1}{2}$ cycle to 50 KC, triggered or repetitive, for both horizontal channels.

S-11-A

The S-11-A INDUSTRIAL POCKETSCOPE is a small, compact (5x7x11 inches), and lightweight (8 $\frac{3}{4}$ lbs.) instrument for observing electrical circuit phenomena. The flexibility of the POCKETSCOPE permits its use for AC measurements as well as for DC. The vertical and horizontal amplifiers are capable of reproducing within -2DB from DC to 200 KC with a sensitivity of 0.1v rms/in. . . . repetitive time base from 3 cycles to 50 KC continuously variable throughout its range . . . variations of input impedance, line voltage or controls do not "bounce" the signal—the scope stabilizes immediately.



RAYONIC CATHODE RAY TUBES BY WATERMAN

TUBE	PHYSICAL DATA		STATIC VOLTAGE		DEFLECTION*		LIGHT OUTPUT**
	FACE	LENGTH	A3	A2	VERT	HOR	
3JP1	3"	10"	3000	1500	111	150	352
3MP1	3"	8"		750	99	104	33
3RP1	3"	9.12"		1000	61	86	44
3SP1	1.5x3"	9.12"		1000	61	86	44
3XP1	1.5x3"	8.875"		2000	33	80	218

*Deflection in volts per inch.

**Light output of an element of a raster line (one mm long and not exceeding .65 mm in width) in microlumens.

The basic properties of the cathode ray tube that concern the designer or the user are: deflection sensitivity, unit line brightness, line width, static voltage requirements and physical size. A comparison between cathode ray tubes manufactured by Waterman Products Company is shown in the table adjoining. These tubes are available in P1, P2, P7 and P11 phosphors. 3JP1, 3JP7, 3SP1 and 3XP1 are available as JAN tubes.

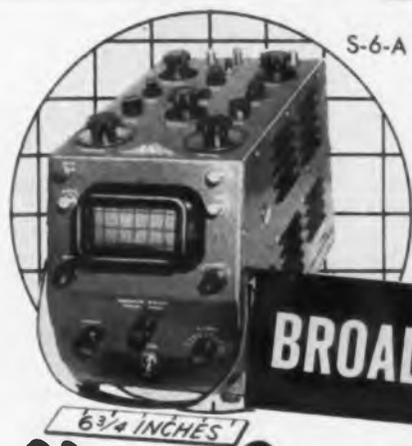
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PULSESCOPE

by

Waterman

The Oscilloscope that Portrays the Pulse



Classic Examples of Precision Engineering...

The PULSESCOPES are cathode ray tube oscilloscopes that portray the attributes of the pulse: shape, amplitude, duration and time displacement. All PULSESCOPES have internally generated markers with the basic difference that in the SAR PULSESCOPE the markers initiate the sweep while in the others the sweep starts the markers.

BROAD

The S-6-A BROAD BAND Scope is a PULSESCOPE in performance, POCKETSCOPE in size. The instrument measures DC as well as AC signals. Unique DC calibration methods permit rapid measurements of either positive or negative, AC or DC signals. Vertical amplifier sensitivity of 0.2v rms/inch, and response to 5 mc within 3DB... pulse rise time of 0.1 μ s... internal markers from 1 to 1000 μ s... repetitive or trigger sweep from 5 cycles to 500 KC with 5X sweep expansion... sweep, marker and DC calibrating voltage available externally. Size 8 1/2 x 6 3/4 x 13 3/4 in. Weight 22 lbs. Operates from 50 to 400 cycles at 115 volts AC.

LAB

The S-5-A LAB PULSESCOPE is a JANized (Gov't Model No. OS-26) portable, AC, wide band-pass, laboratory oscilloscope ideal for pulse as well as general purpose measurements. Internal delay of 0.55 μ s permits observation of pulse leading edge. Includes precision amplitude calibration, 10X sweep expansion, internal trace intensity time markers, internal trigger generators and many other features. Video amplifier 0.1v p to p/inch... pulse rise time of .035 μ s or response to 11 mc. 1.25 to 125,000 μ s triggered or repetitive sweep... internally generated markers from 0.2 to 500 μ s... trigger generator from 50 to 5000 pps. for internal and external triggering. Operates from 50 to 400 cycles at 115 volts AC.

SAR

The S-4-C SAR PULSESCOPE is a JANized (Gov't Model No. OS-4) portable instrument (31.5 lbs.) for precision pulse measurements for radar, TV and all electronic measurements. Portrays all attributes of the pulse... internal crystal controlled markers of 10 and 50 μ s available for self-calibration... in R operation a small segment of the A sweep is expandable for detailed observation with a direct-reading calibrated dial accurate to 0.1%. Video amplifier band-pass up to 11 mc... optional video delay 0.55 μ s... pulse rise and fall time better than 0.07 μ s... R pedestal (sweep) 2.4 to 24 μ s... video sensitivity of 0.5v. p to p/inch. Easily convertible from μ s to yards. Operates from 50 to 400 cycles at 115 volts AC.



RAKSCOPE

Because the panel is only 7" high and fits any standard rack, the S-12-B RAKSCOPE admirably fills the need for a small oscilloscope of wide versatility. With all the features of the S-11-A POCKETSCOPE, the RAKSCOPE is JANized (Gov't Model No. OS-11), and has many additional advantages; the sweep, from 5 cycles to 50 KC, is either repetitive or triggered... vertical and horizontal amplifiers are 50 mv rms/inch with band-pass from 0 to 200 KC... special phasing circuitry for frequency comparison.

WATERMAN PRODUCTS CO., INC.

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CABLE ADDRESS, POKETSCOPE, PHILA.

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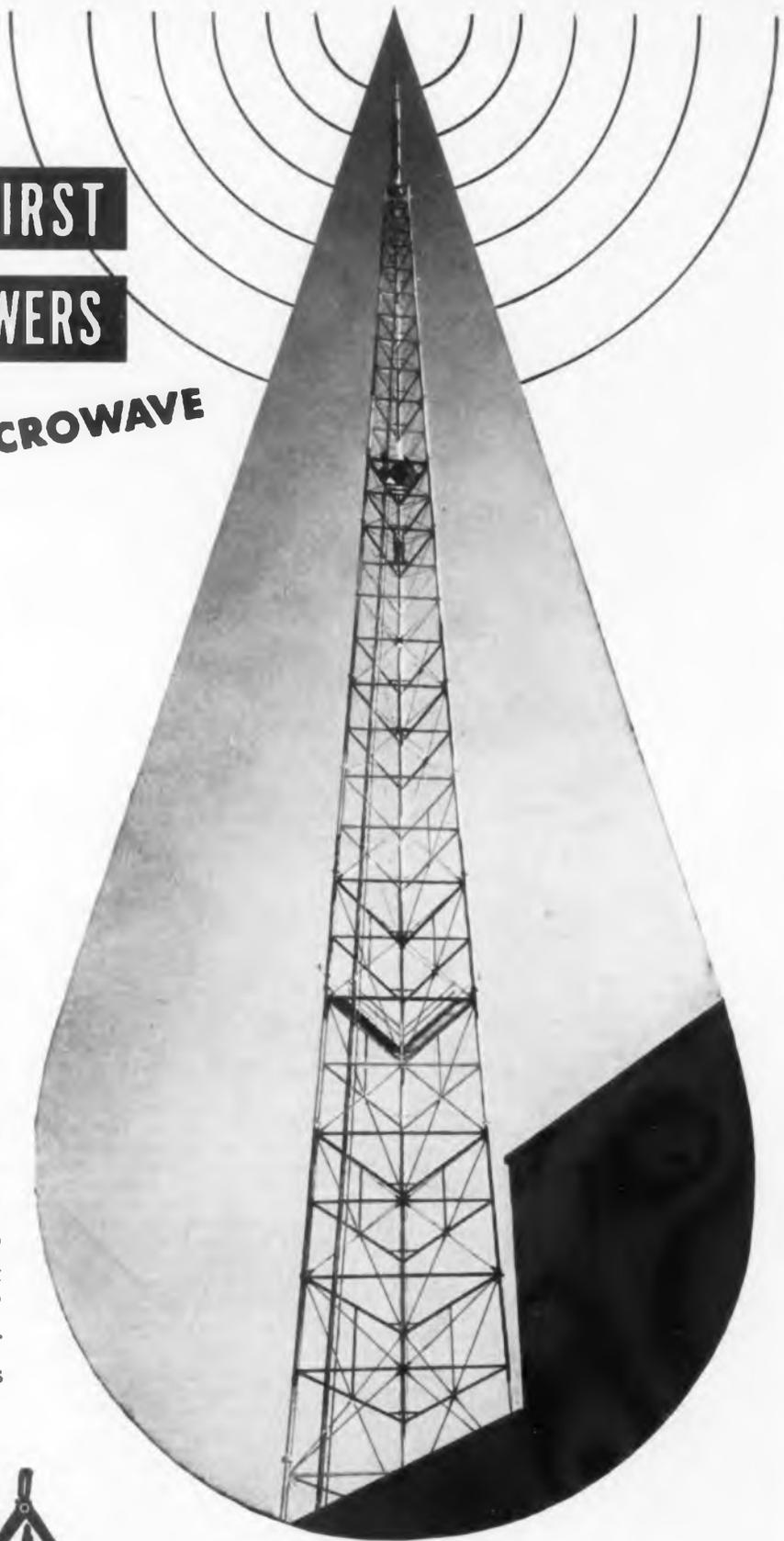
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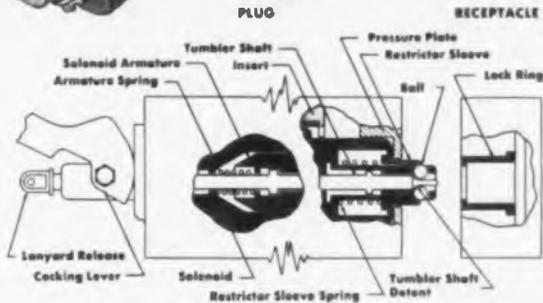
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CANNON PLUGS

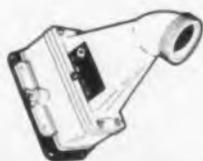


Cannon's type "GM" Guided Missile Connectors, available in more than 10 basic shell designs and a wide variety of disconnect systems, are engineered for guided missile launching under ordinary and hazardous conditions. Built for heavy service duty with shells of durable aluminum alloy and inserts of melamine or laminated phenolic, these sturdy connectors have a maximum current rating of 200a and a nominal flashover value of 5,000v, more than 22 contact layout arrangements accommodating from 8 to 140 contacts. Co-axial, thermocouple or high-current-capacity contacts are available. Many types of Cannon Plugs are used in rocket and missile components. The "GM" Series extends Cannon's policy of complete and comprehensive connector service into the launching phase of guided missile development.

Cannon's Type GMA Plug and Receptacle, equipped with 45 degree endbell. Available either with remote solenoid disconnect mechanism or manual lanyard release. A ball-and-detent type breakaway plug, accommodating from 41 to 140 contacts, ranging in wire size from 0 to #16.

GMAN type . . . ball-and-detent latch . . . lever actuated engagement . . . solenoid or manual release . . . high current contacts and 90 degree angle endbell. Two contact layouts.

GMC type . . . ball-and-detent latch . . . handwheel actuated engagement . . . remote solenoid or manual disconnect . . . equipped with 45 degree endbell. Three contact layouts.



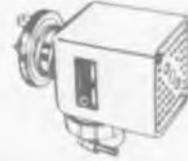
GMJ type . . . sled-and-skid type connector for rack launching . . . skid-way type disconnect . . . longitudinal mounting brackets . . . 60 or 90 degree endbells. Two contact layouts.



GMDA type . . . sled-and-skid type connector for rack launching . . . lateral mounting brackets . . . skid-away release mechanism . . . straight or 60 and 90 degree endbells. Six contact layouts.



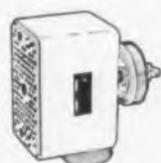
GMDD type . . . sled-and-skid type connector for platform launching . . . straight endbell . . . longitudinal mounting ears . . . 22 size 14 contacts. One contact layout.



GME type . . . ball-and-detent type latch . . . handwheel engagement . . . manual release only . . . handwheel equipped with ears for clevis . . . 90 degree angle endbell. Seven contact layouts.



GMJ type . . . sled-and-skid type connector for platform launching . . . manual fall-away disconnect . . . mounting ears fitted on rear . . . 30 degree angle endbell. One contact layout.



GMK type . . . ball-and-detent latch . . . handwheel engagement . . . with or without ears for clevis . . . manual release only . . . 90 degree angle endbell. Two contact layouts.



GME type . . . ball-and-detent latch, handwheel actuated engagement, manual lanyard release only, 90 degree endbell. One contact layout.



Refer to Dept. 201
CANNON ELECTRIC COMPANY, 3209 Humboldt St., Los Angeles 31, California. Factories in Los Angeles; East Haven; Toronto, Canada; and London, England. Representatives and distributors in all principal cities.



CANNON ELECTRIC

In addition to the "GM" Series, Cannon Types "AN", "K", "DPD", miniature connectors, and the J06 are used for missiles and jettisonable equipment. For an overall survey of these, request your copy of the "Cannon Plug Guide". For complete engineering data on the "GM" rocket launching connectors request the "GM" Bulletin on company letterhead.

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RAYTHEON KTR-100 MICROWAVE FOR

MEETS FCC STANDARDS FOR SIMULTANEOUS TRANSMISSION OF COLOR AND AUDIO

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7. Low in cost yet outstanding in flexibility; superiority of electrical and mechanical design; ease of installation, control and servicing.

Act now to insure early delivery of
Raytheon's advanced design KTR-100 Microwave.

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RAYTHEON MANUFACTURING COMPANY

Equipment Sales Division

WALTHAM 24, MASSACHUSETTS

RACK ADAPTORS

Cramped for space? These convenient new rack adaptors facilitate mounting KTR-100 transmitter or receiver control units in standard 19-inch equipment racks. Pre-wired and furnished with color-coded terminal strip for quick, easy installation or removal.



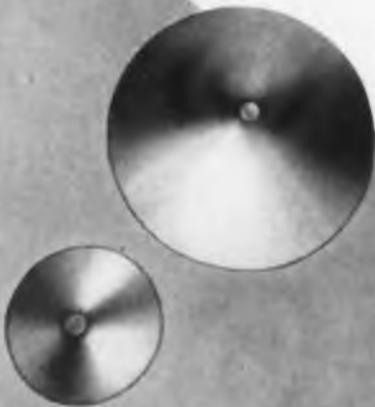
ACL-3 CUE LINK

This 26 mc broadcast audio cueing link is indispensable for lining up microwave installations and for permanent, two-way communication between broadcast or microwave sites. Furnished with hand sets, cable and antennas. Packaged for portable or rack mounting.



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Designed to extend the utility and installation ease of Raytheon KTR-100 Microwave.



ALL-WEATHER RADOMES

New, lightweight, sturdy, easy-to-install Radomes . . . made of tough, durable Styrene Copolymer for long-lasting protection against severest weather conditions. Sizes to fit KTR-100, 2, 4 or 6 foot parabolas.



UNIVERSAL PEDESTAL FOR VERTICAL OR HORIZONTAL MOUNTING

Mount your KTR-100 receiver or transmitter on tower, roof, side of building or concrete base. The universal pedestal accepts the reflector bracket assembly for either receiver or transmitter RF heads in either vertical or horizontal position. Tubular aluminum models also available.

RAYTHEON MANUFACTURING COMPANY

Equipment Sales Division, Dept. 6270 TL
WALTHAM 54, MASSACHUSETTS

Please send complete information on the equipment or accessories checked below

- KTR-100 Microwave for color
- Rack Panels
- ACL-3 Cuelink
- Universal Pedestal
- Radomes

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 Name

 Company or Station

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 City Zone State

GABRIEL

integrated

research
through
production

ADVANCED = ANTENNA PERFORMANCE

33,000 mc

25 mc

► From Gabriel's integrated facilities for development and production came the unsurpassed antenna performance shown here . . .

► Gabriel integrates its antenna specifications with your system requirements. Ask a Gabriel Field Consultant for recommendations.



GABRIEL MICROWAVE ANTENNA

Field proved the world over, Gabriel Parabolics are produced for commercial, industrial, and military frequencies.

Request Catalog EMP for complete specifications in these and other frequencies.

7000 mc. — 7000 mc. Railroad Microwave System Operates in mid-west weather conditions ranging from -27° to 110°F — and often mounted where difficult access makes reliability critical. Photo courtesy of Philco.

Important features are **COMPLETE COVERAGE** — 5925-7425 mc · **HIGH GAIN** — to 42.5 db over isotropic source · **LOW VSWR** — 1.13 max. · **LOW SIDELOBES** — better than 22 db down.

2000 mc. — 2000 mc. NATO Mobile Military Microwave Relay 24-channel communication relay using Gabriel 2000 mc offset feed antenna. Broadband characteristics of Horn Feed cover entire 2000 mc band.

Important specifications are **HIGH GAIN** — better than 30 db over isotropic source · **LOW VSWR** — 1.2 max. over 1750-1990 mc band · **BEAMWIDTH** — H plane 6° , E plane 5.7° · **LOW SIDELOBES** — better than 23 db down.



GABRIEL HIGH GAIN UHF-TV BROADCAST ANTENNA

From station after station, in metropolitan and smaller communities, come verified reports of increased signal coverage — at relatively low cost — with Gabriel's radically new transmitting antenna.

Request 24-page Report ETV for complete performance characteristics.

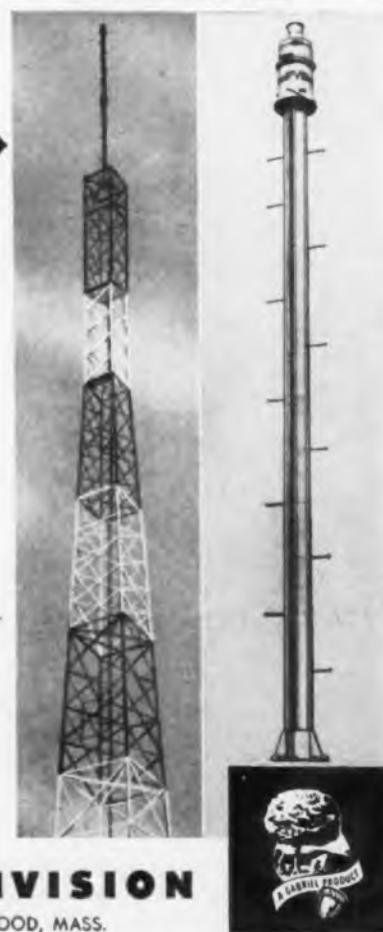
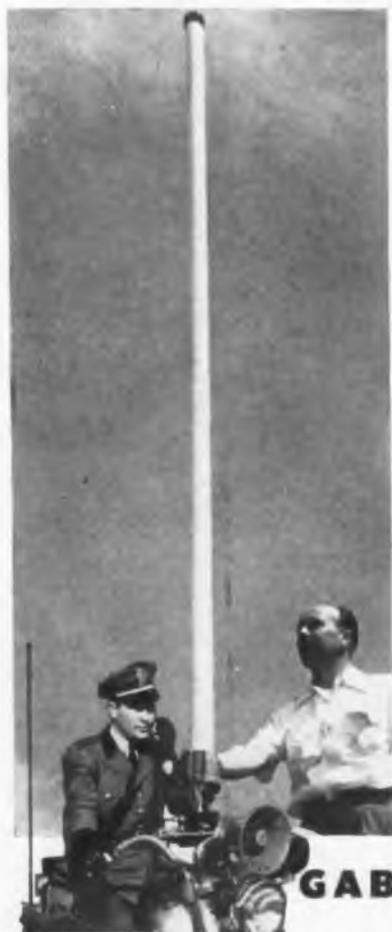
Important features are: **HIGH GAIN** — 25 and 14 power gain models available · **IDEAL VERTICAL PATTERN** — Cosecant squared radiation pattern for uniform field strength · **SHAPED HORIZONTAL PATTERN** — Omni-directional or cardioid as site requires · **NULL FILL-IN** — standard on all models · **TROUBLE-FREE** — mechanical design with greater strength, no de-icing, no insulator except as seal · **ELECTRICAL BEAM TILT** $.7^{\circ}$ if desired.

GABRIEL COMMUNICATIONS ANTENNAS

A complete line for wide-range dependable mobile communications for increased signal power with wider coverage at great savings over cost of high power station and mobile transmitters. Request 24-page Catalog EMC.

HIGH GAIN BEACON ANTENNAS — Gabriel HW series covers 450-470, 144-174, 108-144 mc bands. Gain up to 6.5 db over $\frac{1}{2}$ wave dipole, with equal power radiation in all horizontal directions and low VSWR.

MOBILE ANTENNAS — Gabriel's complete line with bases, springs, and rods, meets every mobile communications need. Typical models are famous "disguise" Model SPPB-71 for all police frequencies; Model SPP-3 series of swivel-base, spring, and whip antennas; Model SPP-18 roof-top model for 140-165 mc.



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Self-adhesive Avery Labels are on in an instant—without moistening...and they won't curl, peel or pop off. They're made for every labeling job in your plant, office or store...for your product or production line.

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FREE SAMPLES!
Avery Adhesive Labels help solve the labeling problems of many industries. Write for your free samples and labeling information. (No purchase necessary.)



There's an Avery Dispenser—either manual or electric—especially suited for your particular labeling job. Both models feed individually die-cut labels from rolls, *one-at-a-time*, ready to be applied to any clean, smooth surface—with *production-line speed!*

THE SOLUTION...

...to your R-F noise suppression problem

AEROVOX R-F noise suppression FILTERS*

Ideal for R-F noise suppression in military and commercial aircraft, vehicular low-voltage DC applications, and for special usages such as shield rooms and critical equipment. Maximum reliability. High attenuation. High current ratings. Still smaller hermetically-sealed metal-case housings. Advanced pi-type construction for greatest efficiency. Definitely the solution to your R-F noise suppression problem.

FEATURING...

- Aerolite[†] metallized-paper sections provide maximum reliability and life factors.
- Unique "fault-isolation" characteristic offers added protection against surge voltages.
- High attenuation of R-F currents. Maximum attenuation available, from .15 mc to 400 mc.
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- Operating temperature range from -55°C to $+85^{\circ}\text{C}$. At full rating (150 v.d.c.), operating temperature range is from -55°C to $+70^{\circ}\text{C}$. All units rated for continuous duty.
- Test voltage for all units, 200 v.d.c. at room temperature for period not exceeding 1 minute.
- Case construction of non-magnetic metal suitably protected for severest service requirements.
- Available with special terminals, special mountings and other special considerations for specific needs.

*WRITE FOR LITERATURE. Screen-room filters also available with extra-high attenuation (120 db) for AC and DC applications. Send us your R-F noise-suppression problem.



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As We Go to Press

ELECTRONIC NUTCRACKER



The electronic nutcracker, which fires 65 kv, 5,000 a. bursts 20 times per second, has achieved a one-third increase in shelled walnut production. Special capacitors developed by Westinghouse are the key units.

Use of Liquid Plastic Facilitates Tube Check

Engineers at the GE receiving tube plant in Owensboro, Ky. were faced with a knotty problem—how to check the spacings and alignment tolerances inside their radio and TV receiving tubes without breaking the glass and cutting out the parts? One engineer, who had seen a flower encased in clear plastic, came up with the solution.

First, the tube is immersed in clear, liquid plastic. Then its submerged glass tip is cracked off with pliers. Since there is a vacuum inside the tube, normal atmospheric pressure forces in the liquid plastic to fill the tube completely. Chemical action and baking hardens the plastic in about two hours, with the tube parts undisturbed. Engineers then crack away the glass tube exterior and slice the plastic-encased parts into quarter inch-thick sections for study under a microscope.

Aircraft Tracking System

Raydist, an electronic navigation and tracking system, manufactured by the Hastings Instrument Co. of Hampton, Va., was used to track aircraft during the recent AEC tests in the Pacific. This system, which uses a transmitter in the moving target, determines the position by comparing the phase difference of the signal as received by two fixed receivers—a recording station and a reference station.



Lower your cost for **CLOSE** tolerance with EFCON[®], type MH, miniature capacitors!

EFCON Performance

Use of "Mylar" results in high stability over an extended temperature range (-60°C. to $+125^{\circ}\text{C.}$) without derating.

Lower power factor and high insulation resistance along with very low dielectric absorption give these capacitors the type of performance required in precision apparatus.

Variation of capacitance with thermal change and life is exceedingly low.

Voltage Breakdown Test

EFCON, Type MH, Plastic Film Capacitors are production tested to withstand a DC voltage of 250% of rated voltage at 25°C. between terminals and between terminals and case.

Capacitance

EFCON, in specializing in close tolerance, is equipped to fill orders for non-standard capacitance values to specifications at standard prices.

Also available:

Type MC—"Mylar" polyester film capacitor in wax impregnated cardboard tubes

Type S—molded silvered mica capacitor

Electronic Fabricators, Inc. is proud to present the results of its two years of research, devoted to the development and perfection of a high quality, *close-tolerance* capacitor.

Here it is: the EFCON PLASTIC FILM CAPACITOR, Type MH!

EFCON has dedicated itself to years of research for the sole purpose of meeting the demand of the electronic industry for closer and closer tolerances. EFCON has successfully developed capacitors with tolerances of $\pm 5\%$, $\pm 2\%$ and $\pm 1\%$, in standard production.

The construction of EFCON, Type MH, and the research behind its development, was based on the use of moisture-proof "Mylar"* polyester film, providing high insulation resistance together with very low dielectric absorption. Non-inductive extended foil type construction with leads soldered directly to foil to insure minimum contact resistance. Hermetically sealed in metal cases with glass to metal solder/sealed terminals.

For full information write Dept. 48 for Technical Publication #154.

ELECTRONIC FABRICATORS, INC.

682 Broadway, New York 12, New York

*DuPont Trademark

MEASUREMENTS CORPORATION

Laboratory Standards

Throughout the world, Measurements' reputation for accuracy and reliability is your guarantee of satisfactory service.

STANDARD SIGNAL GENERATOR MODEL 65-D

FREQUENCY RANGE	OUTPUT RANGE	MODULATION
75 Kc.—30 Mc.	0.1 microvolt to 2.2 volts	AM, 0 to 100% 400 cycles or 1000 cycles External mod., 50-10,000 cycles

STANDARD SIGNAL GENERATOR MODEL 78

FREQUENCY RANGE	OUTPUT RANGE	MODULATION
15-25 Mc.; 195-225 Mc. 15-25 Mc.; 90-125 Mc. Other ranges an order	1 to 100,000 microvolts	AM, 8200-400 cycles 625-400 cycles Fixed at approximately 30%

STANDARD SIGNAL GENERATOR MODEL 78-FM

FREQUENCY RANGE	OUTPUT RANGE	MODULATION
86 Mc.—108 Mc.	1 to 100,000 microvolts	Deviation 0-300 Kc. 2 ranges FM, 400 and 8200 cycles External mod. to 15 Kc.

STANDARD SIGNAL GENERATOR MODEL 80

FREQUENCY RANGE	OUTPUT RANGE	MODULATION
2 Mc.—400 Mc.	0.1 to 100,000 microvolts	AM, 0 to 30% 400 cycles or 1000 cycles External mod., 50-10,000 cycles

STANDARD SIGNAL GENERATOR MODEL 82

FREQUENCY RANGE	OUTPUT RANGE	MODULATION
20 cycles to 200 Kc. 80 Kc. to 50 Mc.	0-50 volts 0.1 microvolt to 1 volt	Continuously variable 0-50% from 20 cycles to 20 Kc.

STANDARD SIGNAL GENERATOR MODEL 84

FREQUENCY RANGE	OUTPUT RANGE	MODULATION
300 Mc.—1000 Mc.	0.1 to 100,000 microvolts	AM, 0 to 30%, 400, 1000, or 2500 cycles. Internal pulse modulator. External mod., 50-30,000 cycles.

STANDARD SIGNAL GENERATOR MODEL 84-TV

FREQUENCY RANGE	OUTPUT RANGE	MODULATION
300 Mc. to 1000 Mc.	Continuously variable from 0.1 microvolt to 1.0 volt	Continuously variable 0 to 30% External modulation 20 to 20,000 cycles.

STANDARD SIGNAL GENERATOR MODEL 90

FREQUENCY RANGE	OUTPUT RANGE	MODULATION
20 Mc.—250 Mc.	0.3 microvolt to 0.1 volt	Continuously variable, 0 to 100% Sinusoidal modulation 30 cycles 5 mc. Composite TV modulation.

PULSE GENERATOR MODEL 79-B

FREQUENCY RANGE	PULSE WIDTH	OUTPUT
60 to 100,000 cycles	Continuously variable from 0.5 to 40 microseconds	Approx. 150 v. positive with respect to ground. "Sync Output" 35 v. positive with respect to ground.

SQUARE WAVE GENERATOR MODEL 71

FREQUENCY RANGE	WAVE SHAPE	OUTPUT
Continuously variable 6 to 100,000 cycles	Rise time less than 0.2 microseconds with negligible overshoot	Step attenuator: 75, 50, 25, 15, 10, 5 peak volts. Fixed and 0 to 2.5 volts continuously variable

VACUUM TUBE VOLTMETERS

MODEL 62		
VOLTAGE RANGE	FREQUENCY RANGE	INPUT IMPEDANCE
0.1, 0.3, 0.30 and 0.100 volts AC or DC	30 cycles to over 150 Mc.	Approximately 7 mmfd

MODEL 67		
VOLTAGE RANGE	FREQUENCY RANGE	INPUT IMPEDANCE
.0005 to 300 volts peak-to-peak	5 to 100,000 sine-wave cycles per second	1 megohm shunted by 30 mmfd.



CRYSTAL CALIBRATOR MODEL 111

STANDARD SIGNAL GENERATOR MODEL 80



MEGACYCLE METER MODEL 59

U.H.F. FIELD STRENGTH METER MODEL 58

FREQUENCY RANGE	INPUT VOLTAGE RANGE
15 Mc. to 150 Mc.	1 to 100,000 microvolts in antenna. 1 to 100 microvolts on semi-logarithmic output meter, balanced resistance attenuator with ratios of 10, 100 and 1000 ahead of all tubes.

INTERMODULATION METER MODEL 31

INTERMODULATION RANGE	FREQUENCIES (CYCLES)	ANALYZER INPUT VOLTAGES
3%, 10% and 30% Full scale	LF: 60 cps HF: 3000 cps	Full scale ranges of 3, 10, 30 volts RMS

MEGACYCLE METERS MODELS 59LF-59-59UHF

FREQUENCY RANGE	FREQUENCY ACCURACY	MODULATION
0.1 Mc. to 4.5 Mc. 2.7 Mc. to 400 Mc. 430 Mc. to 940 Mc.	Within ±2%	CW or 120 cycles fixed at approximately 30%. Provision for external modulation

CRYSTAL CALIBRATORS

MODEL 111		
FREQUENCY RANGE	FREQUENCY ACCURACY	HARMONIC RANGE
250 Kc.—1000 Mc.	0.002%	25 Mc. Oscillator: 25-450 Mc. 1 Mc. Oscillator: 1-600 Mc. 10 Mc. Oscillator: 10-1000 Mc.

MODEL 111-B		
FREQUENCY RANGE	FREQUENCY ACCURACY	HARMONIC RANGE
100 Kc.—1000 Mc.	0.002%	.1 Mc. Oscillator: 1—450 Mc. 1 Mc. Oscillator: 1—600 Mc. 10 Mc. Oscillator: 10—1000 Mc.



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Uniformity

**—batch to batch uniformity
that makes inspection unnecessary**

We have used every type of GA & F Carbonyl Iron Powder thus far produced. The overall quality and batch-to-batch uniformity of your products have always been gratifying to us. Because of this product dependability, we feel that incoming inspection of your powders is unnecessary.

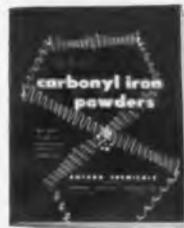
Richard D. Ponemon

President
Pyroferric Company, Inc.
621 East 216th Street
New York 67, N. Y.

GA & F Carbonyl Iron Powders are used to produce cores for transformer and inductor coils—to increase Q values, to vary coil inductances, to reduce the size of coils, to confine stray fields and to increase transformer coupling factors.

These powders are microscopic, almost perfect spheres of extremely pure iron. They are today produced in eight carefully controlled types, ranging in average particle size from three to twenty microns in diameter. The Carbonyl Process assures the quality and uniformity of each type.

We urge you to ask your core maker, your coil winder, your industrial designer, how GA & F Carbonyl Iron Powders can increase the efficiency and performance of the equipment or product you make, while reducing both the cost and the weight. We also invite inquiries for powders whose performance characteristics are different from those exhibited by any of our existing types.



This 32-page book offers you the most comprehensive treatment yet given to the characteristics and applications of GA & F Carbonyl Iron Powders. 80% of the story is told with photomicrographs, diagrams, performance charts and tables. For your copy—without obligation—kindly address Department 82.

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A SALES DIVISION OF GENERAL ANILINE & FILM CORPORATION

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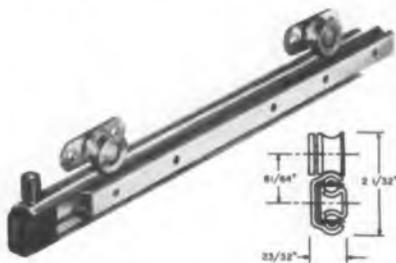
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No. 306R Slide

Two-section slide with rollers for moving unit. Ball bearing action. Full travel possible. Load capacity: 50 lbs. per pair mounted vertically.



No. 308 Slide

Two-section underneath mounting slide. Ball bearing action. Glide brackets permit full travel, easy chassis removal. Load: 30 lbs. per pr.



No. 313R Slide

Same as No. 306, but with solid center track of steel or aluminum. Load capacity: 75 lbs. per pair mounted vertically; 45 lbs. mounted horizontally.



No. 330 Slide

Very inexpensive roller type slide for quantity installation. Has some slide play. Travel 4" less than slide length. Load capacity: 50 lbs. per pair.



No. 575R Slide

Same features as No. 306, but heavier sections for greater loads. Load capacity: 100 lbs. per pair mounted vertically; 60 lbs. mounted horizontally.

Grant Industrial Slides

Grant Pulley & Hardware Corporation
Flushing, N. Y. Los Angeles, Cal.



The patents described in the following list are some of the many patents, presently available for licensing or sale, which may be of interest to TELE-TECH & ELECTRONIC INDUSTRIES readers. Register numbers are those given in the Official Gazette of the Patent Office. Inquiries should be addressed to the owner of the patent rights or other party specified. Complete copies of patents may be obtained from the Commissioner of Patents, Washington 25, D. C., for \$25 each.

Pat. 2,603,761. **Cathode-ray tube.** Patented July 15, 1952. Multi-filament CRT has switch built into conventional cylindrical base, allowing operator to switch filaments alternately in or out, to prolong the tube life. (Owner) Walter E. Angell, 225 77th St., Brooklyn 9, New York. Group 36-61-92. Reg. No. 52,353.

Pat. 2,649,572 **Counter EMF Derivation Circuit.** Patented Aug 18, 1953. D.C. motor velocity indicator is energized by half wave rectified current, and during the period between successive half-wave cycles, the dc motor acts as a dc generator, producing a voltage, proportional to the rotor speed, which is measured by a meter. (Owner) Oscar E. Carlson, 25 Riverdale Rd., Pompton Lakes, N.J. Group 36-13-19. Reg. No. 52,687.

The following two patents, presently owned by the AEC, are available on a non-exclusive, royalty-free basis. Apply to Chief, Patent Branch, Office of the General Counsel U.S. Atomic Energy Commission, Washington 25, D.C.

Pat. 2,634,307. **High-Frequency Shunt.** Patented April 7, 1953. By isolating the meter from the inductive voltage developed across the shunt, it provides a voltage independent of frequency variations. Group 36-19. Reg. No. 50,829.

Pat. 2,636,118. **Pulse Equalizer.** Patented April 21, 1953. This device measures the coincidences of electrical pulses and will also transform pulses of odd amplitudes into pulses of equal amplitudes, in which the delay time for all pulses is essentially constant. Group 36-13. Reg. No. 50,837.

The following nine patents, owned by the American Telephone and Telegraph Co., are available for licensing on reasonable terms. Apply to: Patent Licensing Div., Western Electric Co., Inc., 195 Broadway, New York 7, N.Y.

Pat. 2,593,330. **Variable Frequency Relaxation Oscillator.** Patented April 15, 1952. Reg. No. 51,042.

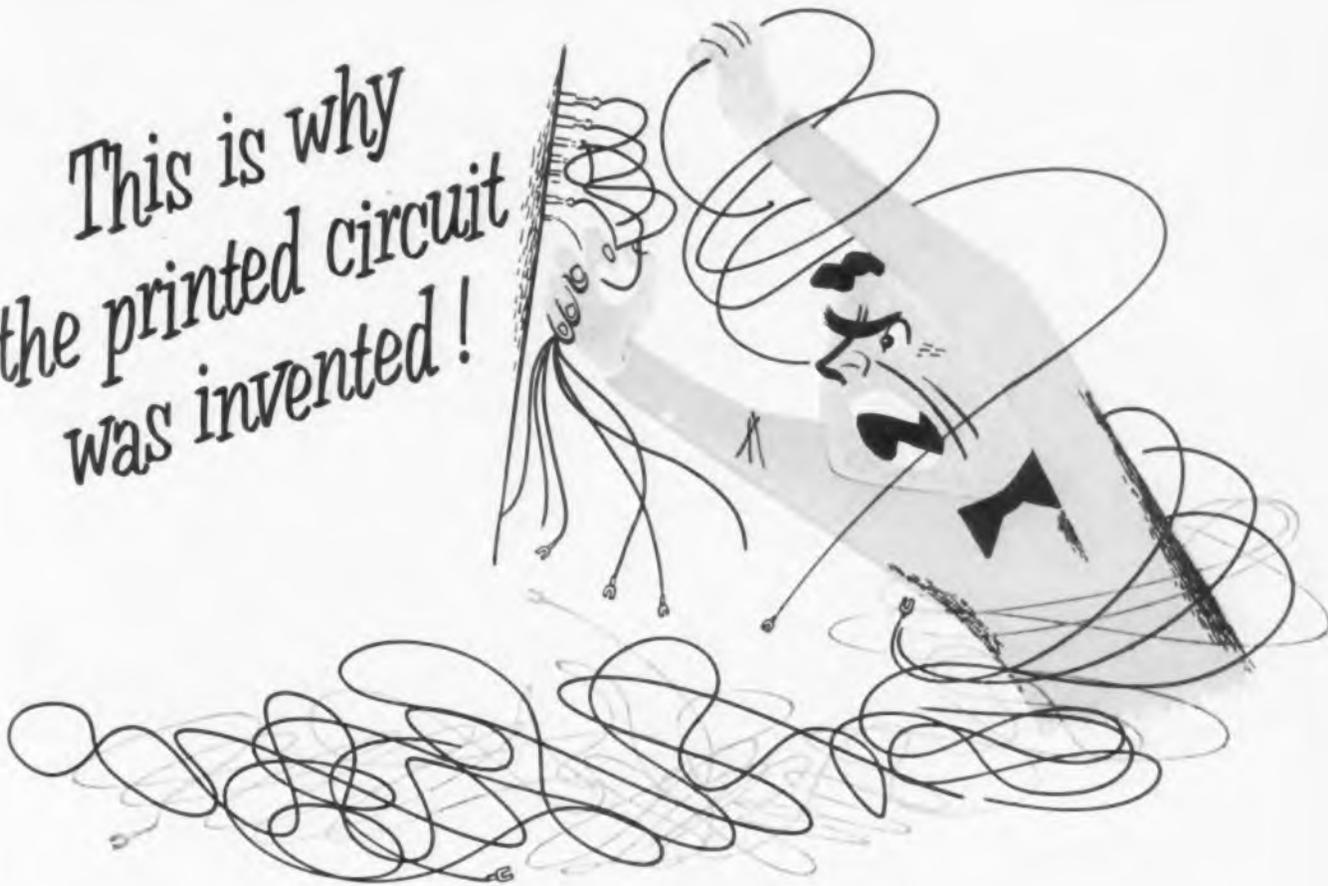
Pat. 2,594,449. **Transistor Switching Device.** Patented April 29, 1952. Reg. No. 51,058.

Pat. 2,596,251. **Wave Guide Lens System,** patented May 13, 1952. Reg. No. 51,088.

Pat. 2,595,163. **Electronic Voltmeter Test Circuit for Measuring High-Resistance Leaks.** Patented April 29, 1952. Reg. No. 51,071.

(Continued on page 88)

This is why
the printed circuit
was invented!



The printed circuit is the inevitable and successful result of inventive man's effort to do old things in new and better ways. The old way of installing an electrical circuit, in such fields as radio, television, hearing aids, automatic signals and other low-power applications, was a slow, expensive hand-process which was susceptible to error. Many a complex system had real nuisance value for the manufacturer. The new way eliminates all this because the circuit itself is etched, or printed, onto a sheet of copper foil bonded to a base material.

Copper-Clad Phenolite—by National—holds the secret of success in printed circuits. The Phenolite

core is a scientifically compounded laminate possessing *all* the properties and characteristics demanded for the job. Among these are high dielectric and mechanical strength, resistance to heat, moisture, solvents, oils, acids, alkalies. It is light in weight—can be machined, punched, sawed, drilled. Phenolite is the perfect material for printed circuits . . . and for many other uses in the electrical, electronics, and general industries.

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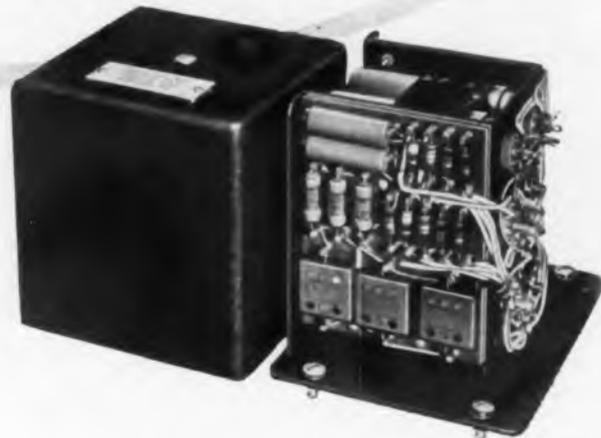


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CVC's inline aluminizing system in operation at Sylvania Electric Products, Inc. plant in Seneca Falls, N. Y.

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Similar to the exhaust system, individual aluminizing units move around an oval track. One revolution completes the aluminizing cycle. Each cart is completely self-contained with mechanical and diffusion pumps, valves, power pickups, and controls for automatic operation. The operator need only load and unload tubes and replenish the aluminum on the filaments.

This new CVC system can handle any size TV tube currently produced. Interchangeable diffusion pump jet assemblies permit easy adaptation to the higher vacuums

probably required for color TV tube aluminizing. The system is available *with* or *without* valves.

For smaller scale operations, CVC offers an integrated system of one to six individual pumping units with common roughing manifold and individual holding pumps. Timing devices control cycling automatically and permit one operator to handle all systems.

CVC's vast experience in designing inline exhaust systems makes these units trouble-free and economical in operation. We will be pleased to give you the details on specifications, costs, and deliveries. *Consolidated Vacuum Corporation, Rochester 3, N. Y.* (a subsidiary of Consolidated Engineering Corporation, Pasadena, California).



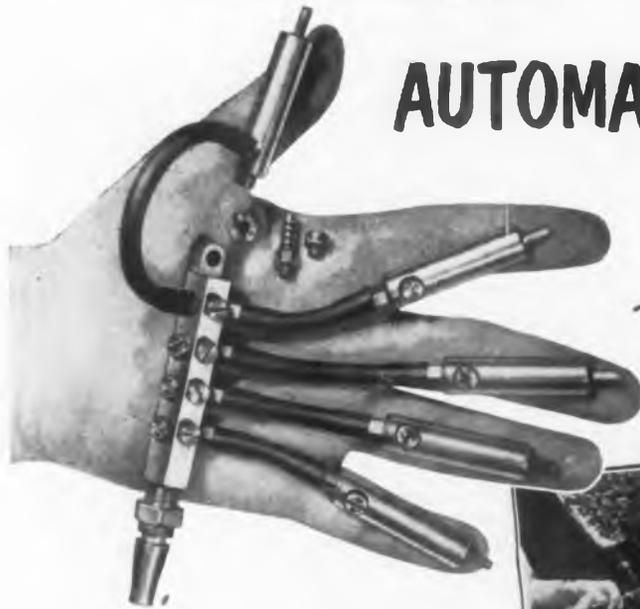
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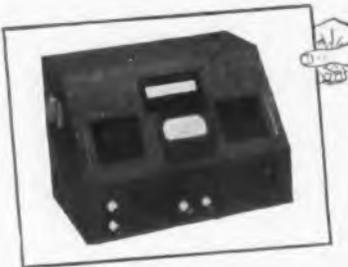
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Clippard **MINIATURE PNEUMATIC CYLINDERS** (No. MAC 3B), are shown above in a typical test jig set-up activating electrical contacts. Size of cylinders overall is $2\frac{3}{4}$ " x $\frac{7}{16}$ " dia., stroke $\frac{3}{16}$ " maximum, spring return piston. Operates on as little as 12 pounds air pressure.



P. R. 5 AUTOMATIC RESISTANCE COMPARATOR permits unskilled operator or automatic set-up to test, grade, sort or match as many resistors a minute as can be touched across two front terminals. Range 100 ohms to 100 megohms. Three scales of deviation from your standard: -5% to +5%, -25% to +30% or -50% to +100%.



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(Continued from page 84)

Pat. 2,599,753. **Wave Guide Phase Shifter.** Patented June 10, 1952. Reg. No. 51,115.

Pat. 2,623,198. **Tunable Magnetron.** Patented Dec. 23, 1952. Reg. No. 52,408.

Pat. 2,632,048. **Light Valve for Television System.** Patented March 17, 1953. Reg. No. 52,457.

Pat. 2,632,146. **Transistor Frequency Modulation.** Patented March 17, 1953. Reg. No. 52,492.

Pat. 2,627,550. **Adjustable Impedance Transformer.** Patented Feb. 3, 1953. Reg. No. 52,427.

The General Electric Co. offers the following three patents for non-exclusive licensing on reasonable terms. Write to: Manager, Patent Services Dept., General Electric Co., 1 River Road, Schenectady, N.Y.

Pat. 2,605,395. **Noise Suppression Circuits.** Patented July 29, 1952. A squelch or muting circuit for use in communications receivers. Group 36-61. Reg. No. 50,520.

Pat. 2,585,929. **Synchronizing System for Resonant Circuit Oscillators.** Patented Feb. 19, 1952. Reg. No. 48,636.

Pat. 2,583,793. **Magnetron Anode.** Patented Jan. 29, 1952. Reg. No. 48,633.

Pat. 2,623,200. **Servo-Control Mechanism.** Patented Dec. 23, 1952. The error voltage derived from the load position or speed is used to vary the frequency of a single-phase operator whose output is then mixed with the output of a three-phase oscillator. The resulting frequencies are amplified and applied to the stator winding of a three-phase motor. (Owner) Northern Electric Co., P.O. Box 6124, Montreal, Quebec, Canada. Group 36-19. Reg. No. 50,700.

A COMPONENTS SYMPOSIUM



Speakers at the opening session of the 1954 Electronics Components Symposium in Washington, D.C., May 4-6, were l. to r.: M. B. Carlton, Department of Defense, chairman of the symposium committee; R. S. Hylkema, Philips Industries, Eindhoven, Holland; R. C. Sprague, Sprague Elec. Co., and chairman of the RETMA board of directors; Brig. Gen. W. P. Corderman, chief of the Signal Corps Engineering and Technical Division; Dr. D. K. Noble, Motorola Inc.; C. H. Elmendorf, Bell Telephone Labs.; A. W. Rogers, Signal Corps Engrg. Labs., and W. H. Martin, Deputy Asst. Secretary of Defense (Applications Engineering)



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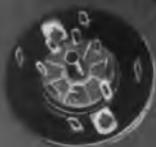
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Mounted flat against a chassis with a screw or rivet, these miniature capacitors provide a highly secure mounting. 1 to 4 sections in the shallow pan are insulated and moisture-protected by a phenolic resin. Ideal for military electronics. These units have an unusually high self resonant frequency, and eliminate lead dress problems when mounted adjacent to a miniature tube socket. Available in ratings from 100 to 500 volts d-c. Write for Engineering Bulletin #31.

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TELE-TECH & Electronic Industries

O. H. CALDWELL, Editorial Consultant ★ M. CLEMENTS, Publisher ★ 480 Lexington Ave., New York 17, N. Y.

Industry Danger Signals

First quarter financial statements of Electronic manufacturers portend trouble. Competition, usually the sign of a vigorous industry, is going too far. And when it becomes a matter of dog-eat-dog, resulting in a substandard product for the consumer, it's time to ease up and take a look at ourselves.

No other industry has given the public so much value for so little money. Thanks to engineering and sales know-how, electronic products such as TV receivers and phonographs have been brought down in price while they've gone up in performance. For example, in 1947 a 10-inch TV set sold for about \$375. Now, with low-noise tuners and brighter pictures, a 21-inch receiver sells for under \$225. Seven years ago, a good one-speed phonograph cost \$250. Today, a three-speed long-play changer with AM-FM may be bought for \$200.

All this despite the fact that automobiles, homes, in fact the entire cost of living, have steadily risen. And TV continues to give the entire family a week's entertainment and education for a pro rata equipment cost of about 50¢. We can be justly proud of ourselves, our engineering, production and marketing.

Danger Signals

But danger signals are up now. Cut-throat price competition has become so severe that everyone is beginning to suffer. Some end equipment manufacturers are squeezing the components makers beyond reason, trying to get the last drop of performance out of every part—and then some. Pressure is being put on engineers in spite of their protests that if any more corners are cut the margins for research and development will be eliminated entirely. If the trend continues, the public will surely suffer, and so will the entire industry.

This situation recalls the price war between two local drug stores not so long ago. One cut the price of ice cream

sodas from 20¢ to 15¢. The second retorted with 12¢ which was countered by 10¢. Finally the prices tumbled to 1¢. Needless to say, the quality of the soda and resulting profits were nil. Incidentally, the price-war ended when one druggist handed out stacks of pennies to the neighborhood youngsters, with the suggestion that they patronize his 1¢ competitor. The TV industry is following this procedure when it prices its product on what the competitor is getting rather than on cost accounting.

Solution to Problem

There is no simple cure-all to this price-slicing quality-cutting competition. However, end equipment producers can make significant progress toward a solution by establishing the following policies:

1. Encourage engineers to advise management on minimal specifications which retain performance.
2. Listen to the engineers with the same appreciative ear that listens to salesmen.
3. Learn how corner-cutting affects parts suppliers, dealers and service technicians.
4. Organize as other industries have done, not to control pricing but to enforce fairness, check over-production, eliminate misrepresentation in advertising (to forestall government interference) and reduce the distress that leads to "dumping" and price wars that spread from city to city.
5. Establish reasonable prices which give a fair profit return.
6. Point up product quality and the appeal of broadcast program services in competitive selling.
7. Advertise the fact that radio-TV prices are down 84.5% and provide more service at lower cost than any other comparable medium. Push the second set idea on an industry cooperative basis.



1947 10-inch TV Set \$375
\$5.95 per square inch

TV Receiver Prices
Based on Screen Size
DOWN 84.5%
in Seven Years



1954 21-inch TV Set \$225
\$.92 per square inch

RADARSCOPE

Revealing important developments and trends throughout the spectrum for radio, TV and electronic research, manufacturing and operation

COLOR PICTURE TUBE developments growing in tempo. RCA is pressing work on its deflection-mask type. Philco is ironing out kinks in its secondary emission indexing system. DuMont expects to cut costs by laying phosphor on faceplate proper. Eitel-McCullough is scheduled to manufacture the Chromatron tube.

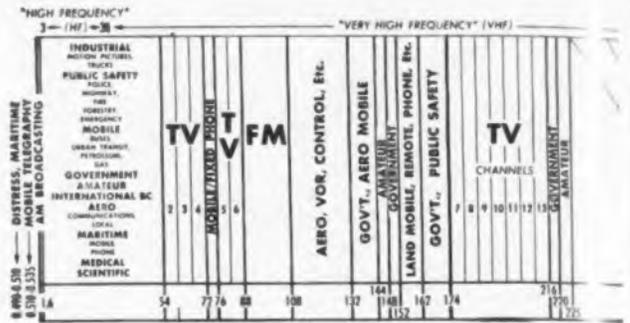
COMBINATION MAGNETIC RECORDER and three-speed record player has been designed. If it goes into production it will sell for \$45 or less. Unusual feature is that special head records audio on sensitized magnetic tracks on circular paper discs instead of usual tape.

MORE GOVERNMENT scientists and engineers are becoming fed up with what they feel to be uncalled-for character assassination and investigation ordeals. Result will be growing effort to seek jobs in private industry. Extent of anticipated shift is still in question.

WEATHER RECONNAISSANCE



Wilson A. Maxim (l) and Donald A. Brown, engineers at Wright Air Development Center's Aircraft Laboratory adjust droppable radio-sonde (l) and airborne radio receptor (r), developed by WADC and Signal Corps. Equipment provides improved vertical atmospheric sounding information over ocean areas, wastelands and Arctic regions. Radiosonde transmits coded weather signals while falling



PUBLIC INTEREST programs on TV—12,000 of them—occupy more than 3100 hours on the air, according to a recent NARTB survey. The average station has a weekly average of 47 hours and 7 minutes of non-network programming, 20.2% of which is devoted to the public interest.

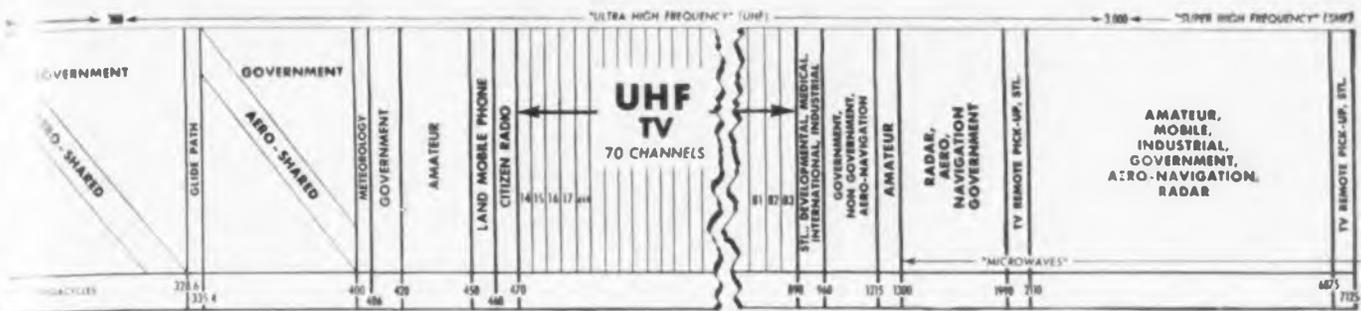
VIBRATION test frequencies for electronic equipment are going up. Early in World War II, 10 to 60 cps tests were conducted. Aircraft resonance problems raised the requirements to 500 cps. Now Signal Corps has need for 1000 cps tests, and engineering eyes are focused on frequencies from two to 20 times as great.

SELECTIVE SERVICE legislation introduced in the U.S. Senate, Bill 3068, is receiving strong support from top engineers and industry management. It is an amendment which clarifies and emphasizes certain parts of Public Law 51, particularly with regard to draft deferment for engineers: "Selection . . . for deferment or induction in accordance with both need and skill which the national interest may require."

MODERNIZING PLANT facilities and equipment will cost U. S. industry \$16 billion this year, or about 60% of the estimated \$27 billion slated for capital expenditures in 1954. Henry F. Dever, President of Brown Instruments, notes that the industry squeeze between rising payroll costs and competitive sales is aggravated by the obsolescence factor, which gives impetus to changes in production techniques.

ELECTRONIC SOUND absorbers, radio-fax-TV links to key personnel, and phosphor coated wall replacing conventional lights are some of the developments in store for the imaginary office of the future, states RCA Technical Director C. B. Jolliffe.

COLOR TV advertising rates, a prime factor in getting the new medium going, will average 10% above black-and-white in four years, according to CBS-TV President J. L. Van Volkenberg. He estimates that by 1958, TV will have 90% saturation in the 100 largest markets. Using a 100-station black-and-white line-up, 36 million families will be reached at a cost of \$2.31/thousand, about what it is today (\$58,000 for time and cable, \$25,000 for talent and production). For color, it will be \$2.54/thousand families.



In this issue
1954
ELECTRONIC INDUSTRIES DIRECTORY
Quick and complete reference for

• Products	• Distributors
• Manufacturers	• Reps
• Trade Names	• Consultants
• Engineering Societies	

INDUSTRY

PLANT DISPERSION program as a protection against hydrogen bomb assault has recently been announced by top leaders of the U. S. Chamber of Commerce, which represents some 1,600,000 business men. This program was contained in a resolution which came close on the heels of an editorial in **TELE-TECH & ELECTRONIC INDUSTRIES** ("A New Look in Plant Sites," May 1954, page 63). It urged industrial firms to duplicate vital records and store them in a safe place, and to develop plans for dispersal of workers, protection of machinery, and transfer of production from damaged plants to undamaged ones.

LABOR

HARMFUL LEGISLATION which "contains so many dangers and pitfalls that it impedes the government's procurement program, and is a source of great potential harm to the national economy," is described in a publication just issued by RETMA—"The Walsh-Healey Act, The Labor Law That Really Needs Revision." The booklet points out that the Walsh-Healey Act empowers the Secretary of Labor to establish minimum wages in specific industries and the minimum wage must be paid by every company which enters into a contract with the government involving payment of \$10,000 or more. As a practical matter, these minimums above Fair Labor Standards Act, once established, become permanent whether or not the company continues to perform government contracts. It points out that the Secretary of Labor has tended to ignore well-recognized regional differentials.

ENGINEERING EDUCATION

SCHOLASTIC MORTALITY of engineering students, generally believed to be much higher than for other courses of study, is actually on par with non-technical disciplines. A four-year study by the Educational Testing Service, Princeton, N. J., covering more than 13,000 freshman entrants, indicates that 33% were graduated

in engineering or completed four years of a five-year program; 11% were still enrolled, and most were expected to graduate; 56% had withdrawn or been dropped. Although comparable current figures for other disciplines are not available, a 1931-1932 study of engineering students showed that 33% graduated and 62% withdrew. Corresponding figures for arts and science were 29% and 67%; commerce, 24% and 67%; and education, 42% and 53%. As a sidelight, the ETS study showed that present graduation ratios, ranging from 9% to 62%, average 25% for publicly supported institutions and 46% for private schools.

SOLAR BATTERY



Sunlight provides power to turn motor-driven wheel at Bell Labs. D. M. Chapin, one of the three-member team who invented the solar battery, holds unit which contains strips of specially prepared silicon about the size of common razor blades. Reported to be the first successful device of its type, solar battery converts sun's energy directly into electricity with 6% efficiency. Device opens new horizons for power generation. Details on p. 128

Trochotrons—A New Family of

Low operating voltages and rapid action are some of the advantages of this foreign import which introduces trochoidal beam technique for pulse counting and multiplex

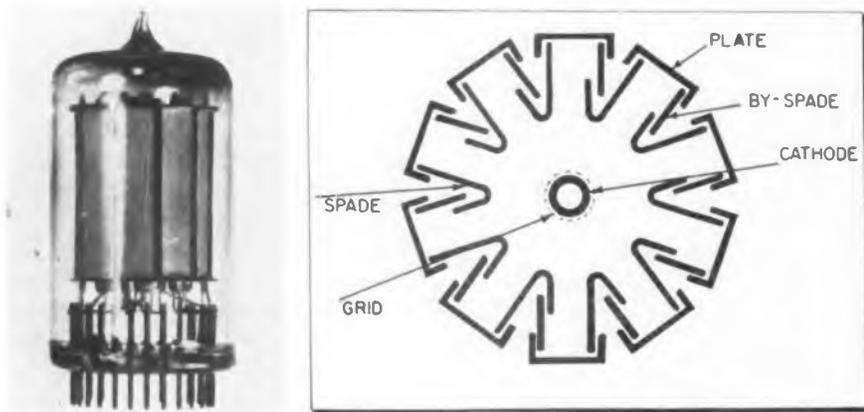


Fig. 1: (l) Photo of 10-position trochotron for multiplex pulse systems. Fig. 2: (r) Electrode arrangement. Characteristics below

Heater—6.3 v, 0.6 a
Spade and plate voltage—250 v
Plate current—40 ma

Magnetic field—320 gauss
Tube dimensions—42x70 mm (max.)
Magnet dimensions—58x45x75 mm (max.)

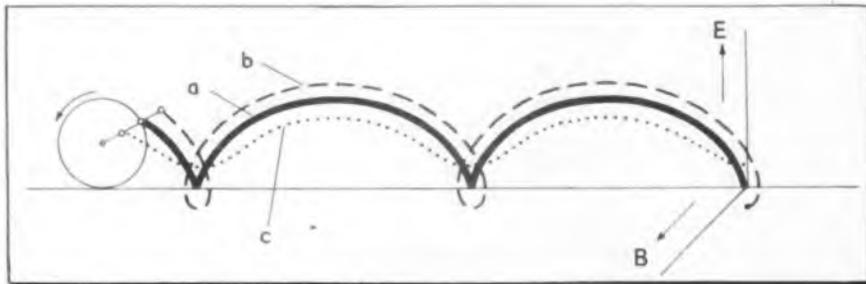


Fig. 3: Trochoidal curves generated by a point on a spoke, or its prolongation, of a rolling wheel

By HARALD ROMANUS
and
HANNES ALFVEN

Electronic Laboratories
Royal Inst. of Technology
Stockholm, Sweden

TROCHOTRON is the name given to a new high vacuum multi-electrode switching tube which employs a special type of electron motion—the trochoidal motion—that is obtained in crossed magnetic and electric fields. Due to the properties of this motion they have much lower impedance and consequently higher switching frequency than ordinary high vacuum tubes. The high current makes them in some respects comparable to gas filled tubes.

Compared with other tubes designed for similar purposes, their characteristics are:

1. Rapid action. They react to pulses down to fractions of a μ sec.
2. Low operating voltages compared to the cathode ray tubes. In fact, the trochotrons may be operated at even lower voltages than the gas tubes, as they require no ignition voltage.
3. Higher currents than the cathode ray tubes (100 to 1000 times), which makes amplification unnecessary in ordinary cases.
4. Self-locking in any desired position of the beam by very simple arrangements, as the current-voltage curve of every electrode has a negative slope. The arrangements as automatically rotating distributor or pulse driven selector or counter are equally simple.
5. Easily adaptable for different requirements, such as different num-

ber of outputs, special coding arrangements etc., due to the flexible qualities of the trochoidal beam. Complex functions normally requiring several ordinary tubes, may be performed in one single trochotron. In addition, the auxiliary circuits of the trochotron are extremely simple.

6. Simple structural design, rugged construction and small dimensions. No electron gun or electron-optical arrangements are used.

Trochoidal Beam

As already said the trochotrons are based on the special qualities of a beam of electrons moving in trochoidal paths, which are produced by crossed magnetic and electric fields. Trochoid is the name of a curve that is described by a point on a rolling wheel (Fig. 3). If the point is situated on the rim of the wheel, the curve will have sharp tips (curve a). A point on the prolonged radius outside the rim will give a curve with loops (curve b) and points inside the wheel will give blunt curves (curve c).

The magnetic field causes the electrons to move in circular orbits. When the electric field is applied perpendicular to the magnetic field, the circular motion is modified by a translational motion. This translation, however, does not—which in the first moment may seem surprising—proceed in the direction of the electric field, but is perpendicular thereto. This means that the translational motion, i.e., the propagation

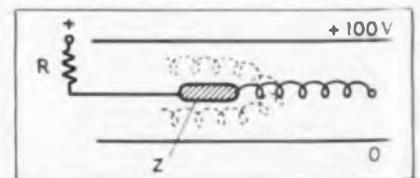


Fig. 4: Trochoidal beam in electric field follows equipotential line; can be led to or around an electrode by changing potential

of the electron beam, follows an equipotential line in the electric field. The value of this potential—the "beam potential"—is given by the starting conditions of the electrons.

Switching Tubes

The electron beam, following the equipotential line, may thus be given any desired shape of suitable modelling of the electric field.

The paths of the separate electrons in the beam, on the other hand, do not coincide with the equipotential line, but consist of trochoidal curves around that line. By changing the initial conditions of the electrons all types of trochoids are feasible, and it is even possible to balance the different parameters so that the electron curves are straight lines.

The technical importance of this is illustrated in Fig. 4. Suppose, for example, that a trochoidal beam is produced, which follows an equipotential line where $V = 50$ v. If an electrode Z is placed in the field and given a potential of 50 v and equipotential line of 50 v will pass through the electrode, and hence lead the electron beam to it. If the voltage of Z is decreased to say 20 v, the equipotential line of 50 v will

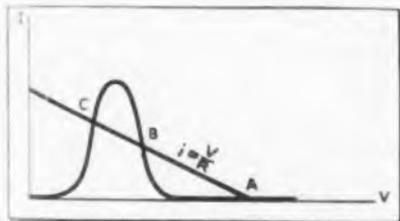


Fig. 5: I-V curve of trochotron electrode

pass between the electrode and the plate, and the electron beam will not touch the electrode. This, however, will also be the case if the voltage of Z is increased above 50 v, in which case the electron beam will pass on the other side of Z . Thus, the main principle of operation: the electron beam can be driven away from the electrode as well by increasing as by decreasing the electrode voltage.

Consequently, every electrode in the trochotron has a negative slope in its characteristic, as illustrated in Fig. 5. If Z is connected to a sufficiently high voltage through a resistor R , the resistance line will cut the electrode curve at three points A, B, C , of which A and C represent stable conditions. The electrode Z and the resistor R consequently may act as a self-locking switch.

Another fundamental quality of the trochoidal electron beam is its



Fig. 6: Trochotron design: c, cathode; s, spade; p, plates; R, impedances for beam locking

flexibility. In the cathode ray tube, where the electrons mainly move in the beam direction, the deviation of the beam, due to the inertia of the electrons, is restricted to certain mathematical curves, such as parts of circles or parabolas. In the trochoidal beam, on the contrary, the main motion of the electrons is the orbital movement in the magnetic field. The electron progression in the beam direction is somewhat slower than in the cathode ray, but in return the beam may easily be deviated into any desired shape. One may say, that the electron paths in the trochoidal beam are "coiled up" around the centre line of propagation.

Now, as the beam is kept concentrated by the combined action of the magnetic and electric fields, there is no need for an electron gun or any electron-optical arrangements as by the cathode ray, and much larger currents at lower voltages may be extracted from an ordinary cathode.

Trochotron Elements

As mentioned above any electrode in the trochotron may be used for receiving the electron beam and for directing it. In practice, however, different electrodes are used for different purposes. Some electrodes, called spades, (S_1, S_2 and S_3 in Fig. 6) are given such a shape and place, that they have a main influence on the electric field guiding the beam. If no special precautions are observed, such electrodes always have negative slope characteristics of the type shown in Fig. 5, and may consequently be made self-locking in the manner described.

For output purposes electrodes

with normal positive or pentode characteristics are needed. Such electrodes must have little or no influence on the beam path. In practice, these electrodes, called plates, (P_1, P_2 and P_3 in Fig. 6), are usually placed—single or in groups—in the bottom of "boxes" formed by the spades. The shielding action of the spades ensures that the plate voltage has only negligible influence on the electric field outside the boxes. When the beam is guided into a box, the concentrated electric field in the narrow slot between the low-voltage spade and the plate forces the beam to impinge on the plate, which thus collects the current.

A third class of electrodes, by-spades, (b in Fig. 2), is sometimes used, having negligible influence on the beam outside the box like the plates, but arranged to have guiding properties and eventually negative characteristics within the box.

If a sufficiently low voltage is applied to one of the spades (S_1 in Fig. 6) the beam is conducted to a box adjacent to that spade, where it is received by the appurtenant plate P_1 as long as the low spade voltage is maintained. It may be retained in the box even after the cessation of the externally applied voltage reduction—which thus may consist only of a short negative voltage pulse—if the spade is connected through a suitable series impedance R_1 . Hereby a fraction of the beam current is absorbed by the spade, producing a voltage drop in the impedance sufficient to maintain the spade at beam potential after the end of the pulse. The rest of the current, usually the main part, is passed on to the corresponding plate. By applying a steady low voltage or a short negative pulse to another spade the beam may be switched directly to any desired position along the beam path.

The tube can also be used as a step-by-step operation or as a free-running switch. This may be obtained by interconnecting the plates and applying negative voltage pulses or a steady negative voltage to the common lead. Supposing that the beam (in Fig. 6) is momentarily locked by a spade S_1 and received by a plate P_1 as described above. If the voltage of the plate is lowered, the beam will be rejected by the plate P_1 and forced to hit the spade S_2 on the other side of the plate, the voltage of this spade as yet being undepressed. This will cause a voltage drop in the load impedance R_2 attached to the spade, the main part of the beam current being transferred to the next plate

TROCHOTRONS (Continued)

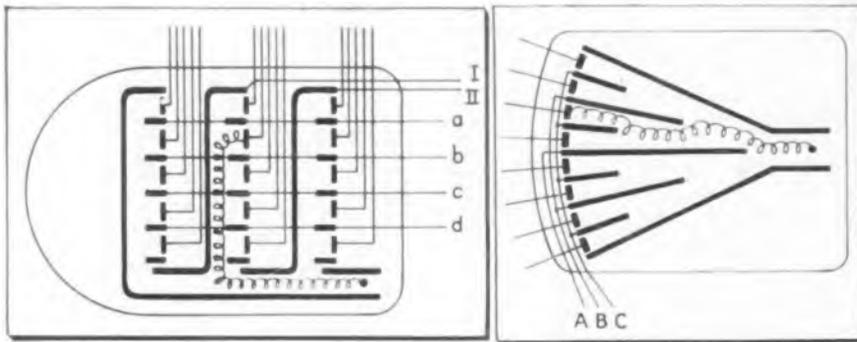


Fig. 7: (l) Experimental tube shows flexibility of trochoidal beam. Fig. 8: (r) "Binary" trochotron

P_2 . Here the beam will stay as long as this plate remains positive.

If all plates are kept permanently negative, the beam will be free-running at a speed that is determined by the parameters of the spade and plate circuits. It is however easily synchronized by pulses applied to the spades or plates. The time duration of the pulse should by this arrangement be kept within certain values in order to forward the beam one step for each pulse. To get stable conditions all spades also should be loaded with equal capacitances.

Another pulse counting arrangement is based on two plate groups, every other plate being interconnected. A push-pull-voltage of rectangular or wave form is applied to the two plate groups. When a plate where the beam is momentarily resting turns negative, the beam is forwarded one step. In this case there is no need for equal spade characteristics.

In the described arrangements by-spades may be used for pulse application instead of the plates, thus leaving the plates free for pure output functions.

Other switching methods are also possible, where the operating voltage or pulse is applied to the cathode or a grid.

Developments

Fig. 7 illustrates an experimental tube that was built to prove the extreme flexibility of the trochoidal beam. The different boxes or beam positions are arranged in three parallel rows in the tube, and it is actually possible to guide the beam in two right angles to any desired box. The principle of the tube corresponds to that of an electro-mechanical crossbar selector.

Experimental trochotrons have also been made, having more than

one plate in each box as well as tubes with built-in magnets or resistors. In the first-mentioned tubes the beam may act as a connector for ac voltages between the plates in the energized box. A permanent magnet inside the tube will in many cases be smaller and give a better field distribution than an outside magnet. Built-in voltage drop resistors in series with the spades or plates will reduce the number of stem leads—standard 7-pin or 9-pin stems may be used—and hence the cost of the tube and its auxiliary circuits.

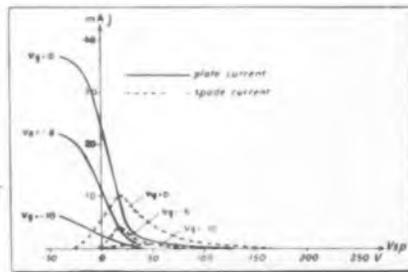


Fig. 9: Plate and spade characteristics

A "binary" trochotron is shown in Fig. 8. The uppermost electrode has a permanent positive voltage and the lowest a negative voltage. The voltage of the middle spade determines whether the beam shall go above or below it. The next two spades again shifts the beam between two alternative positions and a third set of spades gives the final position. Thus the tube can connect anyone of eight positions by the application of voltage to three sets of spades.

The coaxial trochotrons have a central cathode surrounded by a number of spades and plates in the principle manner shown in Fig. 6. It can also be equipped with by-spades and grid as in Fig. 2. The strength of the magnetic field parallel to the cathode has to be such, that substantially no current is

drawn from the cathode when all spades are positive, the electrons moving in a manner similar to that of a magnetron in cut-off condition. When the potential of one spade is lowered, the familiar negative characteristic of Fig. 5 is obtained. In the normal locked state one spade is at cathode potential. A trochoidal beam then is emanating from a part of the cathode near the depressed voltage spade. From here it proceeds around the cathode about 270°—approximately following an equipotential line—suppressing further emission by space-charge action. In front of said spade it turns away from the cathode, dividing its current between the locked spade and the adjacent plate. If it is transferred to another spade, the origin of the beam alters its position correspondingly, so that the total beam length remains constant. Thus the spades here serve the double function of originating the beam and deflecting it.

Trochotrons Adaptability

The symmetry and simplicity of coaxial trochotrons makes them well adaptable for mass production. In production, the characteristics of individual tubes are remarkably well reproducible and very stable throughout the useful life of the tubes.

Two different commercial designs of the coaxial trochotron are shown in Figs. 1 and 10. The tube of Fig. 1 is intended for pulse multiplex application. (Continued on page 166)

Fig. 10: 10-position coaxial trochotron designed for pulse counting purposes

Heater—6.3 v, 0.3 a
Spade and plate voltage—100 v
Plate current—10 ma
Magnetic field—350 gauss
Tube dimensions—28x42 mm (max.)
Magnet dimensions—42x30x42 mm (max.)



Measuring Cavity Resonator "Q"

Extension of absorption method of wavelength measurement provides simple means for determining changes in cavity resonator Q-factors

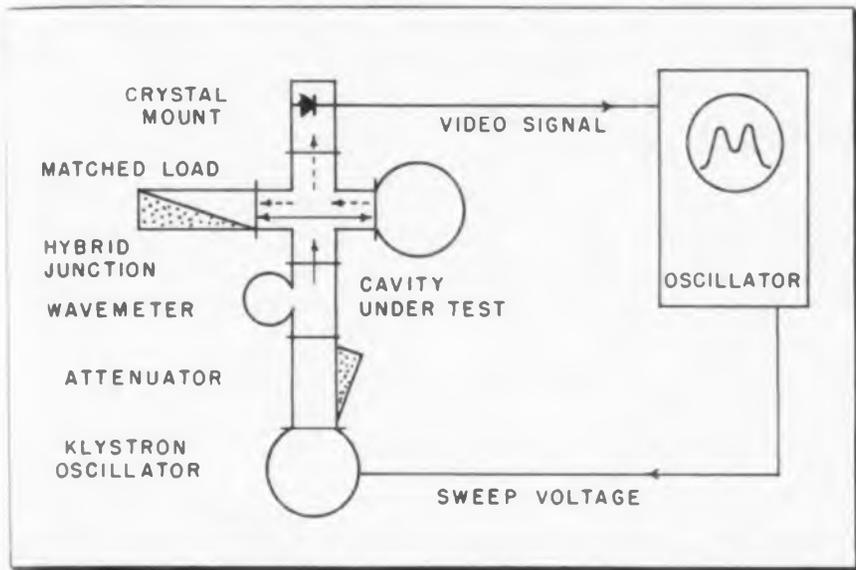


Fig. 1: Experimental set-up for Q measurements. Absorption dip is shown on oscilloscope (r)

By **MARKUS NOWOGRODZKI**,
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Hicksville, N. Y.

The determination of the resonance properties of cavity resonators is one of the basic techniques of microwave measurements. Various experimental procedures have been developed for the measurement of the cavity Q-factors, which describe the resonator properties in the neighborhood of its natural resonant frequency.¹ It is frequently necessary, however, to measure changes in Q-factors for a given cavity; for instance, to determine the increase in cavity losses caused by the insertion of metallic posts into the cavity or the effects of space charge configurations upon resonator Q-factors. What is needed, then, is a method whereby changes in cavity Q-factors can be measured with comparative ease.

Experimental Setup

The procedure is an extension of the so-called absorption method of oscillator wavelength measurements.² Shown schematically in Fig. 1, a hybrid junction is used to monitor the wave reflected from the resonator under test. The klystron

oscillator is swept in frequency by a sawtooth waveform derived from the oscilloscope time-base circuits. If the klystron frequency range for a given setting includes the resonant frequency of the cavity being tested, an absorption dip in the klystron mode pattern will be observed, as shown in Fig. 2. The resonant frequency of the cavity can be measured by superimposing a wavemeter marker on the resonance pattern in the trace. The

distance d , as we shall further prove, is proportional to the vswr at resonance.

If, now, the cavity losses change, owing to the insertion of additional metal into the cavity, the presence of an electron cloud, etc., the vswr at resonance, and therefore, d , will also change. Thus, assuming that no change occurred in the coupling system, the change in d can be considered a measure of the change in the cavity Q factors, as will be explained in the following section.

It may happen that in addition to the change in Q, the cavity resonant frequency may also change. Provided the change in frequency is small, and that the variations in klystron output, crystal-detector response, and oscillator coupling system can be neglected, the method can still be applied.

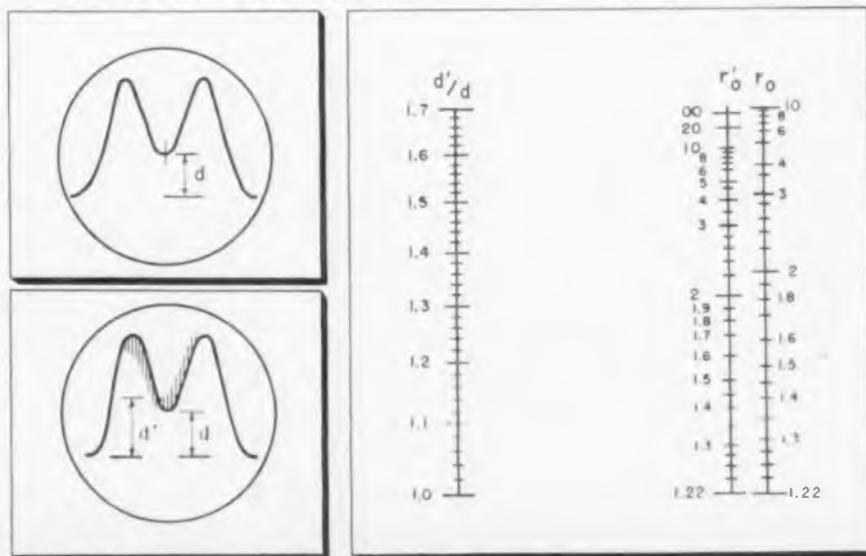
The three Q-factors of a single-loop-coupled cavity resonator are usually defined as:

$$\text{unloaded } Q: Q_u = \frac{2\pi \times \text{energy stored}}{\text{energy dissipated per cycle in cavity alone}}$$

$$\text{loaded } Q: Q_l = \frac{2\pi \times \text{energy stored}}{\text{energy dissipated per cycle in cavity and coupling system}}$$

(Continued on page 191)

Fig. 2: (l) Wavemeter at f_0 . Fig. 3: (left below) Frequency shift. Fig. 4: (r) Nomograph



Resonance Effects in Tubular Feedthru

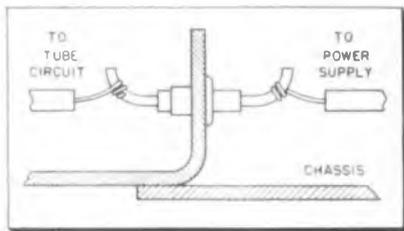


Fig. 1: Typical feed-thru capacitor use

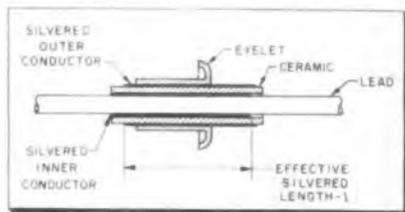


Fig. 2: Tubular ceramic feed-thru capacitor

A feedthru capacitor is essentially a bypass capacitor with separate input and output terminals. Its main purpose, when connected in some line, is to act as a filter to inhibit the transmission of energy through that line over a specified range of frequencies. While a feedthru capacitor may also serve, in some applications, as a bypass, in which case its driving-point impedance is significant, such a purpose is, in general, subsidiary to its primary purpose. Usually, although not necessarily, these two requirements go hand in hand.

An illustration of the use of a typical ceramic feedthru capacitor is shown in Fig. 1. Schematically a feedthru capacitor may be shown as a 4-terminal network connected

A thorough analysis of the design considerations involved in the use of the feedthru capacitor, with particular attention to its characteristics at frequencies up to 1000 MC, including the VHF and UHF TV bands

By **MATTHEW W. SLATE, Senior Engr.**
Allen B. Dumont Labs., Inc., East Paterson, N. J.

between source and load, as illustrated in Fig. 12.

From Z_s and Z_l and the known capacitance C of the capacitor, the insertion loss produced by the capacitor may be calculated. Effects whereby the actual insertion loss differs substantially from the value determined on the basis of capacitance alone are lumped under the term of "resonances."

The following discussion and analysis will be concerned primarily with the popular tubular ceramic feedthru capacitors, in which, as shown in Fig. 3, the outer conductor is grounded, and a wire or other device (such as a pair of lugs) connected to the inner conductor forms the terminals. Other types will be considered primarily for comparison.

Major emphasis will be placed upon operation at frequencies up to 1000 mc, the region in which this type of capacitor is generally used, including the VHF and UHF television frequencies, in which range small, inexpensive components are becoming of increasingly great importance.

Among the possible causes of

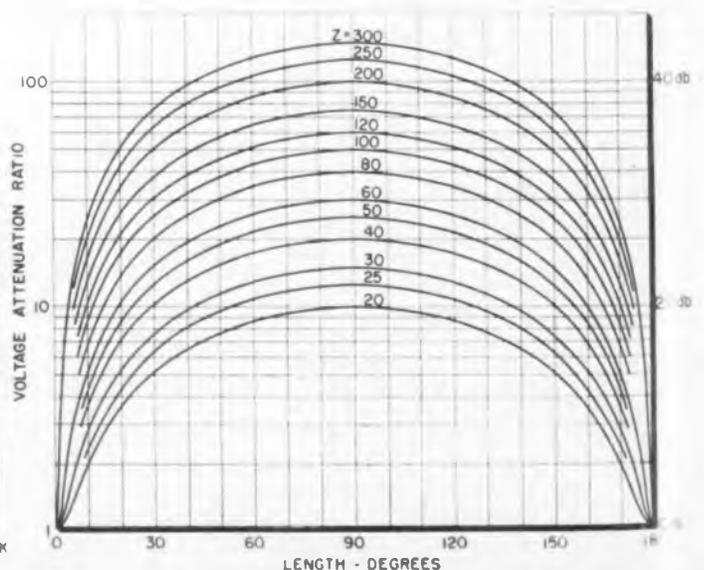
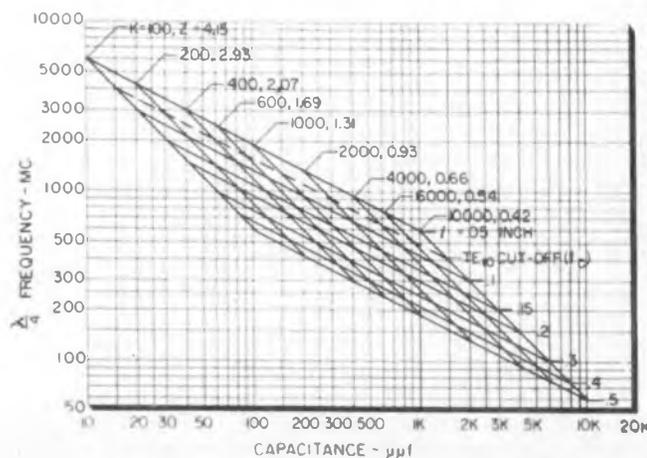
resonance effects are the following:

- (1) Lead inductances.
- (2) Molecular resonances in the ceramic dielectric.
- (3) TEM wave reflections in ceramic dielectric (transmission-line effects).
- (4) Higher order mode propagation in ceramic dielectric.

Lead inductance will not be considered since it may be taken as part of the source and load impedances and analyzed by conventional methods.

Molecular resonances generally are manifest by fairly rapid variations in dielectric constant and dissipation factor with frequency,¹ as shown in Fig. 13. One type of variation is illustrated; other types exist. While the titanates (primarily barium titanate) used in high- k ceramics are known to exhibit such behavior^{2,3,4} at frequencies which are dependent upon the chemical composition and physical structure, it was felt that should such a resonance occur in the frequency range of interest, it would be more likely for the increase in losses to increase the filtering effect than for the decrease

Fig. 3: (below) Resonance characteristic. Fig. 4: (r) Insertion loss of non-dissipative section of transmission line



Capacitors

n dielectric constant to decrease the filtering. This assumption was borne out by the measurements.

"Transmission Line" Resonances

A tubular ceramic feedthru capacitor, as shown in Fig. 14, may be considered as a section of a coaxial transmission line, and operation in the dominant TEM mode may be analyzed by conventional transmission line theory. When the length of the capacitor is an odd multiple of one quarter of the wavelength in the dielectric, the greatest attenuation occurs. At multiples of one-half-wavelength the filtering effect of the capacitor becomes small—for a lossless capacitor, it disappears.

The characteristic impedance of a dielectric coaxial line is

$$Z_0 = (138/\sqrt{k}) \log_{10} \frac{D_2}{D_1} \text{ ohms} \quad (1)$$

The capacitance per unit length is

$$C = 7.354 k / \log_{10} \frac{D_2}{D_1} \mu\mu\text{f/foot} \quad (2)$$

For a dielectric line,

$$f\lambda = 3 \times 10^{10} / \sqrt{k} \text{ cm./sec.} \\ = 1.18 \times 10^{10} / \sqrt{k} \text{ in./sec.}$$

If the capacitor is 1/4 wavelength long, $l = \lambda/4$

Then the quarter-wavelength frequency is

$$f_{\lambda/4} = 1.18 \times 10^{10} / 4 l \sqrt{k} \text{ CPS} \\ = 2950 / l \sqrt{k} \text{ MC} \quad (3)$$

Eqs. 1, 2, and 3 relate the physical parameters D_2/D_1 , l and k and the

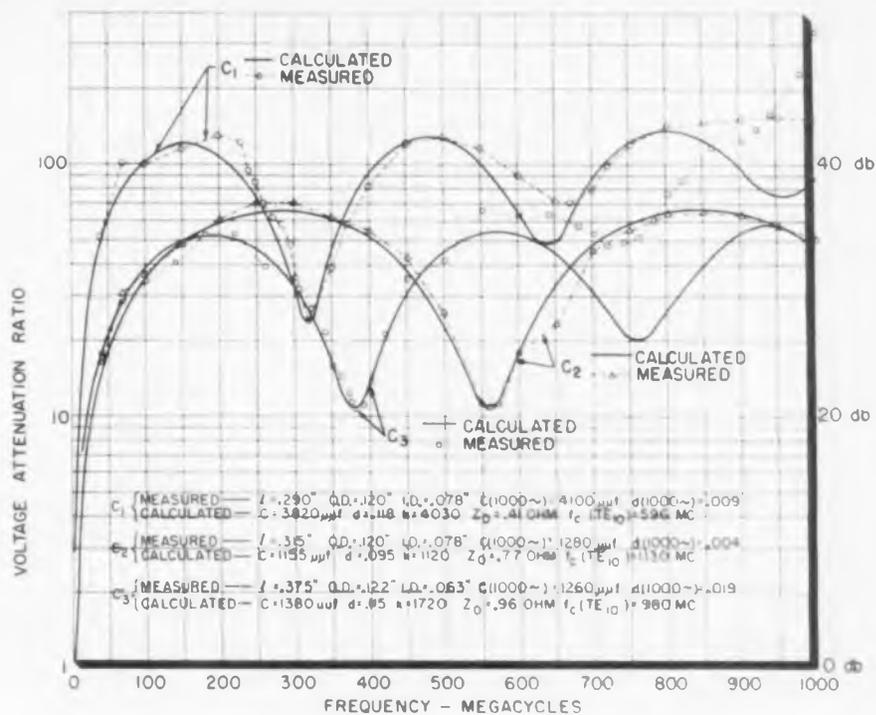


Fig. 5: Measured and calculated characteristics of tubular ceramic feedthru capacitors

electrical characteristics, Z_0 , C and $f_{\lambda/4}$.

Equations 1 and 3, together with other useful relationships which may be determined from them, may conveniently be written as follows:

$$Z_0 = \frac{138}{\sqrt{k}} L = 108 \sqrt{L} \sqrt{\frac{L}{C}} \\ = 84.6 \sqrt{k} \frac{l}{C} \quad (4-6)$$

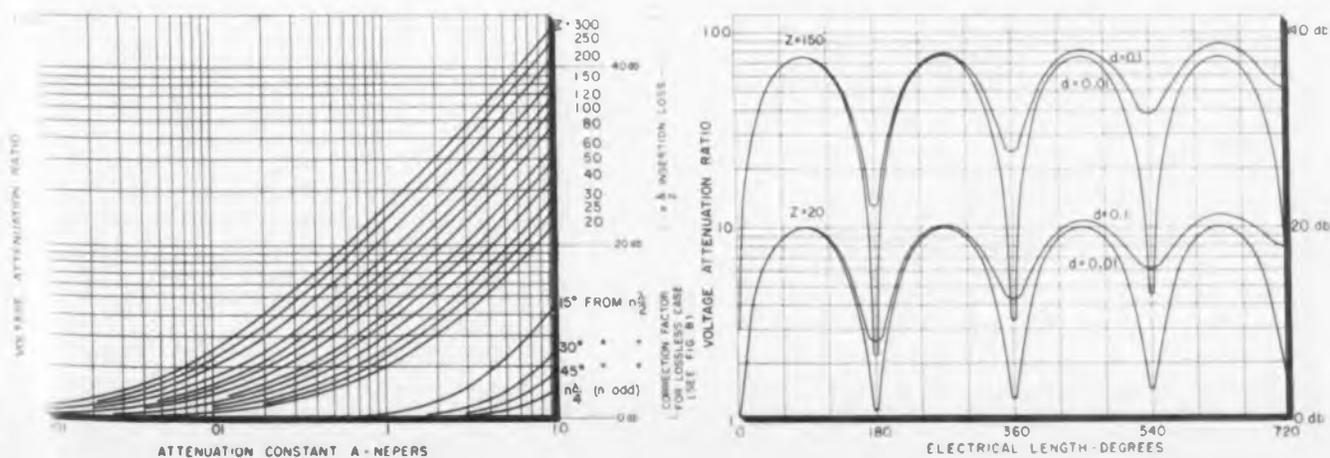
$$C = \frac{.615}{L} k l = \frac{1}{L} \left(\frac{2310}{f_{\lambda/4}} \right)^2 \frac{1}{l} \\ = \frac{11,000 L l}{Z_0^2} = \frac{1810 \sqrt{k}}{L f_{\lambda/4}} \quad (7-10)$$

$$f_{\lambda/4} = \frac{2950}{l \sqrt{k}} = \frac{1810 \sqrt{k}}{L C} \quad (11-15)$$

$$\frac{25,000}{Z_0 C} = \frac{2310}{\sqrt{L}} \frac{1}{\sqrt{C}} = \frac{21.4 Z_0}{L} \\ \text{where } L = \log_{10} D_2/D_1$$

For a ceramic tube of given dimensions, Eq. 12 indicates that for a specified capacitance the highest resonant frequency will be obtained with the highest useable value of k . Similarly, for a specified resonant frequency the highest value of C will occur with the highest useable value of k . It will subsequently be shown that the attenuation of the capacitor under resonant conditions increases with decreasing Z_0 , and by Eq. 1, with increasing k , so that for both low and high frequencies, the highest useable value of k is desired. The only limitation is that as k is increased, holding either $f_{\lambda/4}$ or C

Fig. 6: (l) Insertion loss of dissipative section of transmission line. Fig. 7: (r) Calculated insertion loss



FEEDTHRU CAPACITORS (Continued)

constant, the length decreases, and the minimum practical silvered length may limit the value of k which can be chosen.

For a form of given dielectric constant and length, Eqs. 4, 7, and 12 show that Z_0 decreases, and C and $f_{\lambda/4}$ increase, as the ratio of outside to inside diameters approaches unity.

so that the high and low frequency attenuations are increased. Therefore the thinnest practical wall thickness is generally desirable.

Typical outside and inside diameters are $1/8$ in. and $1/16$ in., giving a value of L of $\log_{10} 2$ or 0.301. Substituting this value into Eqs. 4, 7, and

11 the following expressions result:

$$Z_0 = 41.5/\sqrt{k} \quad (16)$$

$$C = 2.036 k/l \quad (17)$$

$$f_{\lambda/4} = 2950/\sqrt{k} \quad (18)$$

Higher Order Mode

The foregoing discussion has considered only the usual TEM mode. The possibility of higher order mode propagation must be taken into account.

The cutoff wavelength for the next higher mode in a coaxial line the TE_{10} mode, is approximately

$$\lambda_c = \pi (D_1 + D_2)/2 \quad (19)$$

but $f_c \lambda_c =$ velocity of propagation
 $= 1.18 \times 10^{10}/\sqrt{k}$ in./sec.

Therefore f_c (20)

$$= \frac{7.5 \times 10^9}{(D_1 + D_2)\sqrt{k}} \text{ CPS} = \frac{7500}{(D_1 + D_2)\sqrt{k}} \text{ MC}$$

For the typical case where $D_1 = 1/16$ in., and $D_2 = 1/8$ in.

$$f_c = 40,000/\sqrt{k} \text{ MC} \quad (21)$$

$$= 965 Z_0 \text{ MC} \quad (22)$$

From Eqs. 11 and 20, the relation between quarter-wavelength frequency and TE_{10} cut-off frequency is

$$f_c/f_{\lambda/4} = 2.54 l/(D_1 + D_2) \quad (23)$$

which, for the particular case of $D_1 = 1/16$ in. and $D_2 = 1/8$ in., becomes

$$f_c/f_{\lambda/4} = 13.54 l = l/0.0738 \quad (24)$$

Thus for an effective length of 0.0738 in. the TE_{10} cut-off frequency equals the TEM quarter wavelength frequency.

At frequencies above TE_{10} cut-off frequency, higher order propagation can be troublesome. However, since it is unlikely that the terminal arrangements at both ends will be efficient excitors of this mode and will have the same space phase, the probability of the TE_{10} mode propagating sufficient energy at frequencies somewhat higher than cut-off to interfere seriously with the filtering action of the capacitor is not great. Therefore the TE_{10} cut-off frequency represents a warning of possible difficulties, rather than a hard and fast limit.

The relationships involving C , Z_0 , k , l , the quarter wave resonant frequency $f_{\lambda/4}$ and the lowest higher order mode cut-off frequency f_c are shown in Fig. 3, for the typical case discussed where $D_2/D_1 = 2$. If a diameter ratio other than 2 were used, the values of capacitance shown would have to be divided by the factor

$$\frac{\log_{10} D_2/D_1}{\log_{10} 2} = 3.32 \log \frac{D_2}{D_1}$$

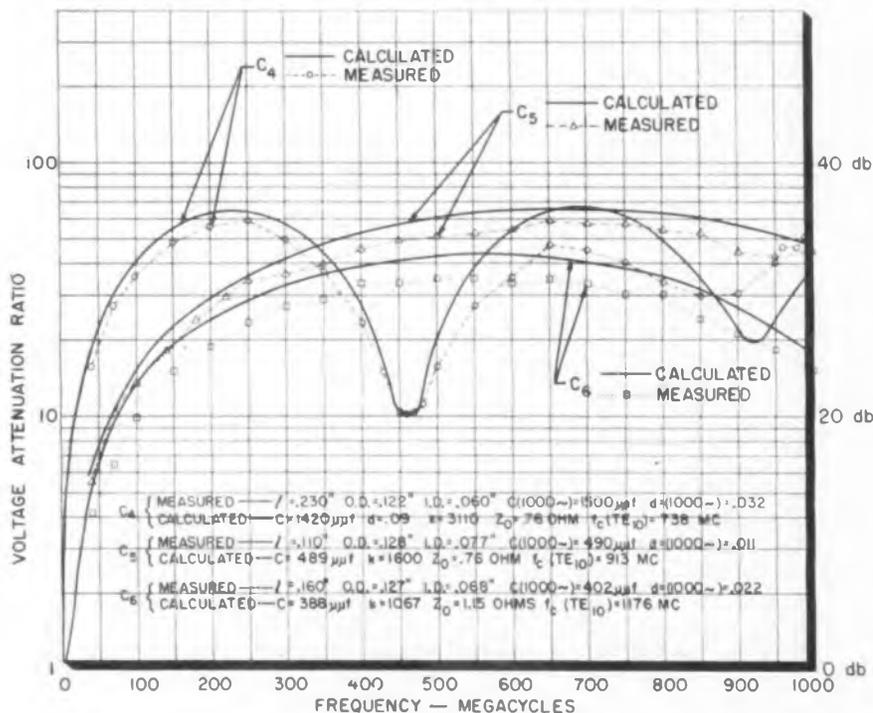
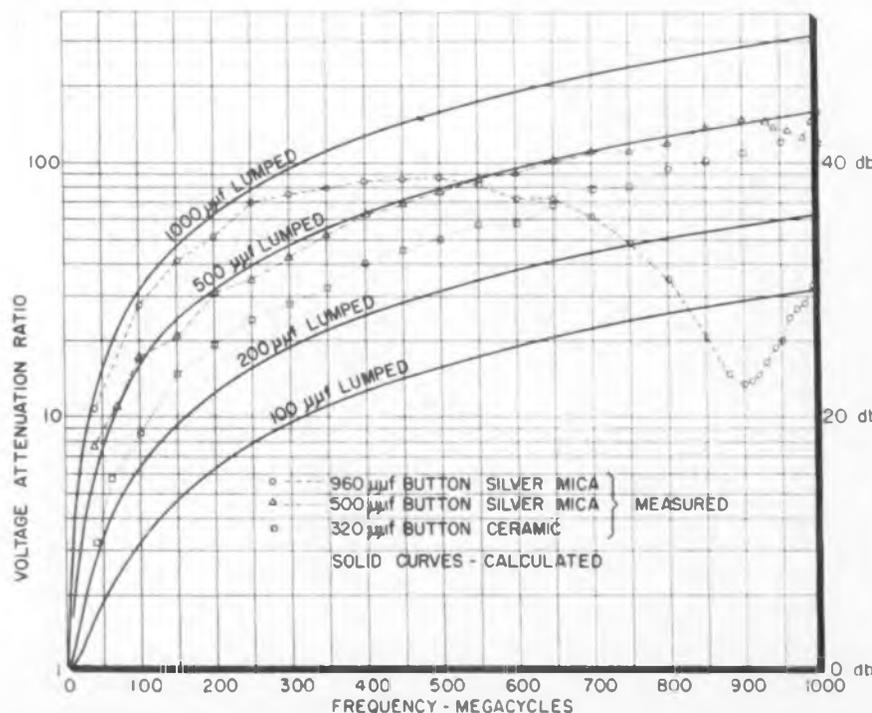


Fig. 8: Measured and calculated characteristics of tubular ceramic feedthru capacitors (See also Fig. 5)

Fig. 9: Measured characteristics of button capacitors and calculated curves for lumped capacitance



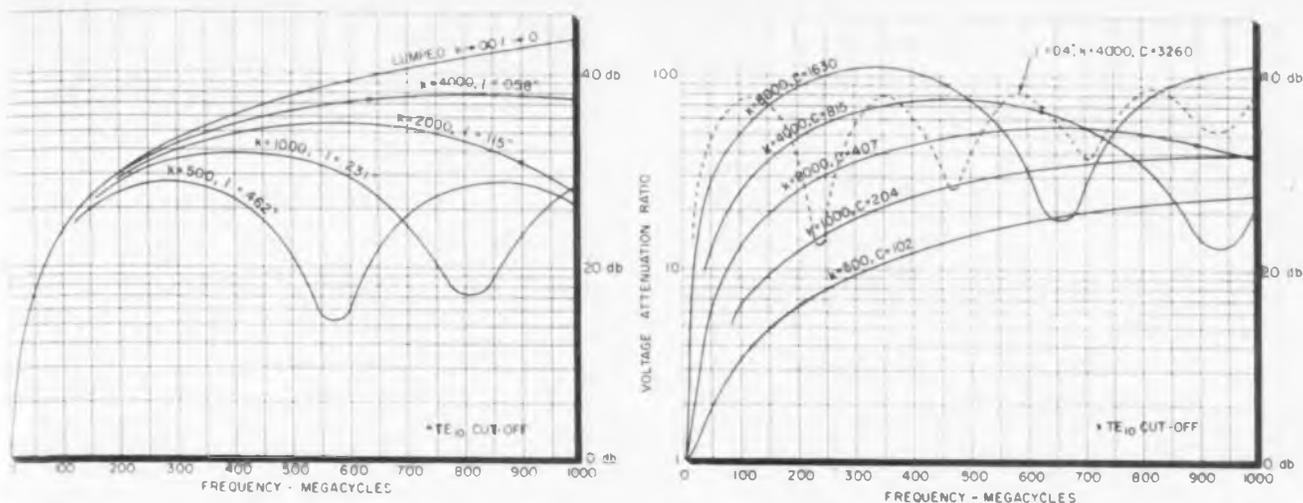


Fig. 10: (l) Calculated characteristics—constant capacitance comparison Fig. 11: (r) for constant length

the values of Z_0 , shown would be multiplied by the same factor, and the values of f_c would be divided by the factor $(D_2 + D_1) / 0.187$. Fig. 3 therefore is completely general and may be used for a capacitor of any dimensions.

It has been assumed that the dielectric constant k and dissipation factor d do not vary with frequency over the range of interest. As previously indicated^{2,3} this is at best an approximation. The measurements which are referred to later, show this assumption to be of generally satisfactory accuracy, so that the curves of Fig. 6 may be used with reasonable assurance.

Typical Application

A capacitor is available with a low-frequency capacitance of 470 μf . The silvered length measures 0.25 in., and the inside and outside diameters of the ceramic are approximately $\frac{1}{16}$ in. and $\frac{1}{8}$ in. respectively. What are the resonant and higher mode cut-off frequencies?

The intersection of the 0.25 in. line and the 470 μf line of Fig. 6 shows the quarter wave resonant frequency to be 390 mc. and k to be 900. Following this value of k to the TE_{10} cut-off line shows the lowest higher mode cut-off to be 1330 mc.

A capacitor is desired using a 0.25 in. ID and $\frac{1}{8}$ in. OD form with the quarter-wave frequency at 500 mc and as high a capacitance as possible. A silvered length of 0.15 in. is considered the minimum practical. The intersection of the 500 mc line with the 0.15 in. line gives a k of 900 and a capacitance of 750 μf . The capacitor is now completely specified.

The foregoing analysis has been dependent to the relations between the

physical constants of the capacitor, namely dimensions and dielectric constant, to the electrical parameters, primarily low frequency capacitance, and critical frequencies. It has tacitly been assumed that operation much in excess of the quarter-wavelength frequency is undesirable. Now a quantitative evaluation will be made of the operation of the capacitor at frequencies above those at which it can be considered a lumped capacitance.

Fig. 15a shows the low-frequency approximation of the feedthru capacitor as a lumped capacitance connected between two equal impedances, Z_0 , and Fig. 15b shows the more exact case of the capacitor considered as a transmission line of characteristic impedance Z_0 , and image transfer constant $\Gamma = A + jB$, where A is the total attenuation constant and B is the total phase shift constant.

If the dissipation factor of the dielectric is d , and the conductors have infinite conductivity:

$$A = \pi d l / \lambda \text{ nepers} \quad (25)$$

$$B = 2\pi l / \lambda \text{ radians} \\ = 360 l / \lambda \text{ degrees} \quad (26)$$

For simplicity it is assumed that the impedances, Z_0 , of the source and load are resistive and equal. The leads to the capacitor may be considered as lossy transmission lines having characteristic impedances of about 100 ohms (the characteristic impedance of a typical lead near a chassis will probably vary from about 50 to 150 ohms, hence 100 ohms is a reasonable approximation.) The most nearly typical value, then, of the impedances between which a feedthru capacitor is placed is 100 ohms resistive. This value of Z_0 has been used in the calculations of particular cases, but the following analysis is general.

It is assumed that the only losses in the feedthru capacitor are dielectric losses, and that dielectric constant and dissipation factor are independent of frequency.

The voltage ratio of the insertion loss can then be shown to be:

$$\left| \frac{V_a}{V_o} \right| = \left| \cos h \Gamma + \left(\frac{1+Z^2}{2Z} \right) \sin h \Gamma \right| \quad (27)$$

where $Z = Z_L / Z_0$.

This is the general expression for the voltage attenuation ratio, or the voltage V_a , delivered to a matched load, Z_L , divided by the actual output voltage when the load is connected to the source through a section of line (or other symmetrical network) of characteristic impedance Z_0 , and image transfer constant Γ .

Several particular and approximate cases may be found for which the equation can be simplified into a convenient form.

If it is assumed that $Z \gg 1$, which will generally be the case, since, as is shown by Fig. 3, the Z of typical capacitors is at most a few ohms, while Z_0 is typically of the order of 100 ohms, and if it is also assumed that A is less than one neper, (this last approximation is necessary for Eqs. 31-34 only,) which will be shown to be generally true, the following simplified expressions result:

I. Lossless Line Case — any length

$$V_a / V_o = \sqrt{\cos^2 B + (Z^2/4) \sin^2 B} \quad (28)$$

II. Half-Wavelength Line (or multiple)

$$V_a / V_o = \cosh A + (Z/2) \sinh A \quad (29)$$

III. Quarter-Wavelength Line (or odd multiple)

$$V_a / V_o = (Z/2) \cosh A \quad (30)$$

(Continued on page 180)

Noise Analyzer for

Noise level, a critical factor in radar, communications and test systems, is measured by method complying with military specifications. Noise figure linearity limits for different wattage ratings indicated



By **ALI ALLMACHER**
Dale Products, Inc.
Box 136, Columbus, Nebraska

TWO kinds of noise are present in all deposited carbon resistors: a) "Johnson" noise. This noise is inherent to all resistive impedances and is due to thermal agitation in the conductors. It is governed by the formula

$$E_n = \sqrt{5.5 \times 10^{-17} T R \Delta F} \quad (1)$$

where

E_n = RMS noise voltage

T = temperature of resistor in absolute degrees

R = resistance in ohms

ΔF = bandwidth of noise measuring instrument in cps

b) "Carbon" noise. This noise is generated in carbon conductors and results in random changes in the resistance of the unit under consideration. If this unit is properly designed it is only slightly higher than could be expected by the Johnson formula. The carbon noise is not independent of frequency. As it decreases with increasing frequency the Johnson noise which is independent of frequency becomes the more important above approximately 10 mc.

Fig. 2 shows the block diagram of the noise measuring method specified in JAN-R-11. A comparison method is used, comparing the noise voltage generated by the resistor under test with a 1000 cps audio frequency generated by a source with calibrated output.

R is the resistor under test, R_m is a matching resistor which should have approximately the same value as R . The rated voltage

$$V_r = \sqrt{P R} \quad (2)$$

never exceeding a maximum of 300 v, is applied across R , which gives with switch S1 in position 1 a certain deflection of the noise indicator. This deflection is noted and S1 is brought into position 2. If the audio frequency generator is adjusted so that the same deflection of the noise indicator is obtained, the voltage produced by this generator equals the noise voltage of the resistor R . The actual inherent noise voltage is then:

$$E_n = E_m R \left(\frac{1}{R} + \frac{1}{R_m} + \frac{1}{R_k} \right) \quad (3)$$

where

E_n = noise voltage in μv .

E_m = audio input voltage in μv .

R = resistance of resistor under test in ohms.



Fig. 1: Power supply (1) and noise analyzer

R_m = resistance of matching resistor in ohms.

R_k = resistance of input circuit of amplifier in ohms with $R = R_m$ and $R_k = 500 K$, this formula can be simplified to:

$$E_n = 2 E_m + 2 E_m R \cdot 10^{-3} \quad (4)$$

E_n and E_m in μv

R in Kilohms

Note that R appears in Kilohms to simplify evaluation.

If the rated voltage is higher than 300 v, only this maximum is applied and the correction factor

$$(v_r/v) 0.95 \quad (5)$$

is introduced, where

v_r = rated voltage

v = voltage actually used

The "noise" in $\mu v/v$ is

$$E_n/E \quad (6)$$

where E_n = inherent noise voltage in μv

E = voltage across resistor R in volts

This noise measurement is applicable only to resistors of 1000 ohms and higher.

The noise analyzer here described consists of two units, one containing the batteries, the ac operated power supply, and the audio frequency generator, the other containing the two voltage indicators, the amplifier with filter, and the resistor under test. See schematic diagram in Fig. 3. A voltmeter V measures the battery voltage. The voltage across resistor R is only half the reading of this voltmeter as the battery voltage is divided between R and R_m .

Microphone Hummer Used

A General Radio microphone hummer is used as audio source. Its output voltage reaches the amplifier over a voltage divider and switch S1 and can be measured by the input voltage indicator consisting of a two stage amplifier and a modified bridge circuit with negative feedback to increase stability.

Resistors R_m & R are clip mounted and accessible after opening the piano hinge top of the unit. The amplifier uses two 6J7's; its gain can be controlled by a 500 K pot and it can be used separately by

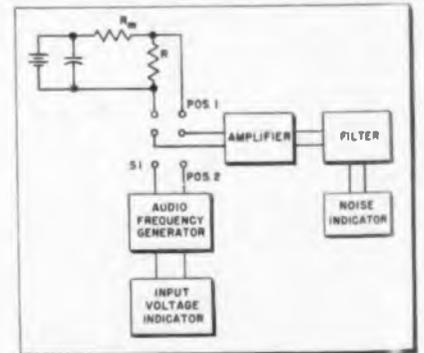


Fig. 2: Noise measuring method compares voltage from test resistor with calibrated source

bringing S1 in the neutral position and opening S2.

The filter, providing an approximate bandwidth of 200 cps to 10 kc (audio frequency spectrum), is connected to the noise indicator which uses the same circuit as the input voltage indicator.

The stabilized power supply provides the necessary dc voltages and

(Continued on page 164)

Deposited Carbon Resistors

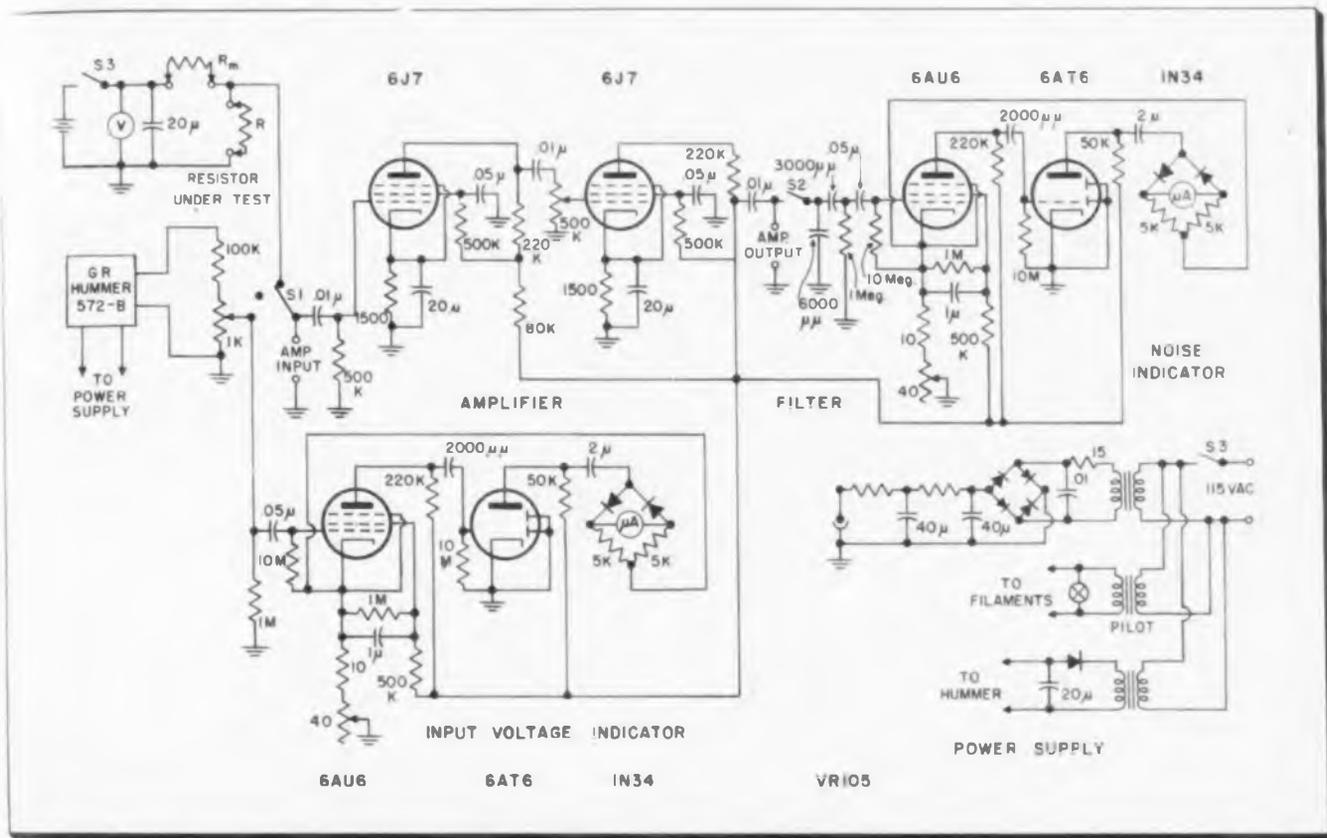


Fig. 3: Circuit of amplifier, filter, indicators and test resistor (in one cabinet), and power and audio source (in second cabinet)

Transistors for Machine Tool Control

The following information is taken from a talk by Dr. R. L. Bright of Westinghouse Electric Corp. presented at the 18th Annual Machine Tool Electrification Forum held in Buffalo, N. Y., April 6-7, 1954.

FIG. 1 shows the relationship between the voltage across the 2N55 p-n-p fused junction transistor and the load current through it for fixed values of input current. For example, this transistor could be connected in series with the supply and a resistance load, the operating point of the transistor will be along the line shown. If the input were such that the operating point was near the center of this line, the power dissipation, which is the product of voltage across the transistor and the current through it, is above the maximum rated 200 mW. However, if the operating point is near point "A," the load current is so small that even though prac-

tically the entire supply voltage appears across the transistor, the power dissipation in the unit is still less than the rated value. Similarly, if the base drive is made sufficiently large, the operating point will move down to point "S." Here, we have a large current through the unit but only a very small voltage across it;

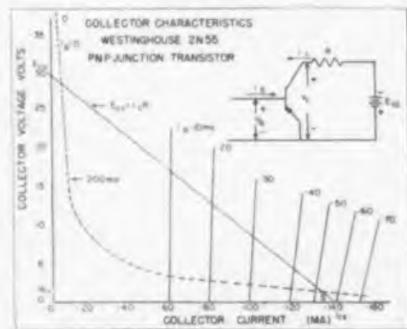


Fig. 1: Transistor circuit and characteristic

here again the power dissipation is less than the rated 200 mW. However, the power in the load under this

condition is approximately equal to the load current times the supply voltage, or about 4.2 watts. This transistor can actually control a load power equal to about 50 times the rated dissipation if its operating points are restricted to lie at the ends of the load line and if the switching time is very fast. The transistor when operated in this manner is analogous to a relay which closes a switch in series with the load when the input to its coil is energized. This characteristic is, of course, of prime importance to the machine tool industry.

One of the major obstacles in the application of transistors has been the difficulty of obtaining a stable operating point since the entire family of voltage vs current characteristics shown in Fig. 1 moves considerably with temperature and may differ significantly from unit to unit. Since we are only concerned with operation at the two extremes of the

(Continued on page 190)

Conelrad—

A sequential switching arrangement in which each station operates for brief moments of time, solving navigational deception problem

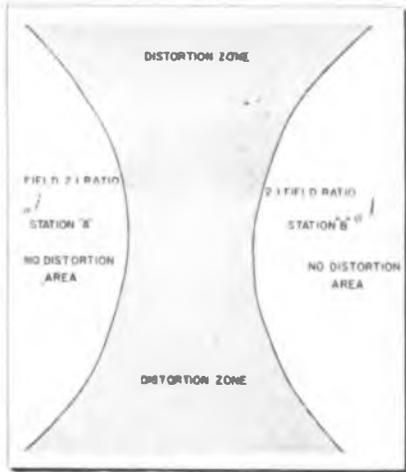


Fig. 1: Within the shaded area signals are 180° out of phase. Cancellation results

BEFORE the decision was made to adopt the "pseudo-synchronous-sequential" mode of operation, for the Conelrad system of emergency broadcasting, a great many possible combinations and procedures were investigated. The utilization of straight synchronous operation of transmitters within a particular city seemed to hold promise of meeting the main criteria of intelligible coverage of the metropolitan area and adequate navigational deception. In investigating the possibilities of common frequency operation, it was recognized that fairly high skywave field limitations would prevail in addition to whatever distortion, or "mush," zones were produced.

A fairly substantial amount of information was available on common frequency operation, most of which was concerned with actual operation of either two standard broadcast stations, or one station and its associated booster. For a regular broadcast service, experience had shown that the carrier frequency difference should be less than 0.1 and preferably 0.5 cps in order to obtain the full potential benefits of synchronous operation. Study of the resulting distortion produced when the signals from two stations approach the same order of magnitude for varying degrees of modulation and audio phase differences indicated that a ratio of carrier field intensities of 6 db (2:1) would not result in objectionable interference even for relatively large audio delays except for the most critical condition when the rf carriers were 180° out of phase. This 2:1 ratio for synchronous operation is comparable to the usual 20:1 desired to undesired ratio, commonly used in standard broadcast operation. With this ratio, the effect of audio delays is not par-

ticularly important until the delay time becomes sufficiently large to produce a noticeable echo. This aspect of the problem was not consid-

reaching such proportions over short lines.

The distortion zones computed using the 2:1 ratio of field intensities do not necessarily represent zones of total loss of service. (See Fig. 1) The distortion actually occurs in narrow bands having the configuration of spherical hyperbolas, which at 1000 kc are spaced approximately 500 ft. apart. These zones are the areas where the signal intensities are of equal values and 180° out of phase resulting in almost complete cancellation of the carrier. The width of these bands is reduced as the audio delay is reduced and as the field intensity ratio departs from the 1:1 value. With reasonable attention to these factors, the distortion bands actually represent only a small percentage of the possible area of distortion. Another factor which tends to discount the importance of



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ered at all important for an emergency system, mainly in view of the improbability of the audio delays

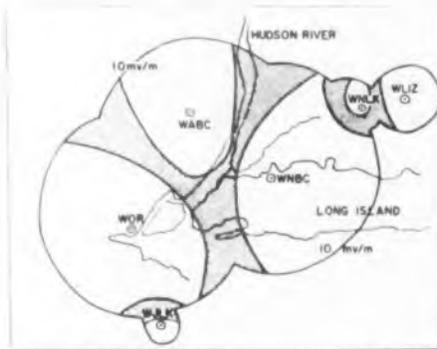


Fig. 2: Distortion zones at 640 kc

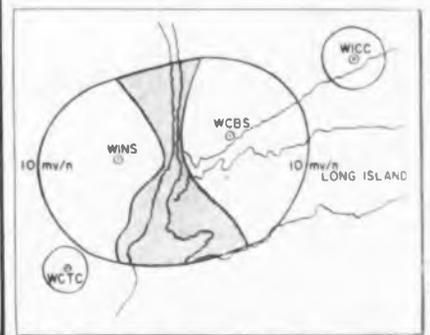


Fig. 3: Synchronous operation at 750 kc

Fig. 4: Pattern for five stations at 870 kc

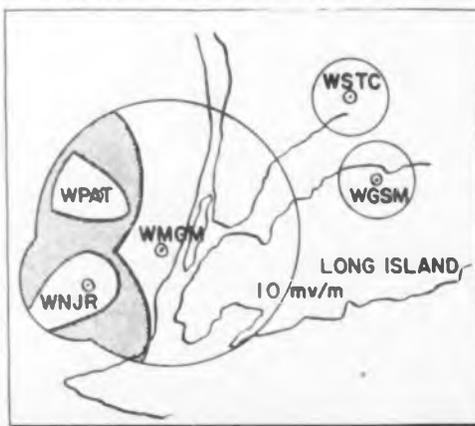
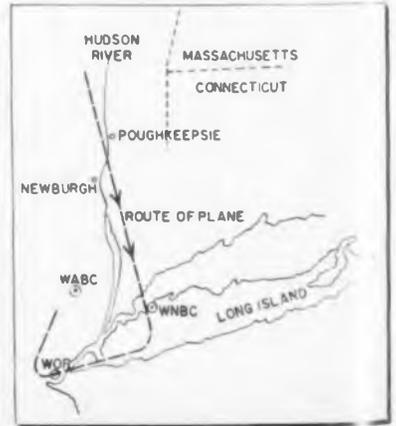


Fig. 5: "Enemy" aircraft rode Conelrad signal



Practical Operating Considerations

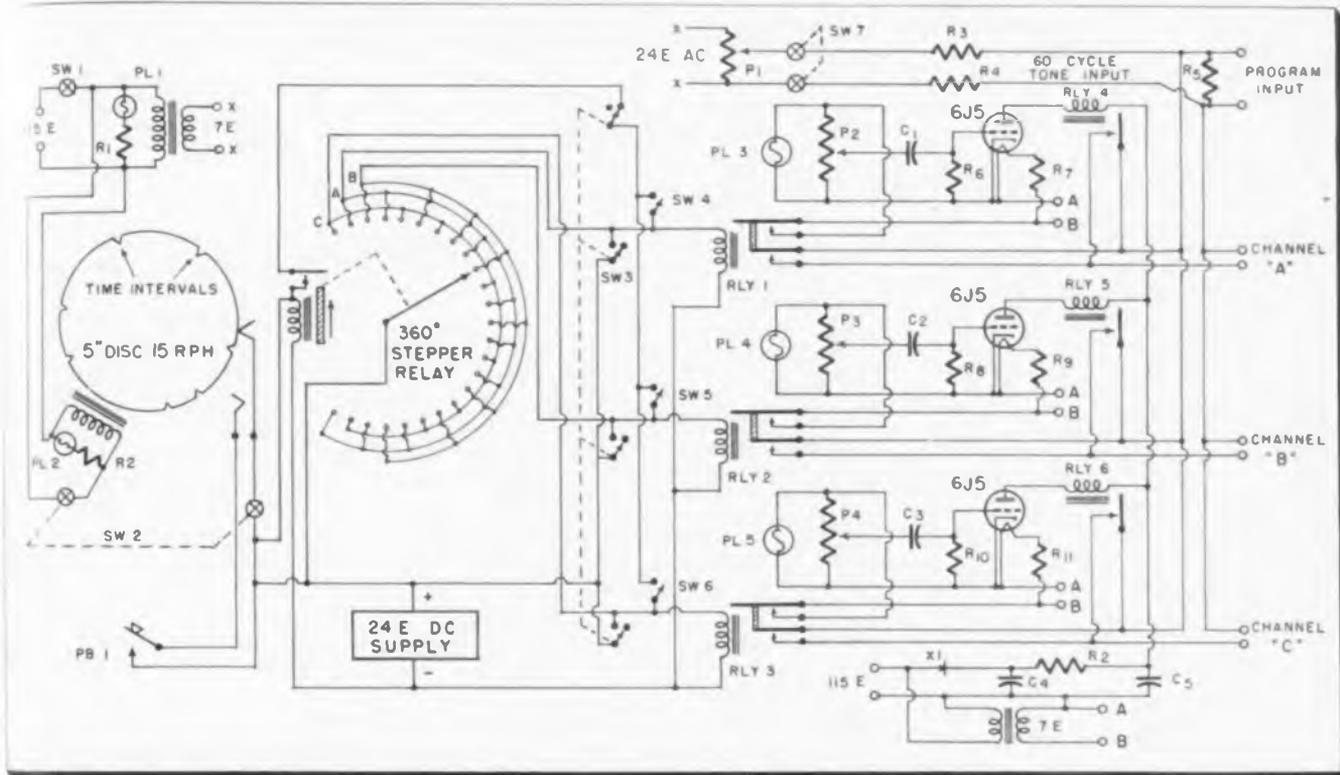


Fig. 6: Conelrad Sequential Switch used in one of the clusters in Washington, D.C.

- | | | | |
|----------------------------|--|-----------------------------|--|
| P1 — 1000 Ohm Pot, 3 watts | PL3 — Ch. "A" Talley Light | SW4 — Ch. "A" On-Off | R7, R9, R11 — 7.5 Ohms, 1 watt |
| P2 — 50 Ohm Pot, 3 watts | PL4 — Ch. "B" Talley Light | SW5 — Ch. "B" On-Off | R12 — 5100 Ohms, 1 Watt |
| P3 — 50 Ohm Pot, 3 watts | PL5 — Ch. "C" Talley Light | SW6 — Ch. "C" On-Off | C1, C2, C3 — 1 μf |
| P4 — 50 Ohm Pot, 3 watts | PB1 — Momentary Push Button for Manual Operation | SW7 — Tone, On-Off | C4, C5 — 8 μf |
| PL1 — Pilot Light (Input) | SW1 — Power Switch | R1, R2 — 750 Ohms, ½ watt | X1 — 60 ma., Selenium Rect. |
| PL2 — Pilot Light (Motor) | SW2 — Motor Switch | R3, R4 — 500 Ohms, ½ watt | RLY 1, 2 & 3 — Guardian 200 |
| | SW3 — All Channel Switch | R5 — 250 Ohms, ½ watt | RLY 4, 5 & 6 — Potter Brumfield, Type I.S., 10 K |
| | | R6, R8, R10 — 500 K, ½ watt | |

these bands is the use of a receiving antenna which has a directivity factor of 6 db in favor of one of the signals.

Intelligibility Standard

The evaluation of these previously mentioned factors from an emergency system standpoint was then approached. It was considered important that a 100% intelligible signal be present over the entire metropolitan area of our cities so that Civil Defense information, such as evacuation instructions, might be received by the general public. Although the previous discussion would indicate that the distortion zones for normal broadcast use of synchronous operation, were not too serious, it was reasoned that in view of the large number of receivers which use short indoor antennas, the use of the area within the 2:1 ratio must be seriously restricted from the criterion of 100% intelligibility. An attempt was made on paper to arrange broadcast stations in such a manner that the area encompassed by the distortion zone on one chan-

nel would lie either wholly or partly outside the distortion zone of the station arrangement on another channel. The initial attempt at such an arrangement used the frequencies 640 kc, 750 kc, and 870 kc. Actually, before an opportunity was presented to test the system from the standpoint of navigational deception, such an arrangement was completed on paper for all the standard broadcast stations on the eastern seaboard from Maine to Florida. It would be difficult to show a composite of that entire system, however. Figs. 2, 3 and 4 show the manner of arrangement for one of the cities in the eastern part of the country.

One of the difficulties encountered, once consideration was given to other parts of the country was the paucity of stations that could pos-

sibly be integrated into such a system. Standard broadcast station density varies considerably throughout the country, and it was found that almost abruptly first one and then the second channel had to be abandoned for this reason. This left much to be desired from the navigational aspect for certain groups of stations were more or less left "high and dry" on the periphery of the area of use of the initial or second channel with no appreciable protection. Throughout the consideration of such an arrangement, it was also contemplated that the radiated powers of the various stations might be sufficiently equalized to provide whatever deception was needed with the common type of automatic direction finder used in most aircraft. Such a figure was not available in

(Continued on page 176)

TWO, or more, regulated dc voltages of both polarities are frequently required for computers, servo systems, TV studio equipment, laboratory test equipment, etc. For these applications, it is not only desirable that the voltages be extremely well regulated, but also that any small-percentage variations be similar for all output voltages of the power supply system.

As an example, consider the single stage of a typical dc amplifier which is shown in Fig. 1. The accuracy is limited, among other things, by the stability of the dc supply voltages. Amplifier drift results from a change in either the positive or negative supply voltage but not from simultaneous variations of identical magnitudes. A 1% variation of the supply voltage is shown in this example. For a specific circuit, the regulation may be either greater or less; the design value customarily being dictated by operational requirements, manufacturing tolerances, and economic considerations.

In Fig. 1a, the output voltage is zero, or null for the condition of zero signal voltage at the grid of the tube. Since 10 ma. flows through this hypothetical circuit, there will be a 300 volt drop across the 30K plate load resistor, R_L , and a 300 volt drop across the vacuum tube and its bias resistor, R_K . In Figs. 1b and 1c, a 1% or 3 volt change of either the positive or negative supply sources will cause the output to depart from null. The actual departure from null may be

Designing a DC Voltage

Exceptional circuit stability is made possible by this new regulating system which provides identical variations in positive and negative supply voltages

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* Mr. Moore was formerly with Northrop.

either greater or less than 3 volts and is dependent upon other circuit parameters. The precise value of departure from null is not pertinent to the example; the main point being that such a condition will exist. If

vary in magnitude similarly and simultaneously, negligible null shift results. Fig. 1d illustrates this point. In a particular nine tube dc amplifier where the supply voltages were very closely interdependent, although the actual individual percentage regulations only slightly better than 1%, the measured null shift was found to be less than 10 mv. When the same supply voltages were independently regulated, the null variation was in excess of 3v.

Two separately regulated power supplies are commonly employed with dc amplifiers, one for the positive supply and one for the negative supply. These two regulated supplies usually employ glow-discharge type voltage-regulator or voltage-reference tubes such as the OA2 or 5651, respectively. Glow-discharge type tubes vary from tube to tube and also vary in characteristics when subjected to various ambient and op-



R. S. Selleck

R. T. Moore

several stages are cascaded, as is the usual case, the output errors are accumulative and the last stage will exhibit wide variations from null. However, if both supply voltages

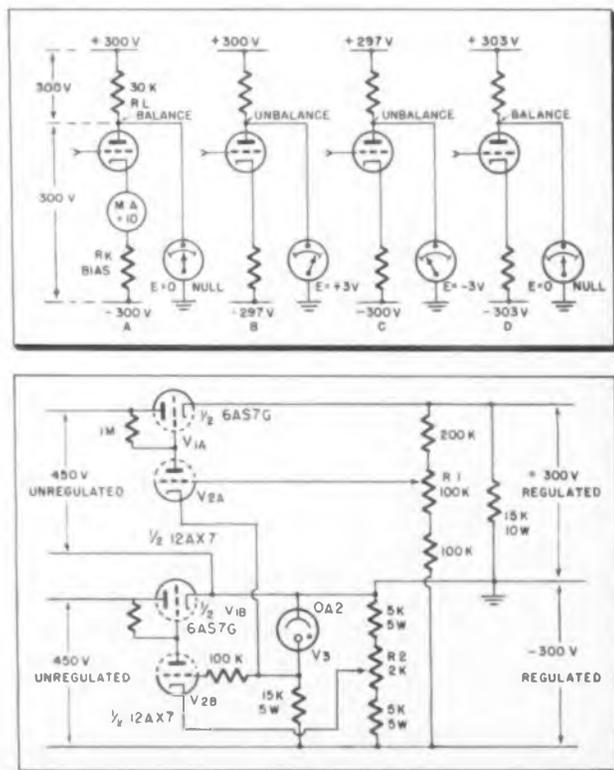
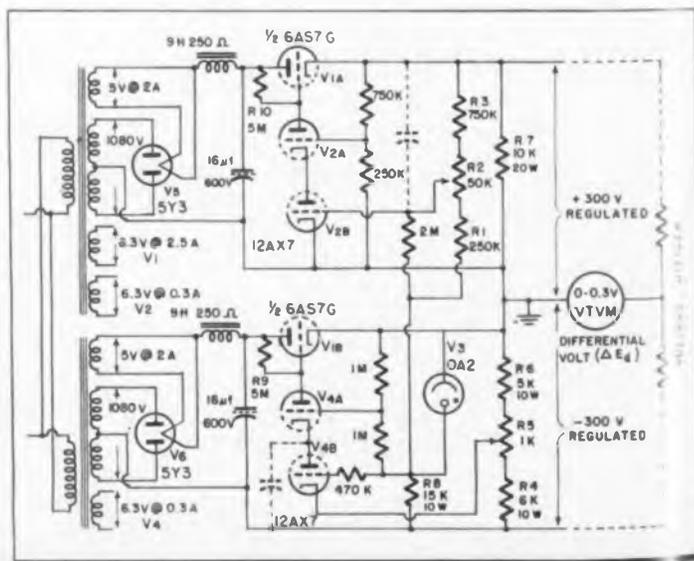


Fig. 1: (1) DC amplifier drift due to variations of power sources
Fig. 2: (left below) Common reference regulated power supply
Fig. 3: (below) Dual polarity, common reference regulated power supply



Regulator for Computers

operating conditions. As a consequence, the output voltages of two, or more, regulated power supplies using separate glow-discharge type tubes for reference voltages, will not be equal under all conditions of operation. For example, vacuum tube manufacturer's handbooks indicate a 2 volt tolerance on the OA2's regulation and a variation of 3 volts for the 651. These are the short-term variations for changes of current within the tube operating ranges. Measurements of drift characteristics reveal average rates of 0.4 mv per minute for the type OA2. Also, it must be remembered that with a 150 volt reference, the variation of a 300 volt regulated output will be greater than the reference voltage variation. Obviously, it would be desiderative to use a single, common reference for both the positive and negative supplies. If this is done, any change whatsoever in the characteristic of the common reference will affect all outputs in a like manner and the positive and negative supplies will vary simultaneously. Although systems have been described in which a single reference is used for identical polarities, methods for controlling opposite polarities have not been indicated.

A practical circuit yielding both plus and minus 300 volts, regulated by a common reference, is shown in Fig. 2. Conventional full-wave power supplies comprise the two unregulated sources. Although this supply was specifically designed for output voltages of plus and minus 300 volts, the outputs may be independently varied by means of the two adjustment, R_1 and R_2 . The particular circuit parameters shown enabled control of either output voltage from approximately 250 to 350 volts. The

percentage regulation (not to be confused with the usual definition where output variation is in terms of only 20% variation of the input voltage) of this supply was found to be better than 2% for a load change of zero to 100 ma on either output. The differential output was slightly better than 1%. This regulation is adequate for many purposes and will find many applications.

Nevertheless, there are objections to this circuit for certain critical ap-



Breadboard version of dc voltage regulator

plications. One objection is that the cathode current of V_{2A} , one-half of the 12AX7 tube, flows through the voltage reference tube, V_2 . The current will vary with load requirements as well as with the line voltage. It is desirable that current flow through a glow-discharge type electron tube be maintained at a constant value. As stated above, glow-discharge tubes exhibit voltage variations with changing currents even though such change is within the specified operating range. These glow-discharge tubes also have a "memory" effect whereby the volt-

age-current retrace characteristics are not consistent; a sort of variable hysteresis effect is obtained. A desirable design objective would, therefore, be the maintenance of constant-current through the glow-discharge tube.

Separate Windings

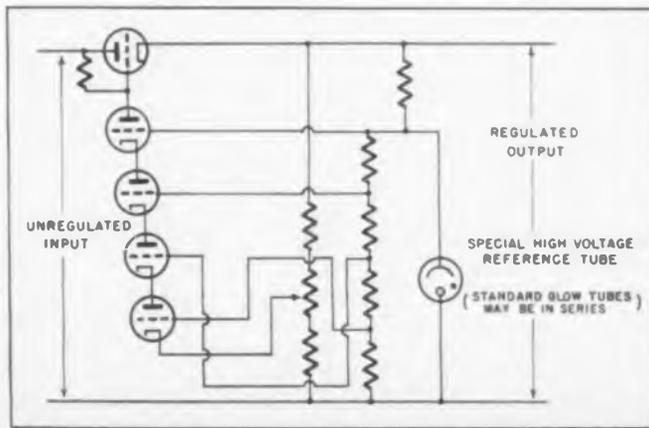
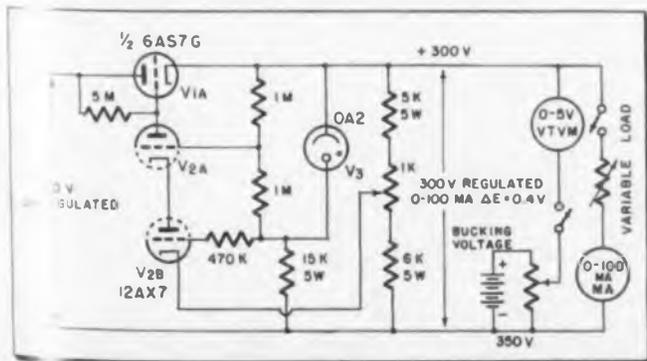
Another consideration regarding the circuit of Fig. 2 is that the filament to cathode voltage of the 12AX7 tube, V_2 , is slightly greater than that recommended by the manufacturer. Although no trouble was encountered, it would be better practice to replace the 12AX7 tube with two 6AV6 triodes and to employ separate filament windings. In this connection, inspection of several commercially available power supplies shows electron tubes operating in excess of their maximum design-center rating. Statistical evidence and other information indicates that reduced tube life may be expected when ratings are exceeded. This factor should be considered if reliability of the finished product is required.

As mentioned above, the regulation of the power supply in Fig. 2 is adequate for many applications. A point frequently overlooked is that it is good engineering to retain simplicity of design where such is compatible with the operational requirements. Regulation systems furnishing 0.01% regulation are not obtained with simple circuits. It would indeed be poor economy to incorporate such a highly regulated power supply in a non-critical application such as an industrial public address system amplifier.

Regulation

The regulation of the power supply shown in Fig. 2 may be improved by several methods. The most direct ap-

Fig. 4: (below) Regulated supply utilizing cascode dc amplifier
Fig. 5 (r) A method of cascading to regulate higher voltages



VOLTAGE REGULATOR (Continued)

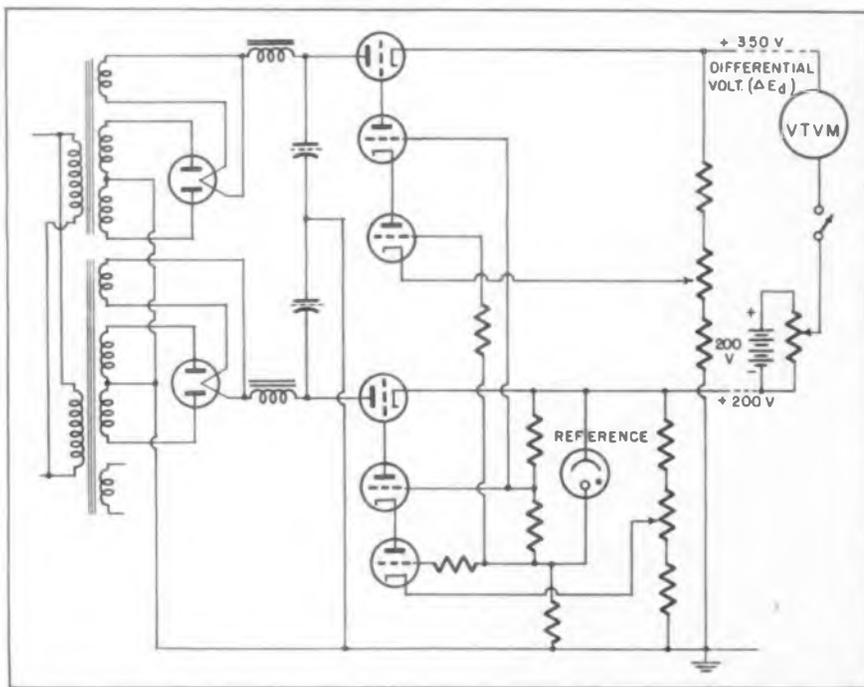


Fig. 6: Controlling unregulated voltage sources by a common reference provides low differential voltage

proach would be to use higher gain tubes. The 6AS7G tube, V_{1A} and V_{1B} , could be replaced with a pair of triode-connected 6L6 tubes at the cost of increasing the number of tube envelopes in the system. This, however, would permit more current

to be handled as well as furnish better regulation. Another method of increasing the regulation would be the replacement of the 12AX7 tubes, V_{2A} and V_{2B} , with two 6AU6 pentodes, or similar tubes. Many variations are possible. The utilization of

triodes, however, offers several distinct advantages and consideration was given to methods of obtaining increased gain with triodes.

The circuit of Fig. 4, using a modified cascode stage for the dc amplifier, was evolved and performed extremely well. The measured regulation was found to approach 0.1% for a load change of zero to 100 mA. The method used to measure the differential voltage is also shown in Fig. 3 and is self-explanatory. The modified cascode circuit furnished better regulation than the conventional single pentode-amplifier type and permits the use of simple, non-critical circuitry. It should be noted that constant-current is applied to the OA2 glow-discharge voltage reference tube, V_r . This circuit is ideal for single-output, laboratory type, voltage regulated power supplies as well as for inclusion in manufactured equipments.

Fig. 3 shows the configuration of a circuit, based upon the preceding, which supplies a regulated negative output in addition to the positive output. A common reference is used. The design features of this circuit are: (1) the comparatively high order of regulation, (2) reasonable simplicity, (3) use of non-critical components, (4) and conservative ratings of component parts.

The addition of the two condensers, shown in dotted lines in Fig. 3, will result in better transient response and will reduce ripple to the vanishing (Continued on page 184)

Calculating the Range of Mobile Systems

By RICHARD K. THOMAS
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MOBILE radio has grown tremendously since World War II, and has long since passed the stage where it was considered to be an interesting novelty of insufficient reliability for dependable communication. A large quantity of empirical data has gradually accumulated, such that an experienced field engineer could make fairly reliable estimates concerning the range of coverage to be expected from a given combination of apparatus. Such results have turned out to be in good agreement with those obtained from theoretical considerations, insofar as the factors required for the computation could correctly be assessed. The principal indeterminacy in such a calculation involves the nature of

the terrain over which the radio transmission takes place, whereas all of the other factors are under engineering control.

Basic Procedure

It is convenient to use certain rules of thumb in dealing with problems of this type in order that estimates may readily be prepared which will predict what may reasonably be expected from any proposed system. The procedure to be followed would consist in assuming a basic set of conditions and applying successive corrections thereto, as discussed below. The simplest arrangement to start with is probably two half-wave dipoles in "free space," one transmitting and the other receiving, inasmuch as the properties of such elements are well known. In particular, it will be recalled that their directivity characteristic is doughnut

shaped, so that for a given input wattage the maximum power flow (which is perpendicular to the dipole axis) will be greater than if the power were radiated equally in all directions. This increase in effective power amounts to 64%, so that we have the following relationship:

$$\text{Power flow/Area (Max.)} = \frac{1.64(P/4\pi D^2)}$$

where P is the transmitter power and D is the distance from the antenna. It will be noted that this relationship for the power radiated from the transmitting antenna does not depend upon the frequency. This of course is not the case at the other end of the radio link where we must consider the collecting ability of the receiving half-wave dipole. This turns out to be an easily remembered quantity, namely the area of (Continued on page 170)

Master Selective Control System

THE recent invention by Eugene R. Kilgen, St. Louis, of a master selective control is designed for the purpose of bringing to one point the control of many remote functions. It is not a standard control panel, but by utilizing its principle of mechanism and memory, it can be "tailor made" to fit almost any application where a desire to control many things from one point is present.

Generally speaking there is a switch, either toggle, tablet or rocker, on the panel which activates some function at a remote distance by throwing it into an on or off position manually. The number of such switches will vary in accordance with the number of functions to be controlled.

Panel Board

On the panel board is a group of push buttons varying in number, depending upon the number of patterns desired. By depressing the pushbutton and holding it down, and then throwing the individual switches into an on or off position, a pattern is immediately set up, the machine memorizing such pattern by retaining in the position on or off, whatever has been set up on the switches.

After such setting on one or more push buttons and any number of the switches, whenever the push button is depressed, immediately that pattern which has been set up on that push button will come into play, throwing on those switches which have been set on, and throwing off those which have been set

Versatile remote switching and preset mechanism highly suitable for communication controls, factory functions, aircraft. Switches going on and off are visibly detected

off. However, once a pattern has been set up on the panel, a new pattern can be set up without any alterations or rewiring of the mechanism, for the de-memorizing of each pattern is accomplished in the same manner as the setting up of the pattern.

Switch Operation

As many as 350 switches and 50 push buttons have been successfully operated from a small console that can be completely controlled by the operator at his seat. The switches can be set on and off manually without affecting the pattern, so long as the push button is not held and this, of course, then enables the operator to add switches to an already set pattern by hand, or take some of them off without disturbing a pattern set on a button. The mechanism is made either electro-mechanical or electro-magnetic, and does not require tubes.

A further advantage is that the switches go on and off visibly. When a button is pushed and a switch comes into play, it actually visibly moves to an on or off position, where the operator can see that the action has taken place and is not dependent upon lights or confirmation signals. While the principle and mechanism is standard, the size of the set and

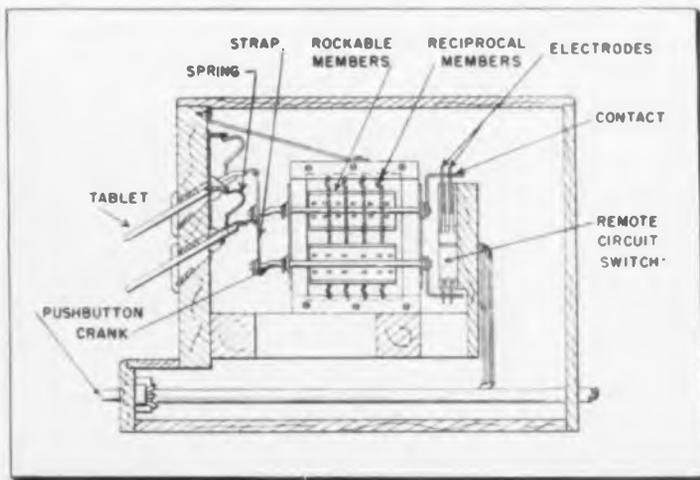
its shape can be made to conform with almost any application.

The smaller models are electro-mechanical and require no electricity for the operation of the control board, but in turn, they, of course, can control practically any voltage. The larger models are electro-magnetic and will operate on low voltage, 15 volts or less, but by relaying they again can control much higher voltage at remote distances.

At the present time two limited licenses (of patents 2,595,083 and 2,660,628) have been granted by the inventor, the first to the McGraw Electric Co. for use by its Line Material Div., limited to use in the control of high intensity lights on airports for setting up a traffic pattern. Line Material Co. has named this "Control Master," and the first airport control panel is now installed and has been successfully in use at the International Airport at Miami, Fla., and it is planned to install others in other airports. It has also been licensed to The Kilgen Organ Co. for the console control of large organs, limited to use in organs.

Licenses are still available for many applications which have been surveyed, including control of ships, communication controls, control of railroad switching and signaling, mills, refineries, public utilities, certain aircraft functions, etc.

(l) Underside of air traffic controller showing switch mountings. (r) Construction of essential switch and preset elements



Ferrite Characteristics



By **ROBERT L. HARVEY**
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SOME metals, notably iron, have long been used to carry magnetic flux because it was found to be more efficient than air. The use of iron in its solid form has been restricted to dc and low frequency ac and cannot be used to carry r-f flux because of one basic characteristic of the metals; the *resistivity* is too low and the resultant eddy current losses are excessive at the higher frequencies.

The so-called dust cores, such as powdered iron cores, are an attempt to reduce the eddy current losses at high frequencies by subdividing and insulating the magnetic material. This practice always results in a deterioration of the magnetic permanence and thus restricts the usefulness of such cores. The powdered cores are not a solution to the basic problem of providing a magnetic material for use at high frequencies. Such a material must have high specific resistivity as well as other desirable magnetic properties. Fer-

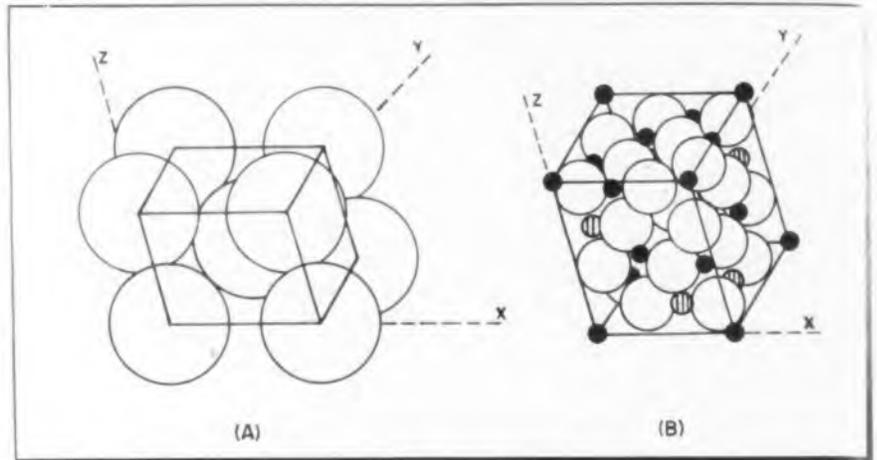


Fig. 1: Perspective view of unit cell of iron (a) and ferrite (b)

rites seem to fulfill many of the requirements for a magnetic material having superior performance for use at radio frequencies.

Composition of Ferrites

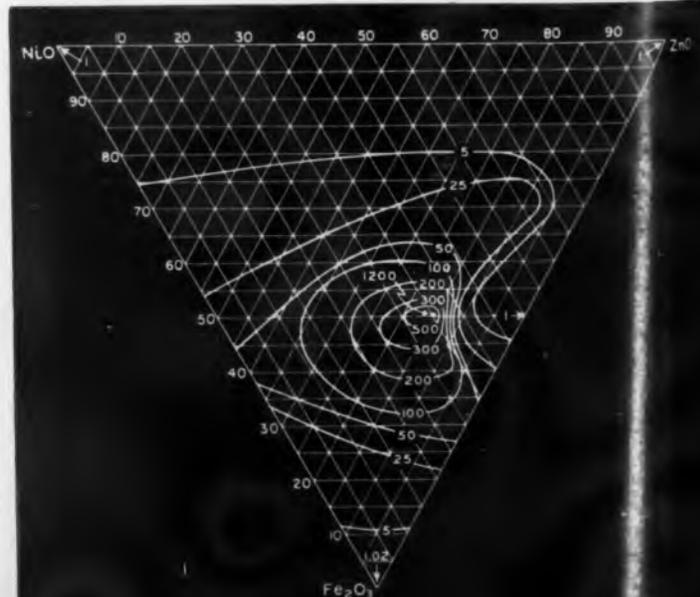
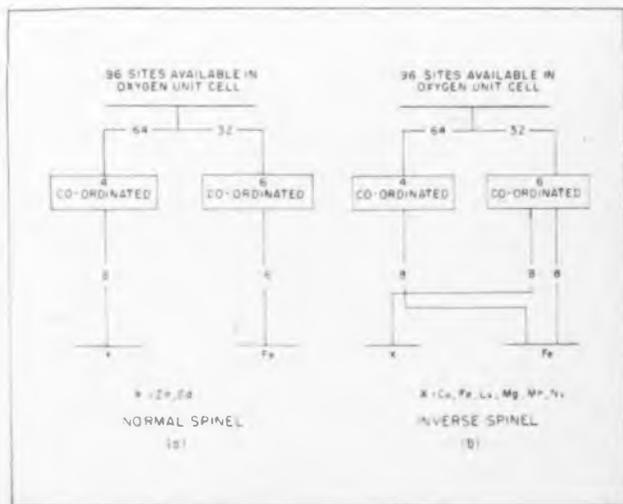
From the preceding discussion we can guess that ferrites are different from the metals, and indeed they are. In order to better understand this difference let us look at the smallest volume of the material that will give us the information we desire. This is the *unit cell*. Referring now to Fig. 1a we see a unit cell of iron. This is a simple cubic structure containing nine atoms of iron, one in the center and one on each of the eight corners of the cube. It should be observed that there is only iron in this cell.

Fig. 1b is a unit cell of ferrite. There are 32 oxygens in a close

packed arrangement as illustrated by the large open spheres. If we pretend we are very small and walk around inside this oxygen cell we will find a certain ordered arrangement. There are some places where, if we should build a tiny house, we would have four oxygens as closest and equidistant neighbors. There are 64 such places which we will call the four coordinated positions. There are other places where, if we should build our tiny house, we would have six oxygens as closest and equidistant neighbors. There are 32 such places which we will call the six coordinated positions.

Oxygen, even though it occupies the largest volume of the cell, is not enough to make a ferrite. We need something more, and the minimum requirement is some iron, illustrated by the small black spheres, and another metal which, for the

Fig. 2: (I) Spinel arrangements of Iron and X metal. Fig. 3: (r) Composition-initial permeability function. Crystallization at 1400° in air



at Radio Frequencies

frequently overlooked properties such as dimensional resonance loss discussed. Design of selective bandpass mechanical filters using ferrite transducers analyzed.

ment, we will call the X metal and is illustrated by the hatched spheres.

It has been found that there are two possible arrangements for the iron and the X metal, as illustrated by Fig. 2. The simplest arrangement is shown in Fig. 2a where all the irons (Fe) go into the six coordinated positions and all the X metals go into the four coordinated positions. This arrangement is possible only where the X metal is zinc or cadmium. This arrangement is called a normal spinel and is not ferromagnetic. In the other arrangement, shown by Fig. 2b, half of the irons go into the four coordinated positions and the remaining half of the irons and all of the X metals go into the six coordinated positions. This arrangement occurs when the X metal is copper, iron, lithium, magnesium, manganese, or nickel. This is called an inverse spinel and is ferromagnetic. At this point it would seem that one should make only the inverse (ferromagnetic) spinels and discard the normal (non-ferromagnetic) spinels, but as we will see later, some of the most desirable ferrites are made of a mixture of normal and inverse spinels.

The many kinds of permeability are likely to be confusing unless we briefly review them, taking Buzorth² as our authority.

The normal permeability (μ) is simply $\mu = B/H$ where B is the induction in gauss and H is the field strength in oersteds.

The initial permeability (μ_i) is the normal permeability as B and H approach zero.

The maximum permeability (μ_m) is the largest value of normal permeability obtained by varying H.

The incremental permeability (μ_{eff}) is the permeability measured with a dc bias present in the magnetic material.

The above types of permeability usually assume the measurements to be made on material having a closed magnetic path. The circuit engineer may use the ferrites in the form of rods, shells, or some other shape where part of the flux path is in air. In this case, the ferrite will have a certain effective permeability (μ_{eff}) which is usually defined as the ratio of inductance of a given coil with and without the magnetic core. This specification of permeability is meaningless unless all the pertinent data of the coil and core are given. The engineer has considerable control of the effective permeability by the selection of the geometry of the coil and core. A short core within a short, tall coil will have a low effective permeability, perhaps as low as two. A long core with a small cross sectional area within a long coil closely

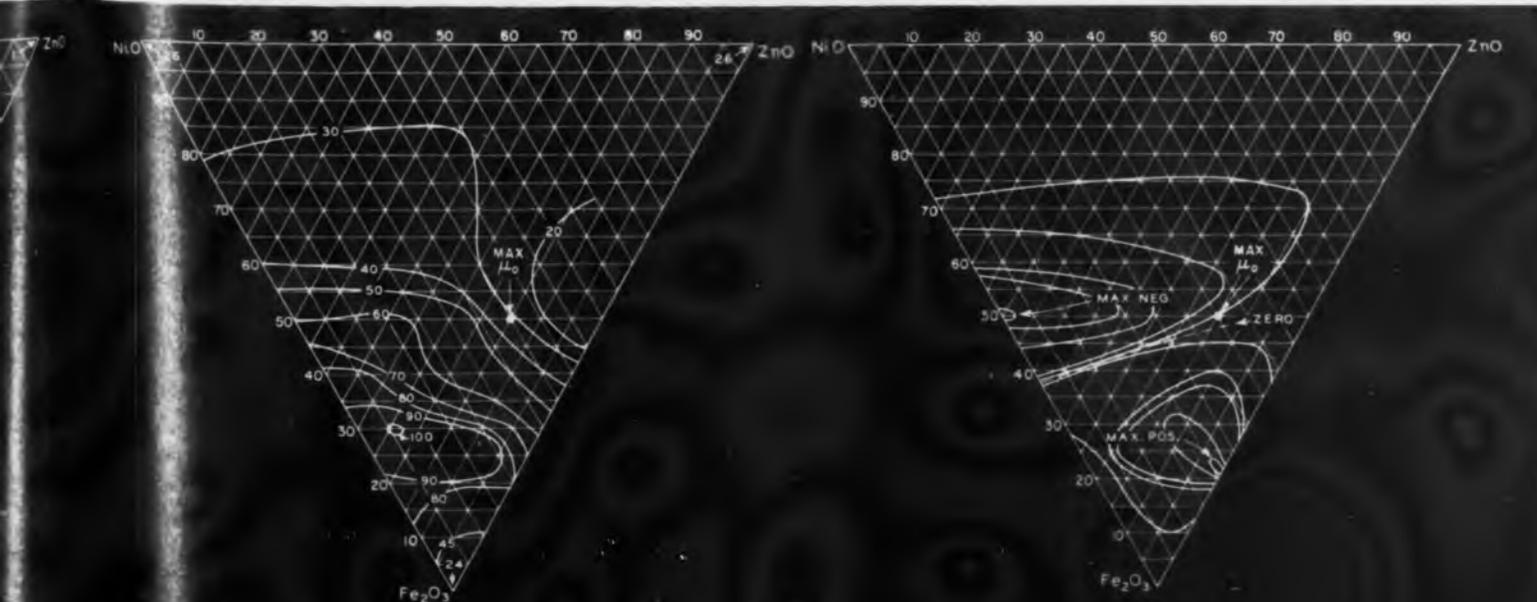


Fig. 6: Variation of initial permeability and Curie temperature as function of composition

fitting the core will have a high effective permeability, sometimes in excess of 50.

Fig. 3 shows how the initial permeability is affected by the ingredient components.¹ This triaxial diagram is for the system NiO-ZnO-Fe₂O₃, or nickel zinc ferrite. The contour lines are plotted in initial permeability. Each apex of the triangle represents 100 mole percent of the ingredient oxides, and it will be observed that the permeability is essentially unity here. Along the NiO-Fe₂O₃ side of the triangle (ZnO = 0) the peak value of permeability is about 60 for the composition 40 NiO-60 Fe₂O₃. On maintaining a constant proportion of Fe₂O₃ and replacing some of the NiO with ZnO, the permeability is increased to about 220. In reality we are mixing nickel ferrite (inverse spinel) and zinc ferrite (normal spinel). By properly proportioning the ingredients a peak value of initial

Fig. 4: (l) Relative Q at 500 kc as function of composition. Crystallization at 1400°C in air. Fig. 5: (r) Magnetostriction characteristic



FERRITE CHARACTERISTICS (Continued)

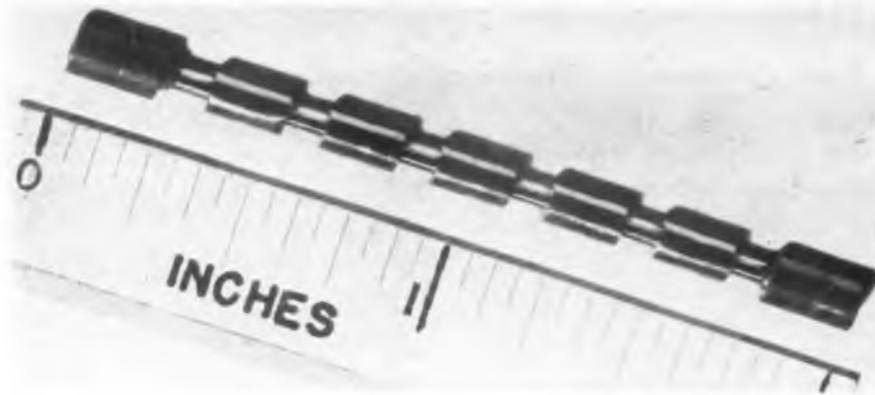


Fig. 7: 300 kc mechanical filter employing ferrite transducers

permeability of 1200 is attained. This particular system is taken to illustrate the behavior of mixed ferrites. There are many other possible systems.

The attainment of high permeability by mixing ferrites is realized only by the sacrifice of other desirable properties, notably Curie temperature (temperature at which magnetic material ceases to be ferro-magnetic). Fig. 6 shows this behavior for the nickel zinc ferrite.¹ The nickel ferrite ($ZnO = 0$) having a low permeability ($\mu_0 = 60$) has a high Curie temperature (about $570^\circ C$). As the NiO is replaced by ZnO, the permeability is increased and the Curie temperature is decreased. For the composition 15% NiO-35% ZnO-50% Fe_2O_3 , the permeability is 1200 but the Curie temperature is reduced to $120^\circ C$. In fact, this material cannot be used in equipment operating above $60^\circ C$. It should also be noted that, in general, ferrites with a low Curie temperature have a large thermal coefficient of permeability in the operating temperature range of electronic equipment.

Losses

When a ferrite core is placed in the field of a coil operating at high frequencies, basically two things happen.

- (1) The inductance, and thus the reactance (X), is increased by a factor equal to the effective permeability.
- (2) The resistance (R) is increased by a factor which depends on several types of losses in the ferrite, as we shall see.

The relative increase of the reactance and the resistance determines the increase or decrease in the Q value of the circuit.

The residual loss is not well under-

stood but is presumed to be like a frictional mechanism associated with the magnetization process. It is proportional to frequency and is the remaining loss after the eddy current and hysteresis losses are removed by Legg's equation.²

In general, ferrites have high volume resistivity, particularly those crystallized at low temperatures which may have resistivity values of many megohms centimeter. For this reason most ferrites have low eddy current loss. There are some ferrites, however, which have appreciable eddy current loss for two reasons:

- (1) There are some ferrites with low values of resistivity. For example, a nickel ferrite, crystallized at $1400^\circ C$ may have a resistivity as low as 0.2 ohms-centimeter.¹
- (2) There is experimental evidence that ferrites are not uniform throughout the body. Indeed, the data strongly indicates that the crystals may have low resistivity and the crystal boundaries are responsible for the high overall resistivity. Koops, measuring a nickel zinc ferrite, also arrived at this conclusion to explain the data¹ obtained during his work on the dispersion of resistivity and dielectric constant.

It is the author's belief that some ferrites have appreciable eddy current loss, even though it is difficult to distinguish it from the next type of loss to be discussed.

In 1948 Snoek predicted that one cannot have a ferrite with high permeability and low losses at high frequencies because of magnetic resonance and the associated losses.³ This prediction has been borne out in practice.

One of the requirements for ferro-magnetism is unpaired electron spins. These spins have a resonant frequency and when the frequency of the external flux approaches the magnetic spin frequency a precession, or wobbling, occurs which causes a high order of energy loss. The impressed frequency need not be as high as the magnetic spin resonance to cause some precession; indeed, this type of loss is sometimes evident at frequencies a decade lower than the actual magnetic spin resonance.

The magnetic spin resonance (f_r) may be calculated by using the formula,

$$f_r \text{ (in MC)} = 1.865 B_s / \mu_0$$

where the saturation induction (B_s) and the initial permeability (μ_0) are static values. Table I shows some typical ferrites and illustrates this relation.

Resonance Loss

When Brockman⁶ and his co-workers were testing large blocks of ferrite they observed a dimensional resonance loss which embraces the permeability, dielectric constant, and physical size of the ferrite body. This resonance, being electrical, is similar to a resonant electrical circuit where the inductance is represented by the size of the body, enhanced by the permeability. The capacitance is distributed and embraces the dielectric constant of the ferrite. Since the magnetic and dielectric properties of the ferrite are poor at the frequency of the dimensional resonance, this re-

(Continued on page 186)

TABLE I: MAGNETIC RESONANCE OF SOME TYPICAL FERRITES

Composition	Initial Permeability μ_0	Saturation Induction B_s (gausses)	Resonance Frequency f_r (MC)
50 Fe_2O_3 -36 ZnO-14 NiO	2500	1950	1.5
51 Fe_2O_3 -27 ZnO-22 NiO	430	3900	17
64 Fe_2O_3 -22 ZnO-10 NiO-22 $MgCO_3$	170	3400	47
50 Fe_2O_3 -50 NiO	35	2770	147
83 Fe_2O_3 -17 Li_2O_3	25	3040	230

Page from an Engineer's Notebook

No. 27 — Bandpass Filter Nomographs

By RALPH DAVIDSON, Dynamic Electronics, 73-39 Woodhaven Blvd., Forest Hills, N. Y.

THE design of filter elements may be facilitated by the use of nomographs. The nomographs on the following page for constant "K" bandpass filters are based on a construction similar to the high-pass and low-pass nomographs described in the Feb. 1954 issue of TELE-TECH & ELECTRONIC INDUSTRIES, page 87.

The following example will serve to illustrate the use of these nomographs. A bandpass filter is required for a UHF receiver. The critical frequencies are 150 to 250 mc. The filter is required to work into 52 ohms. From this data, BW is 100 mc; f_1 is 150 mc; f_2 is 250 mc; and R_0 is 52 ohms. Because of its sim-

licity and effectiveness, the constant "K" bandpass filter shown on the left side of Nomographs 1 and 2 is chosen.

To determine the series inductance (L_1), connect the 52-ohm point on the characteristic impedance scale (Nomograph 1) to the 100-mc point on the bandwidth scale with a straight line (Line 1). Reading the answer on the series inductance scale results in the correct value of $L_1 = 0.17 \mu\text{h}$.

To determine the shunt inductance, first connect the 52-ohm point on the characteristic impedance scale (Nomograph 1) to 150 mc (f_1) on the critical frequency scale (Line 2). Where the line crosses

the shunt inductance scale read off the value 0.028 μh . Connect 52 ohms on the characteristic impedance scale to the 250-mc point (f_2) on the critical frequency scale (Line 3). Where the line intersects the shunt inductance scale read off the value 0.017 μh . Subtracting these two values from each other results in the correct answer, $L_2 = 0.011 \mu\text{h}$.

On Nomograph 2, the procedure used for the series inductance is repeated to find the shunt capacity (Line 4). In this case, $C_2 = 62 \mu\text{mf}$. The shunt inductance procedure is then applied (Lines 5 and 6) to

(Continued on page 166)

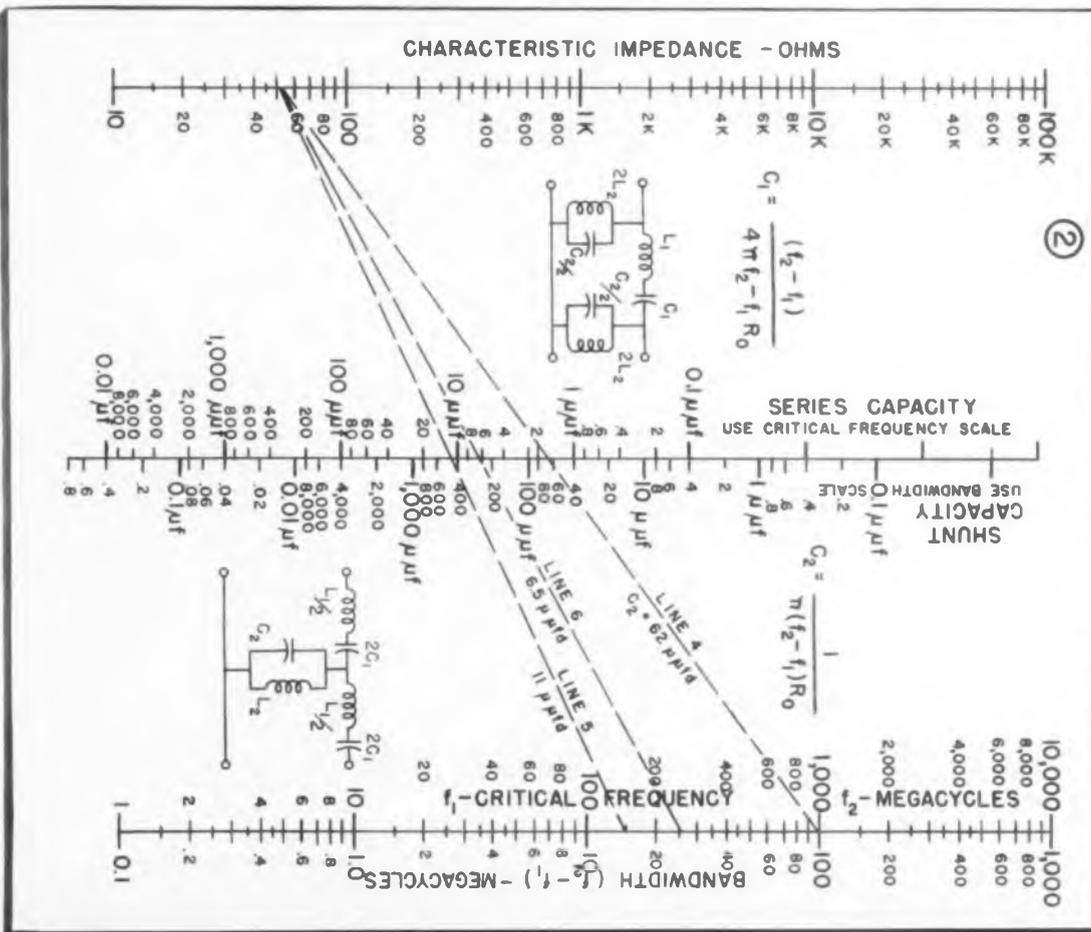
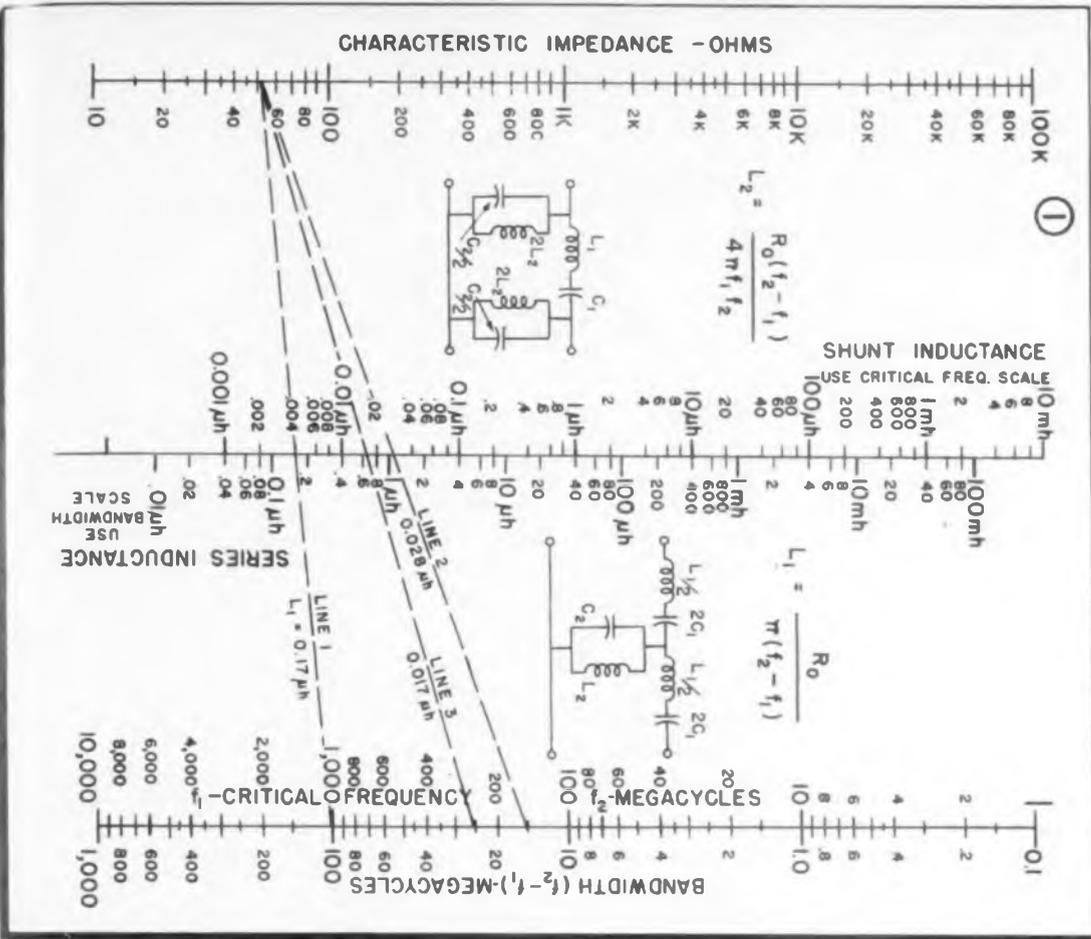
NOMOGRAPHS ARE ON NEXT PAGE →

Attenuation characteristics and element constants for pi and T structures in "M" derived bandpass filters

REQUIRED CHAR.	STRUCTURE	ELEMENT	CONSTANTS					5-6 ELEMENTS		
	TT	T	L_1	C_1	L_2	C_2	L_A		C_A	
		$M_1 L_{1K}$	C_{1K}	$d L_{1K}$	$4g$	$\frac{4g}{1-M_2^2} C_{1K}$	$\frac{h}{d} L_{2K}$	$\frac{1-M_1^2}{4h} L_{1K}$	$\frac{h}{d} C_{1K}$	$d = \frac{(1-M_1^2) f_2^2}{4 f_1 f_2}$ $M_1 = \frac{f_1 f_2}{f_{2\infty}^2} + h$ $h = \sqrt{\left(\frac{1-f_1^2}{f_{2\infty}^2} \right) \left(\frac{1-f_2^2}{f_{2\infty}^2} \right)}$
		L_{1K}	$\frac{C_{1K}}{M_2}$	$\frac{d}{g} L_{1K}$	$\frac{L_{2K}}{M_2}$	C_{2K}	$\frac{L_{2K}}{d}$	$\frac{1-M_1^2}{4h} C_{1K}$	$\frac{C_{1K}}{d}$	
		L_{1K}	C_{1K}	L_{2K}	C_{2K}					<p>4 ELEMENTS</p> $M_2 = \sqrt{\frac{\left(\frac{f_{1\infty}}{f_1} \right)^2}{\left(\frac{f_{1\infty}}{f_2} \right)^2}}$ $M_1 = \frac{f_1}{f_2} M_2$
		$M_1 L_{1K}$	$\frac{C_{1K}}{M_2}$	$\frac{1-M_1^2}{4M_1} L_{1K}$	$\frac{L_{2K}}{M_2}$	$M_1 C_{2K}$				
		$M_1 L_{1K}$	$\frac{C_{1K}}{M_2}$	$\frac{1-M_1^2}{4M_1} L_{1K}$	$\frac{L_{2K}}{M_2}$	$M_1 C_{2K}$				$M_1 = \sqrt{\frac{\left(\frac{f_2}{f_{2\infty}} \right)^2}{\left(\frac{f_{1\infty}}{f_2} \right)^2}}$ $M_2 = \frac{f_1}{f_2} M_1$
		$M_1 L_{1K}$	$\frac{C_{1K}}{M_2}$	$\frac{1-M_1^2}{4M_1} L_{1K}$	$\frac{L_{2K}}{M_2}$	$M_1 C_{2K}$				

Constant "K" Bandpass Filter Nomographs

To determine L_1 in Nomograph 1 (or C_1 in Nomograph 2), join the characteristic impedance R_0 with the critical frequencies f_1 and f_2 . This will give two inductances on the shunt scale (or two capacitances on the series scale). Subtract these two values from each other to give L_2 (or C_2). To determine L_2 in Nomograph 1 (or C_2 in Nomograph 2), join R_0 with the bandwidth frequency and read value directly off series scale for L_2 (or off shunt scale for C_2). See previous page for instructions on use and method of extending frequency range.



Multi-Purpose Radar Test Set

Compact instrument combines measurement functions of several test devices in single field unit. How to design increased portability into electronic equipment



By **AMASA PRATT**
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Testing a radar set in the field generally involves several different functions which heretofore have necessitated the use of several different instruments or packages. First, the frequency of the radar or its local oscillator may need to be checked. Secondly, the transmitter output power should be measured. Thirdly, the spectrum of the transmitter or the action of the local oscillator Automatic Frequency Control may require investigation. Finally, the receiver should be checked for sensitivity or noise figure, the recovery time of the T-R and intermediate frequency amplifier, and the various AFC and tracking lock-in or lock-out signals.

From this series of tests it can be seen that at least two, and possibly four, separate instruments are required. These instruments could, of course, be purchased and then mounted in a large console, but this is patently not the best solution. The objective is to condense and combine the functions. See Fig. 1.

The first and most obvious idea is to combine the several power sup-

plies into one. This means not only a routine consolidation but the devising of ways to reduce complexity. For instance, if there is a -105 volt bias supply on one of the functions, one need not have an additional $+105$ volt supply for, say, a thermistor bridge supply. See Figs. 2 and 5.

The second obvious course is to combine the functions of the tubes and other circuitry. It might be easy, for example, to use the kly-



Fig. 1: Portable version of radar test unit

tron as the local oscillator for the spectrum analyzer and as the pulsed oscillator in the signal generator function. This device, however, is complicated by the fact that in the spectrum analyzer function no particular care need be taken to keep the capacity to ground as low as possible, while the generation of a square $1 \mu\text{sec}$ pulse requires the very lowest capacity obtainable.

A third consolidation trick aims at simplification for the benefit of the operator, who is presumed to be anyone from the highly-trained development worker, to the line technician with a minimum of training and time. One method of simplification is to make a single knob perform several functions. This is already done to a limited degree, but

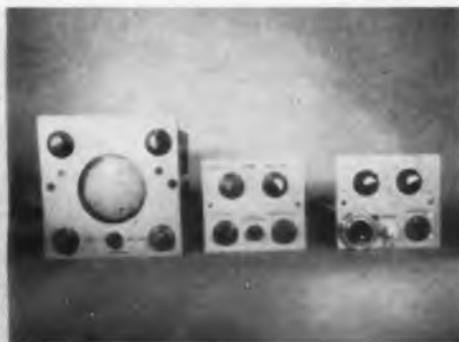
it can often be improved in this manner: Suppose there are two oscillator circuits plus a pulse length circuit, none of which need to operate at the same time. It is then possible to stack up potentiometers or variable capacitors to take care of all the functions. If a little care is used in choosing the components, the engraved scale could possibly read the same for two or more functions. If the nature of the numbers precludes this, it is surprising how much simplicity can be engineered in by color coding; e.g., when the first knob points to red numbers, the operator reads red numbers on the second dial. Grouping of related knobs is another trick that can be used. See Fig. 3.

The fourth of these consolidation ideas is the one least used in the past—the consolidation of functions in the waveguide parts themselves. In the four functions of Wavemeter, Power Monitor, Spectrum Analyzer and Signal Generator, for example, the first three functions are basically passive—that is, something from somewhere else is brought into the instrument to have something done to it. The Signal Generator function is, of course, active. The passive functions have been grouped together in previous instruments, and the active function of the Signal Generator (with its power level setting) has also been done by others. The innovation is the simple combination of the two groups. This, we know, can be done in rather large and clumsy switches; the problem is to get this switching equipment small, light, and easily actuated, with low leakage.

Waveguide switches in the past suffered from the quadruple devils of contact fingers, tight tolerances, excessive size, and leakage. Many tricks can be used to remedy these

(Continued on page 168)

Fig. 2: (l) Power supply assembly. Fig. 3 (c) Color coded knobs simplify operation. Fig. 4 (r) Bottom view shows compact plumbing



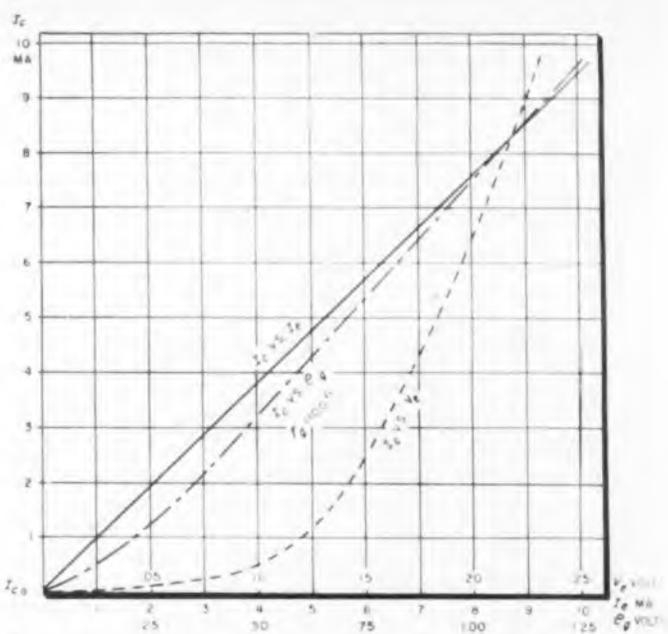
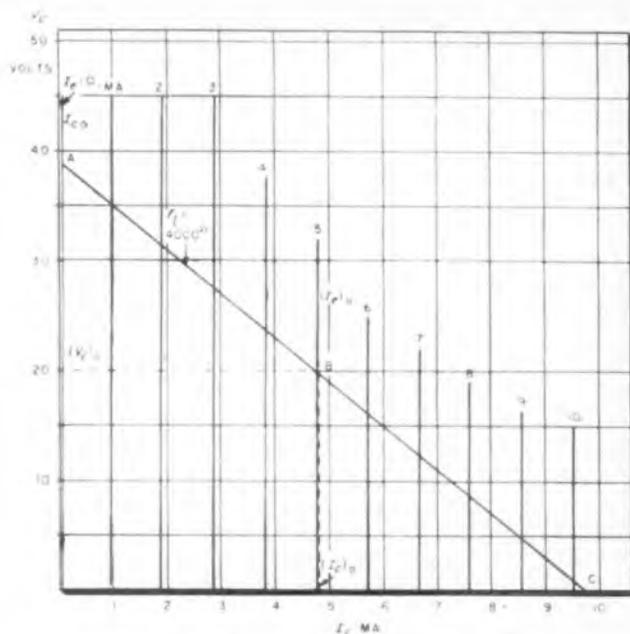


Fig. 1: (l) Static characteristics of the 2N44 transistor. Fig. 2: (r) I_c as function of emitter current and input voltage

PART ONE OF TWO PARTS

Graphical Methods Speed

Thorough quantitative analysis of static and dynamic characteristics in different modes of operation shows how high efficiency in power output applications are achieved

IN the analysis of power amplifier stages the usual small-signal techniques are usually inapplicable. As with vacuum tubes, graphical methods of analysis are most useful and will be followed throughout this article.

Static Characteristic Analysis: Grounded-Base Configuration: Consider the collector family of the 2N44 transistor in Fig. 1. A load line corresponding to a load resistance of 4000 ohms has been drawn through the quiescent operating point B, $(V_c)_0 = 20$ volts, $(I_c)_0 = 5.0$ ma. The two extremities of this load line are at points A and C, where it intersects the I_{c0} curve and the current axis, respectively. Since the I_{c0} value is usually quite low, unless the temperature rise is high, and since the bend in the characteristics usually doesn't occur until they have reached the current axis, the efficiency at maximum power output is close to the ideal 50%.

Maximum Power Output: If we neglect the dc drop in the output load, thus assuming that $(V_c)_0 = E_c$, the collector supply potential, we have the following approximate expression for the maximum power output, occurring when the swing



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extends from point A to C:

$$\text{Maximum ac power output } P_o \cong \frac{(I_c)_0 - (I_{c0})_0 E_c}{2} \quad (1)$$

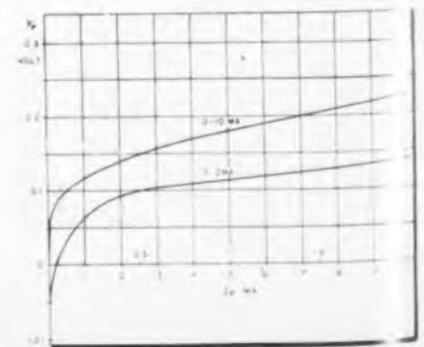
where $(I_{c0})_0$ represents the value of I_{c0} at the point A. The corresponding dc battery power $P_{dc} = E_c (I_c)_0$, whence collector efficiency, η_c , is

$$\eta_c = \frac{P_o}{P_{dc}} = \frac{E_c [(I_c)_0 - (I_{c0})_0]}{2E_c (I_c)_0} = 50 \left[\frac{(I_c)_0 - (I_{c0})_0}{(I_c)_0} \right] \sigma_c \quad (2)$$

Linearity Considerations: In the static characteristics shown on Fig. 1 the spacing between the successive curves is essentially constant, indicating that the current amplification factor, α , remains essentially constant with increasing emitter current. Thus, in order to obtain a sinusoidal output current it is necessary that the emitter current be also sinusoidal in form. This would require an approximately infinite impedance source, with consequent loss of power gain. To determine the effect of the source impedance on distortion it is necessary to consider the input characteristics of the power stage.

Input Circuit Characteristic: Fig. 3 shows the relationship between emitter voltage and emitter current for a typical transistor of the type under discussion. This characteristic

Fig. 3: Emitter voltage vs. emitter current



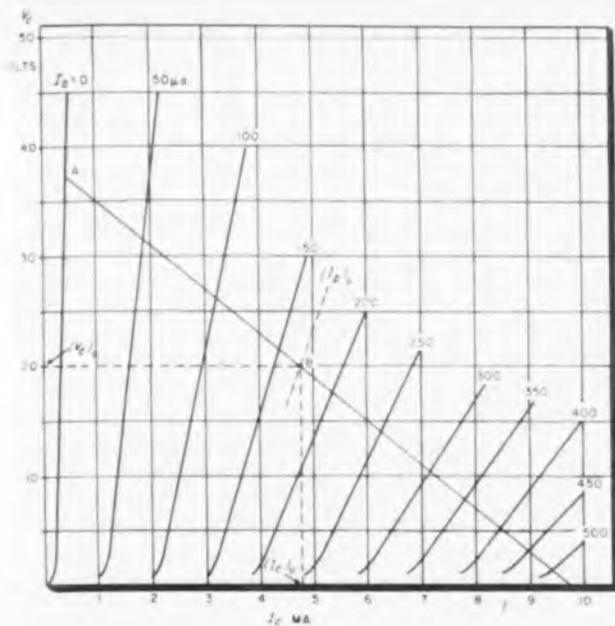


Fig. 6: 2N44 transistor operated in grounded-emitter arrangement.

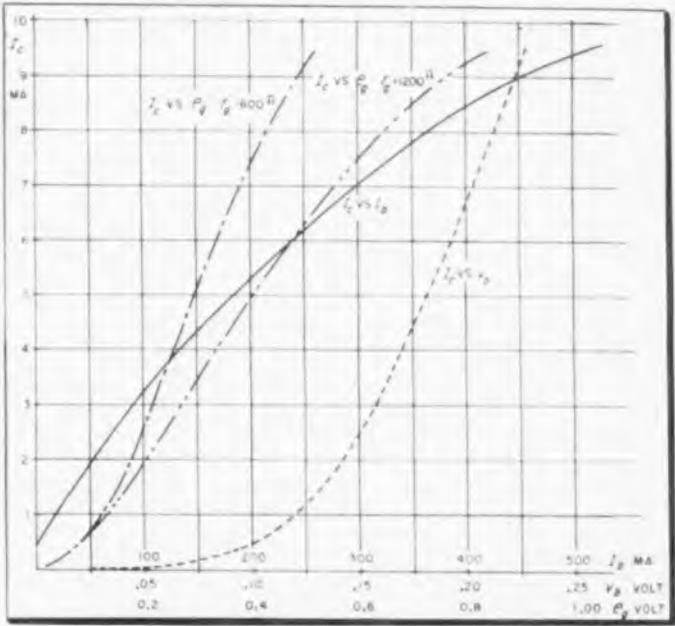


Fig. 7: Collector current of the grounded-emitter stage

Transistor Power Amplifier Design

corresponds to the particular case under consideration where the collector voltage varies with collector current as indicated on Fig. 1.

From Fig. 3 it is evident that the input circuit of the power stage is extremely nonlinear, and that if this stage were driven from a low impedance, or constant voltage, source the emitter current would be definitely non-sinusoidal. It therefore becomes necessary to use a source impedance considerably greater than the input impedance of the power stage, in order that the emitter current may be approximately sinusoidal.

Fig. 2 shows the collector current as a function of emitter current and the input voltage, for zero generator impedance and for 100 ohms. The first curve is very linear as would be expected,

likewise the curve for zero generator impedance is extremely nonlinear. A generator impedance of 100 ohms seems like a good compromise, giving reasonably linear operation except at the lowest portion. Higher generator resistance will produce a greater linear range, but only at the expense of power gain. Fig. 4 shows an experimentally obtained curve of distortion versus source impedance which confirms the above.

Useful Power Output: While the maximum power output may approach 50% of the dc power dissipation, as shown above, the distortion at this output level will probably be excessive. We can have a reasonably linear relationship between output current and generator voltage over a range of approximately 1 - 9.78 ma

of collector current, for the generator impedance of 100 ohms. From Fig. 1 we see that this corresponds to a collector voltage excursion of 0 - 35 volts. The power output for this condition is therefore

$$P_o = (8.78 \times 35) / 8 = 38.5 \text{ mw} \quad (4)$$

The input to the emitter may be obtained by means of Fig. 3 which shows the emitter voltage excursion to be from 0.115 volt to 0.230 volt, or 0.115 volt. The corresponding emitter current swing is from 1 - 10.2 ma, or 9.2 ma. Neglecting the non-linearity in the emitter circuit we can obtain an approximation for the emitter power in the same manner as for the output power. Thus emitter power

$$P_e = (0.115 \times 9.2) / 8 = 0.132 \text{ mw} \quad (5)$$

The power gain, therefore, from emitter to collector is

$$38.5 / 0.132 = 292 = 24.6 \text{ db} \quad (6)$$

The power supplied by the generator is

$$P_g = 9.2 (1.22 - 0.22) / 8 = 1.15 \text{ mw} \quad (7)$$

The overall power gain is therefore

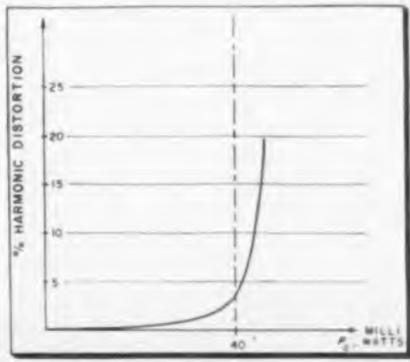
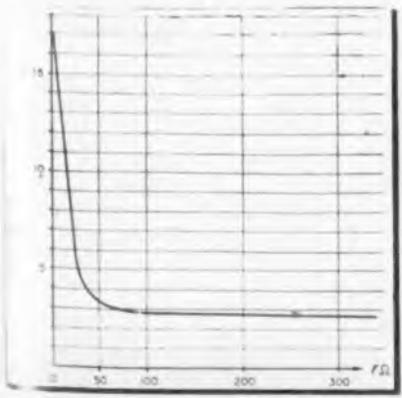
$$38.5 / 1.15 = 33.4 = 15.2 \text{ db} \quad (8)$$

There has, therefore, been a loss of 9.4 db, due to mismatch between the generator and the input impedance of the power stage.

While the above analysis indicated that the useful power output with

Fig. 4: (l) % distortion vs. source impedance.

Fig. 5: (r) Distortion as function of power output



TRANSISTOR AMPLIFIER (Continued)

good linearity was 38.5 mw, the definition of "useful" power output depends upon the amount of distortion considered acceptable. In the above case the distortion would have been

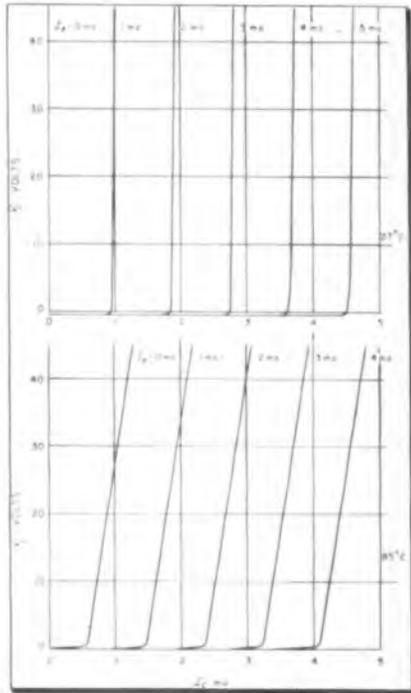


Fig. 8: Characteristics vary with temperature

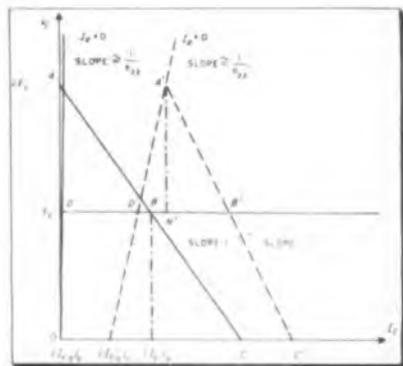


Fig. 9: Characteristics at extreme temperatures

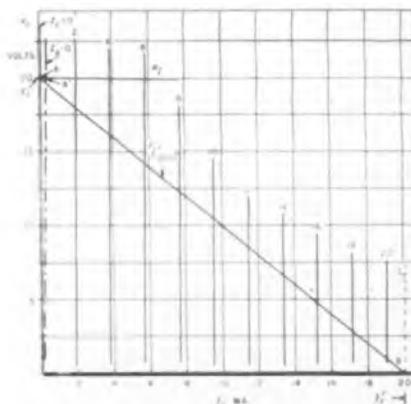


Fig. 10: Typical curves show current range

about 2%. Fig. 5 shows a typical curve of distortion versus power output for an amplifier operating under the conditions described above. It will be noted that the distortion is quite low up to about 40 mw, then rises rapidly above that value. Power output above 45 mw has been obtained experimentally with 5% distortion with grounded-base amplifiers operating as above. A rating of 40 - 42 mw would seem to be conservative, corresponding to an efficiency of about 43%.

Grounded-Emitter Configuration

Fig. 6 shows the static characteristics for the same transistor as in Fig. 1, now operated in the grounded-emitter arrangement. The control parameter is now base current, which varies through a range of 0 - 550 μ a. It will be noted that, while the characteristics of Fig. 1 were essentially parallel and evenly spaced, those of Fig. 6 change slope and become crowded at higher values of collector current. This is due to the factor $(1 + h_{fe})$ which modifies both the output admittance and the current amplification factor in the grounded-emitter configuration. Thus any slight crowding, hardly noticeable in the grounded-base characteristics, becomes greatly magnified in the grounded-emitter arrangement.

The 4000 ohm load line is again shown, and the quiescent operation point is again at B, corresponding to collector voltage $(V_c)_0$, collector current $(I_c)_0$, and base current $(I_b)_0$.

Input Characteristic: The emitter voltage-emitter current characteristics of Fig. 3 can also be used for the grounded-emitter configuration, if we consider the voltage to be now the base voltage relative to the grounded emitter. The emitter current is the sum of base current and collector current. Thus the base voltage corresponding to point B, Fig. 6, may be found as follows:

$$I_e = I_b + I_c = 0.17 + 4.80 = 4.97 \text{ ma} \quad (9)$$

From Fig. 2 we obtain, for this value of emitter current:

$$V_b = 0.18 \text{ volt} \quad (10)$$

Grounded-Emitter Linearity: Fig. 7 shows the collector current of the grounded-emitter stage as a function of base current and of generator voltage, for zero impedance, 600 ohms and 1200 ohms. It will now be noted that the relationship between

input and output currents is no longer linear. This is due to the crowding of the collector characteristics, and no value of generator impedance will straighten out this nonlinearity at the high current end. It is possible, however, to achieve a certain degree of compensation at the low current end, since the I_c vs I_b and I_c vs V_b curves bend in opposite directions. The grounded-emitter amplifier, therefore, normally has an optimum value of generator impedance which provides the best compromise between nonlinearity at one end and at the other end. Such a curve is that shown in Fig. 7 for a generator resistance of 600 ohms. With this value the reasonably linear range of operation is over a current range of 1 - 9.5 ma, voltage 1 - 35 volts, or a power output of

$$P_o = (8.5 \times 34) / 8 = 36 \text{ mw} \quad (11)$$

The power into the base is

$$P_b = (0.225 - 0.115) (0.520 - 0.020) / 8 = 0.00687 \text{ mw} \quad (12)$$

Gain from base to collector

$$G = 36 / 0.00687 = 5240 \approx 37.2 \text{ db} \quad (13)$$

Power from the generator

$$P_g = 0.500 (0.52 - 0.12) / 8 = 0.025 \text{ mw.} \quad (14)$$

$$\text{Overall power gain} = 36 / 0.025 = 1440 \approx 31.6 \text{ db} \quad (15)$$

Power loss due to mismatch = 5.6 db.

From the above it is evident that the grounded-emitter output stage has considerably greater power gain than the grounded-base stage, though less output for the same distortion. In fact if very low distortion is required it will probably be impossible to utilize the grounded-emitter arrangement unless degenerative feedback is employed to reduce this distortion.

The distortion will rise rapidly with power output in the same manner as for the grounded-base. Under the conditions described above it has been possible to obtain 42 mw of output at 5% distortion from a grounded-emitter stage, although not all units of the same type would produce this output at this distortion and, further, the optimum generator impedance varied from unit to unit. Under these conditions a conservative figure of 38 - 40 mw is probably right for the grounded-emitter, as compared to the 40 - 42 for the grounded-base amplifier.

The grounded-collector amplifier is comparatively little used in Class A amplifiers, due to its compa-

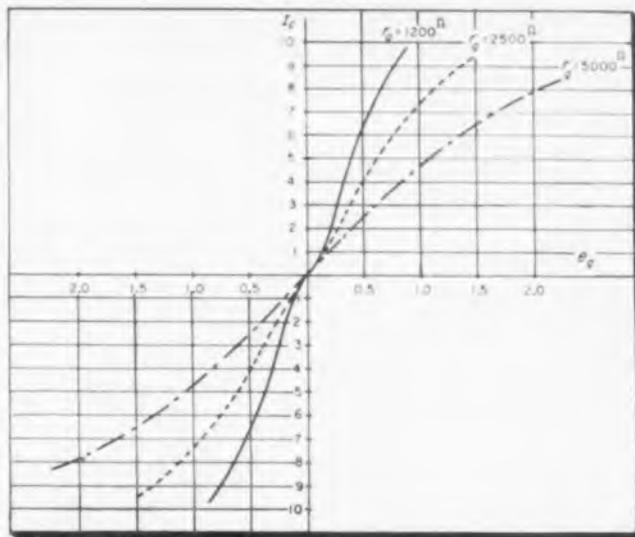
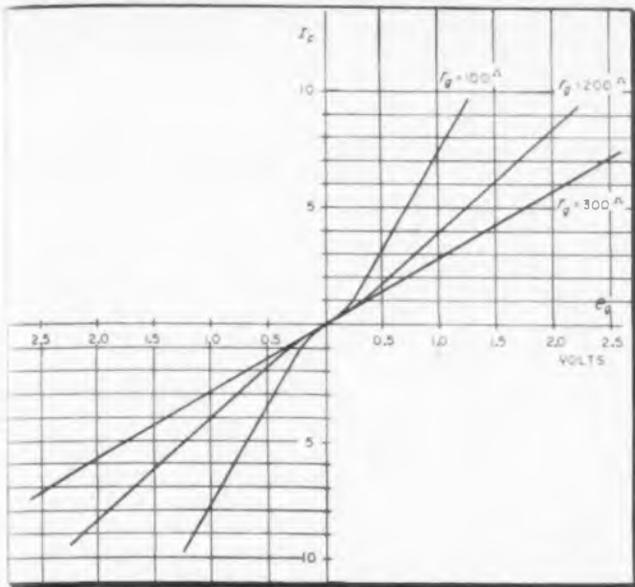


Fig. 11: (l) Curves representing push-pull operation illustrate effect of generator resistance. Fig. 12: (r) Collector current vs. generator voltage

tively poor power gain. (That is not necessarily true in Class B stages, as will be shown later.) The available power output is about the same as for the grounded-base amplifier, the linearity is comparable to the grounded-emitter. Required values of generator impedance are much higher, of the order of 25,000 ohms or higher. Power gain is about 10 – 15 db lower than that of the grounded-base amplifier, about 20 db less than that of the grounded emitter stage. If the reader desires to analyze the operation of the grounded-collector output stage the same techniques as above will serve the purpose.

Bias Stabilization

Since, as noted above, the ability to swing the output from one end of the load line to the other without clipping prematurely depends upon proper choice of operating point, it becomes extremely important, therefore, that this operating point be rigidly stabilized. This is further complicated by the fact that there is considerable internal heating when higher power is taken from a transistor, hence the value of I_{c0} may increase considerably over its room temperature value. This can produce the effects. First, assuming the operating point does not shift, the point A will move downward with the slope of the I_{c0} curve, thus producing emitter clipping at this end. Secondly, if the bias stabilization is not adequate the operating point will shift. This, in turn, will produce clipping at the other end.

In order to insure the required rigid stabilization of operating point it becomes necessary to either employ some essentially constant cur-

rent means for emitter current, or if the single battery circuit is employed, to bleed very heavy currents through the base resistors. The former is the preferred arrangement, although it requires a separate emitter bias supply and comparatively large series resistor. In order for the constant-current feature to obtain, however, it is also necessary that the dc resistance in the base circuit be held to a minimum. This may dictate the use of transformer coupling in certain cases.

In many cases it becomes necessary to operate transistor power amplifiers at elevated temperatures. According to the specification sheets given in an earlier chapter the maximum junction temperature is 100°C and the allowable dissipation is 2 mw per °C. Thus, while the unit can dissipate 150 mw at 25°C this drops to 50 mw at 75°C, and zero at 100°C. These figures can be improved considerably by the utilization of a heat sink, such as by clamping the case to a metal chassis to provide more radiating surface. By this means it is possible to increase the dissipation to about 125 – 150 mw at 75°C.

If the transistor is operated continuously at dissipations such that the junction temperature approaches this value of 100°C the characteristics are modified quite considerably. Fig. 8 shows what happens to the static characteristics as the ambient temperature is raised from about room temperature to 85°C. The amount of permissible swing has obviously been reduced, the operating point has shifted, even though a constant-current emitter supply is used, and a change of load resistance is also indicated.

Static Characteristics Analysis. Fig. 9 shows idealized $V_c - I_c$ charac-

teristics of a transistor for which only the lines for $I_e = 0$ are drawn for both temperature extremes. Solid lines are for normal operation; dashed lines and primed quantities for elevated temperatures. Since $(I_{c0})_0 \ll (I_{c0}')_0$ it may be neglected. At high temperature, the increase in back diode current, given by DD' , is equal to $(I_{c0}')_0 + (E_c h_{21}')_0$. If the dc resistance in the transformer winding is very much less than $1/h_{21}'$ and the effect of this increased current on the collector voltage can be neglected, and the operating point is moved to B', i.e., to a current equal to

$$(I_c)_0 + (I_{c0}')_0 + (E_c h_{21}')_0 \quad (16)$$

at this operating point, maximum efficiency and power output will result if the dynamic load line is such that the swing extends to a peak voltage that is twice the battery voltage, i.e., if the A'B'C' is the load line. Then

$$AA' = (I_{c0}')_0 + 2E_c h_{21}' \quad (17)$$

Therefore

$$B'N' = B'D - AA' = (I_c)_0 - (E_c h_{21}') \quad (18)$$

Whence load resistance (hot)

$$r_l' = \frac{2E_c - E_c}{(I_c)_0 - (E_c h_{21}')} = \frac{E_c}{(I_c)_0 - (E_c h_{21}')} \quad (19)$$

$$\text{and } r_l = E_c / I_c \quad (20)$$

$$\eta = 50 \text{ per cent} \quad (21)$$

$$\eta' = 50 \times \left[\frac{(I_c)_0 - (E_c h_{21}')}{(I_c)_0 + (I_{c0}')_0 + (E_c h_{21}')} \right] \quad (22)$$

$$\text{Also } P_d - e = (I_c)_0 E_c \quad (23)$$

(Continued on page 192)

CUES for BROADCASTERS

Practical ways of improving station operation and efficiency

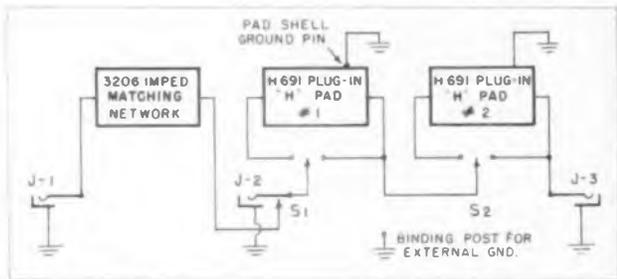


Photo (l) shows metal housing for impedance matching unit. (r) Diagram of internal connections

Impedance Matching and Loss Box

EUGENE F. CORIELL, Major, USAF, Armed Forces Radio Service, New York, N.Y.

THE photo and diagram show a simple, self-contained assembly which eliminates the usual awkward "haywire" layout with accompanying noise, hum, and rf pick-up. The arrangement is built around the Daven 3206 impedance-matching network whose dial shows the various impedances to which 600 ohms is to be matched, and also indicates the resulting loss. The 600 ohm-network input is connected to the first input jack, J-1, the 3206 being a balanced-H unit. The network output at the selected impedance (30, 50, 125, 150, 200, 250, 500 or 600 ohms) feeds through one or two balanced-H fixed-loss plug-in pads (Daven H-691 series) to the output jack, J-3. The two DPDT toggle

switches permit operation of the network with either, neither, or both pads. By using the second input jack, J-2, which is of the double-circuit or "normal-through" type, either pad or both pads can be used without the matching network. Plug-in pads for seating in octal tube sockets (flush-mounted in the top face of the box) can be obtained for various losses up to 75 db between like impedances. They are also available for use between unlike impedances at any loss above the design minimum.

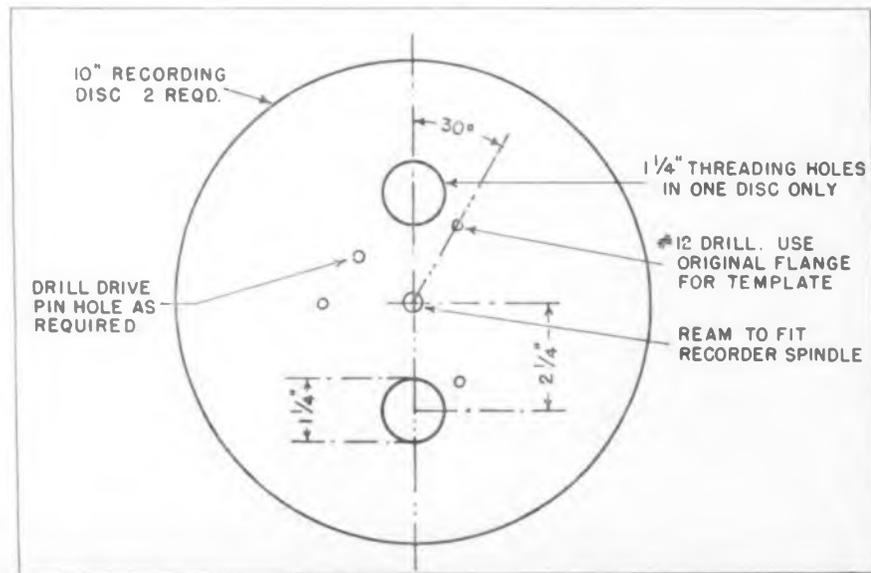
The box assembly illustrated is designed for use with balanced circuits; it can be built for unbalanced layouts by using the Daven 3202 network and T-691 T-pads. Whether balanced or unbalanced, the assembly can be used with equipment of the opposite type by bracketing the box with repeat coils. It should

also be noted the network and the pads work equally well in both directions; the box input can therefore be used as the output and vice versa when a variable impedance input is desired with fixed output.

The box is a standard 6" x 6" x 6" utility. Since the network and pads are shielded, no hum pick-up should be experienced ordinarily. However, in the presence of strong hum fields, a steel box such as the Insuline type 3800 should be used, rather than one made of non-magnetic material. If mounting on a panel for rack installation is preferred, a sheet-iron cover can be fitted to the back of the panel. The center taps of the network were left ungrounded but they can be grounded at will, individually, by additional toggle switches. Grounding the center-taps of two adjacent pads will upset the impedance match.

The unit pictured uses single-type jacks for such plugs as the Western Electric 310, although of course, the conventional broadcast type of double jack can be used. There is one precaution to be observed in using the box: When a pad is switched out, it should also be removed from its socket. Otherwise, the crossing resistor of the pad will remain across the circuit and disturb the impedance relationship. Some uses for this assembly include determination of loss needed to isolate balanced from unbalanced components when repeat coils are not available; determination of loss necessary to control feedback in reverberation set-ups; and use as a precision attenuator assembly for measuring gain and loss.

Holes in new recording blanks are drilled using old flange as template, to insure true running reel



Improved 2500' Tape Reel

T. A. HILDEBRAND, Chief Engineer, KBMY, Billings, Mont.

THE standard NARTB 2500' reel flange made of standard mill finish aluminum does not resist normal handling for very long before becoming bent and deformed and unfit for use. Efforts to straighten the sides are usually ineffectual. A much more satisfactory reel can be simply constructed by using the original hub and two 10" recording blanks for the flanges. The aluminum discs must be perfectly flat and .050" thick. Remove the lacquer

ating and use the old flange as a template to drill the three hub mounting holes. Care should be taken to center these holes accurately to insure a true running reel. A standard 1 1/4" chassis socket wrench is used to punch the threading holes in one disc. The center holes of the recording discs should bereamed to fit the spindles of the recorder. Assembly is made with 32 nuts and bolts; protruding nuts and bolts will not affect mounting operation.

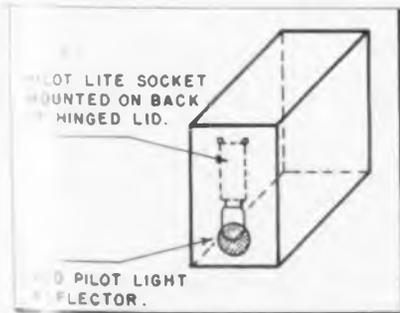
The completed reel, although small in diameter, will easily hold a full hour of tape at 7 1/2 i.p.s. and if the thinner, professional type tape is used, it holds considerably more than 1 hour. The new reel is only 1 1/2 ounces more and does not alter the spooling characteristics of the recorder. The flanges are practically solid, and their strength is much greater than the original and offers better protection to the tape from dust and mechanical abuse, nor is an adapter needed to fit the reel to the spindle.

Although not necessary, an improvement can be made on the hub by machining .050" from one of the faces. This results in much smoother rewind on most machines. This work should be done by a competent machinist to insure perfectly parallel surfaces.

Visual Monitor

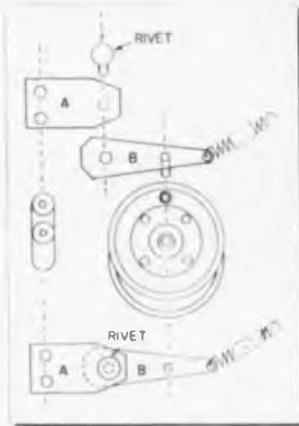
RALPH HUFFMAN, Engineer,
KNWS, Waterloo, Ia.

OURS is a one engineer, transmitter-studio combination in one building. The station is often operated by one man, therefore it is vital that monitoring be provided in the studio so that the announcer has indication that the transmitter is oper-



"Tin can" modulation indicator

indicator can be built from a Battery-Aid can, a red pilot light reflector, and a #49, 2-v bulb. The pilot light socket is mounted on the hinged lid of the can. The pilot light is connected to the secondary of the output transformer of an old ac-dc



(l) Main drive wheel assembly. (r) Small retaining snap is accessible through hole on rear panel

radio. The speaker is made inoperative and the voltage across the bulb regulated by the volume control. The light varies with modulation, and by using radio there is no doubt that the rig is on the air.

Slow Speed Solution

EDWARD J. WHITE, 136 Woodlawn St., Chicopee Falls, Mass.

OUR 4 year old PT6AH portable Magnecorder began to slow down on the forward recording speed (7 1/2 sec.). Thorough cleaning and later replacement of the dual drive wheels and springs did not return the speed to normal. The springs hold the wheels in their proper position, nevertheless speed is affected by the pull of the springs.

Solution to the speed slowdown was accomplished by the removal of the sliding suspension main drive wheel assembly and the rivet, fig 1. The rivet hole in piece "A" was elongated to allow part "B", and subsequently the drive pucks, to move in the direction of their spring pull. This increased the friction and torque of the rubber drive wheels on the forward recording motor shaft and the main speed drive control.

Although this small elongation of the hole in the bracket arm suspension assembly cured the slow speed trouble and was an easy task to perform, the actual removal of the bracket, or even the dual drive wheels, is by far a more difficult job, mechanically. Assembly of the end, front and rear panels is such that each appears to be an integral part of the main chassis. The openings in the panels are not large enough to allow the removal of the drive wheels. Therefore a panel must be removed, the easiest being the right end one.

To remove:—First: Take off the friction clutch assembly on the take-up reel. This permits the shaft to be withdrawn from the front.

Then remove the three holding screws on the bearing assembly, and this unit will be free.

Second: Remove the five 6/32 nuts and bolts holding the end panel. The panel now swings to the rear, held by the two springs from the main drive wheel arms and a third from the arm of the wheel that drives the takeup spindle.

The main drive pucks are held on their respective shafts by a small hair pin retaining snap. To remove snap, reach in the bottom chassis vent hole and lift up one of the pucks against its spring. In its top position the snap will be accessible through the one inch hole on the rear panel. (See fig 2)

The main drive wheels can then be "fished" along the inside toward the right end where the panel has been moved to allow the wheels to be freed. The dual suspension sliding brackets are freed by removing their holding bolts, the heads of which are under the forward-reverse switches on rear. Assembly, of course, is in the reverse order.

Simple Tape Recording

R. W. HOFFMAN, Chief Engineer,
WAVU, Albertville, Ala.

THE 500 ohm output of our Magnecorder, is connected through the regular patch panel to one remote input on our Gates console. The output of the tape recorder can also be fed to the console on the network input or even a turntable input. We use an ordinary line to grid transformer connected through a phone plug to the bridging input of our Magnecorder. The 500 ohm primary of this transformer is connected through the patch panel to a remote input of our console. The transformer is left connected to the bridging input of the recorder at all times without affecting the quality
(Continued on page 138)

Multiple Unit Antennas

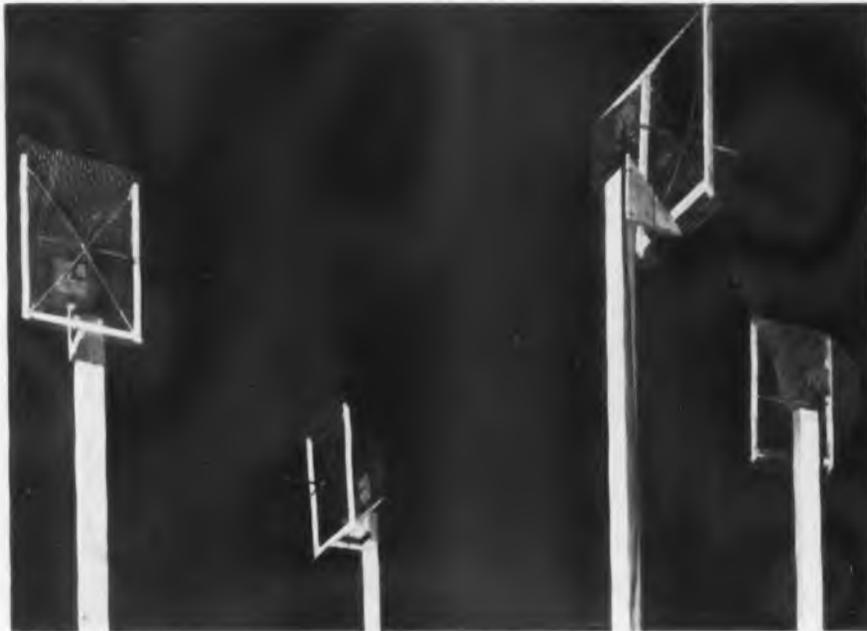
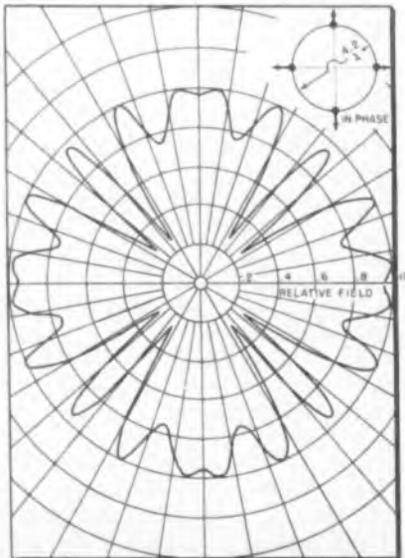


Fig. 1: Four corner reflector antennas in experimental set up are beamed at right angles from radius

Remarkable improvement in horizontal pattern uniformity results from use of new parameter in design of multiple element antennas. Installation confirms experiment

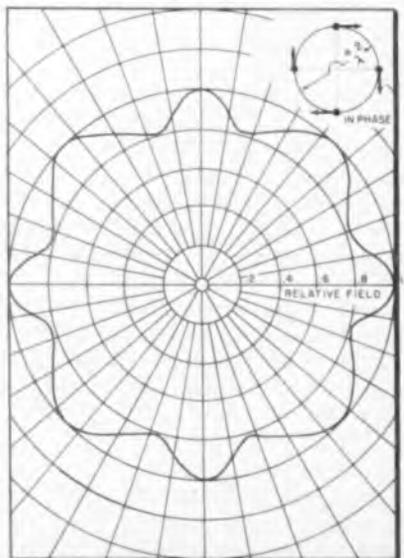
NEAR the end of World War II and during a short period following it, there were developed a number of multiple element omnidirectional antenna systems. RCA put into commercial use for TV, the "Super Gain" antenna,¹ having similar properties. Each of these systems had elements with unidirectional beams directed radially from the center of the support structure.

Fig. 2: Calculated field pattern without skew



Some time ago there was installed for WJZ-TV, on the conical dome above the mooring mast of the Empire State Building, a new type antenna² employing a principle known as "skew." This antenna was built following a suggestion by Dr. V. J. Andrew, when he pointed out a possible new parameter for multiple unit antenna installations. The unidirectional radiation property of

Fig. 3: Calculations of field pattern for 90° skew



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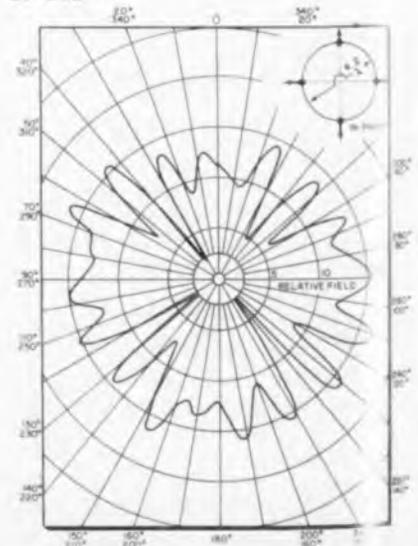
each element was retained, but the direction of the beams was rotated away from the radial direction, in an angle to be known as the angle of skew.

The result can be shown clearly on a photograph (Fig. 1) of an experimental setup with four elements. Four corner reflector antennas, with their beams turned 90° from imaginary radials extending from a common center axis are shown. It can be demonstrated mathematically and experimentally that this arrangement provides a remarkable improvement in horizontal pattern uniformity when the spacing between the antennas is increased to values of more than a wavelength.

Experimental Verification

A fairly good-sized antenna spacing was chosen for this purpose. Mathematically it was found that for a simple in-phase feed structure (easy to construct and to adjust for equal power distribution), a mounting circle of 4.2 wavelengths diameter would be proper. This corresponds to the photograph of Fig. 1. Calculated patterns were based on

Fig. 4: Experimental field pattern found with no skew



with Skew

assumed individual pattern equal that obtained from a commercial horn reflector antenna with the proportions of the elements of Fig. 1. In addition the entire back-lobe structure was eliminated in order to cut the labor of computation in half. To further simplify the work, each antenna was assumed to be concentrated at a point.

Two patterns were calculated, one for no skew, Fig. 2, and another for 90° skew, Fig. 3. The interference normally encountered with radially directed elements is demonstrated by Fig. 2, its reduction is shown by Fig. 3. Experimental patterns are shown in Figs. 4 and 5. The correlation is quite well defined; both curves show about the same degradation beyond the simple theory. Most of the difference between theory and practice may be charged to the inability to reduce the back lobes properly with simple and small reflector surfaces.

No mention of polarization has been made, although horizontal was implied when TV radiation was discussed. The units shown in the photograph and used in the tests were horizontally polarized. However, there is not a single characteristic of the skew principle which is restricted to this condition. As a matter of experimental verification of this principle, the elements of photograph Fig. 1 were oriented to produce vertical polarization and the pattern for 90° skew repeated, with the results of Fig. 6. The main reason for the success of this test stems from the fact that the E-plane and H-plane patterns of an antenna of the kind illustrated are remarkably the same and also appropriately shaped.

Horizontal patterns have been calculated for a large number of combinations of skew angle, diameter of mounting circle and phase of excitation. In the earliest studies we wanted to become familiar with the principal parameter, skew angle. It was varied in steps of 15° . The circle diameter was varied up to 1.5 wavelengths. Consideration of the entire pattern surrounding an array of elements, restricted the progressive phase that might be studied, to 0° , 90° and 180° . These are the values which will give the same patterns in all quadrants. (Pattern uniformity requires that the total phase progression around an array must equal $2n\pi$, where n is an in-

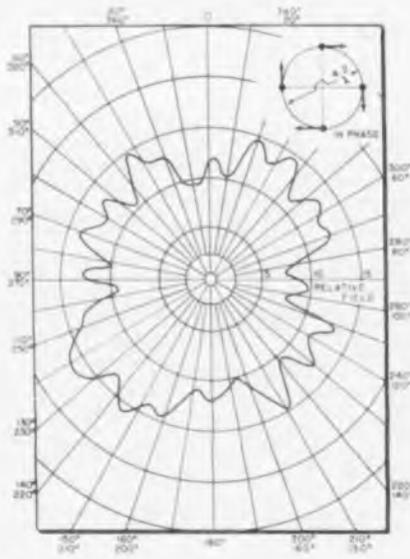


Fig. 5: Experimental pattern with 90° skew

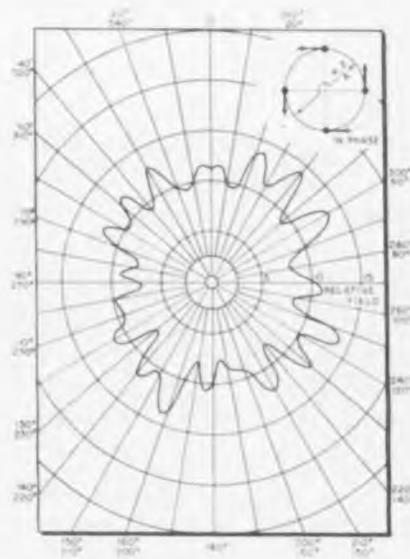


Fig. 6: Units oriented for vertical polarization

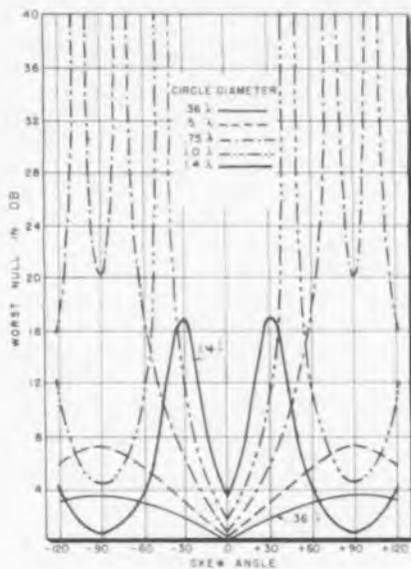


Fig. 7: Curves for the 0° phase of skew

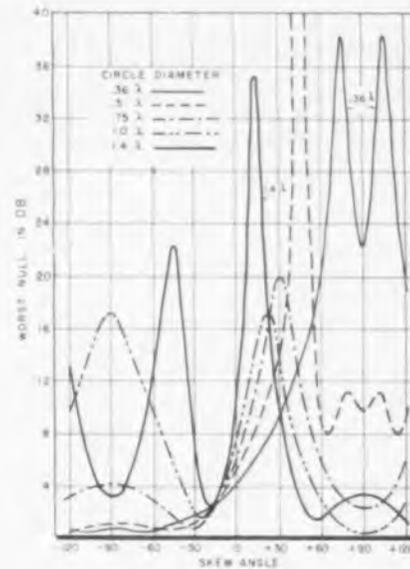


Fig. 8: Curves show operation at 90° skew

teger.) In accumulating the data we have compared the value of the radiation at the greatest lobe with the deepest null, in each pattern, and obtained a db relationship for this worst condition.

Figs. 7, 8 and 9 show the curves for the phases zero, 90° and 180° , respectively. In Fig. 7, the vertical line of no skew corresponds to the best condition for the radial elements. Note the steady progression to poorer patterns as the circle diameter increases. For low values of skew there is a similar condition. At and near 90° skew the curves are oscillatory and it becomes possible to obtain good patterns at large circle diameters. Fig. 8 extends the range of improved patterns to a considerable degree. By the proper choice of skew, most of the circle

diameters may be tolerated. Note that at no skew, all the patterns are poorer with this 90° phase rotation than for in-phase operation.

Fig. 9 completes the cycle. Now all circle diameters may be accommodated. A simple analysis serves to show why the patterns are all very poor for no skew at this phase. At an angle bisecting the space between two successive elements there is complete cancellation of the radiation.

The important observation to be made at this stage is that whereas the no skew antenna is good at one phase of excitation only, the antenna having skew is flexible and it is possible to select appropriate phasing.

Other curves may be drawn ex-

(Continued on page 169)

FM Altimeter—Audio Amplifier

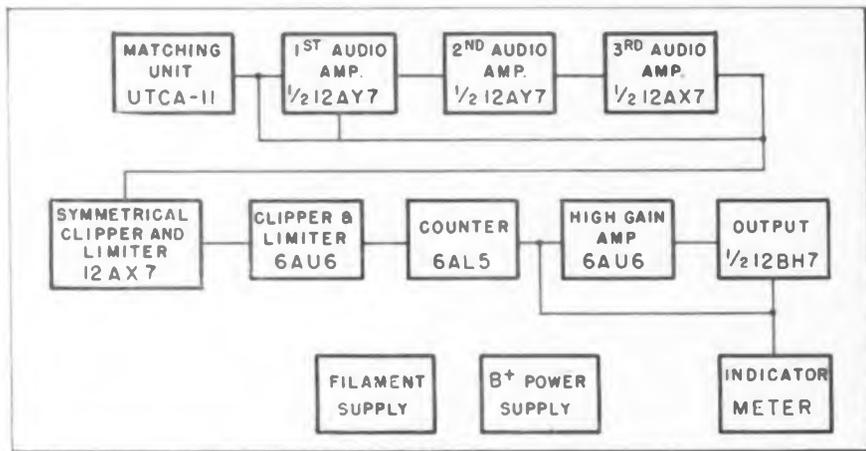


Fig. 1: Functional block diagram of audio amplifier

Operation in FM altimeter demands unique amplifier requirements, frequency response from 1-40 kc with precise gradations, and rigid control in frequency selective circuits

THE overall operation of the audio amplifier may be traced on the functional block diagram (Fig. 1). A heterodyne beat-frequency difference output resulting from mixing of the r-f oscillator and received signal in the detector is fed to the input of the amplifier which amplifies the signal to a suitable level for operation of the limiter. The amplitude limited output of the limiter is applied to the frequency counter. The counter output is a dc voltage proportional in

amplitude to the height above surrounding terrain. The counter output is amplified and dc coupled to a cathode follower output having an ammeter in series with the cathode resistor. The indicator (ammeter) is calibrated in terms of feet.

Audio Amplifier

The audio amplifier (Figs. 1 & 2) consists of a matching network and three stages of resistance-capacitance coupled amplifier. The audio

amplifier has been designed to produce a frequency response characteristic of 1 kc to 40 kc (Fig. 3) that rises approximately 6 db per octave, from 10 kc to 40 kc and falls off rapidly. This frequency response characteristic has been obtained through the use of a number of frequency selective circuits distributed throughout the amplifier as discussed below.

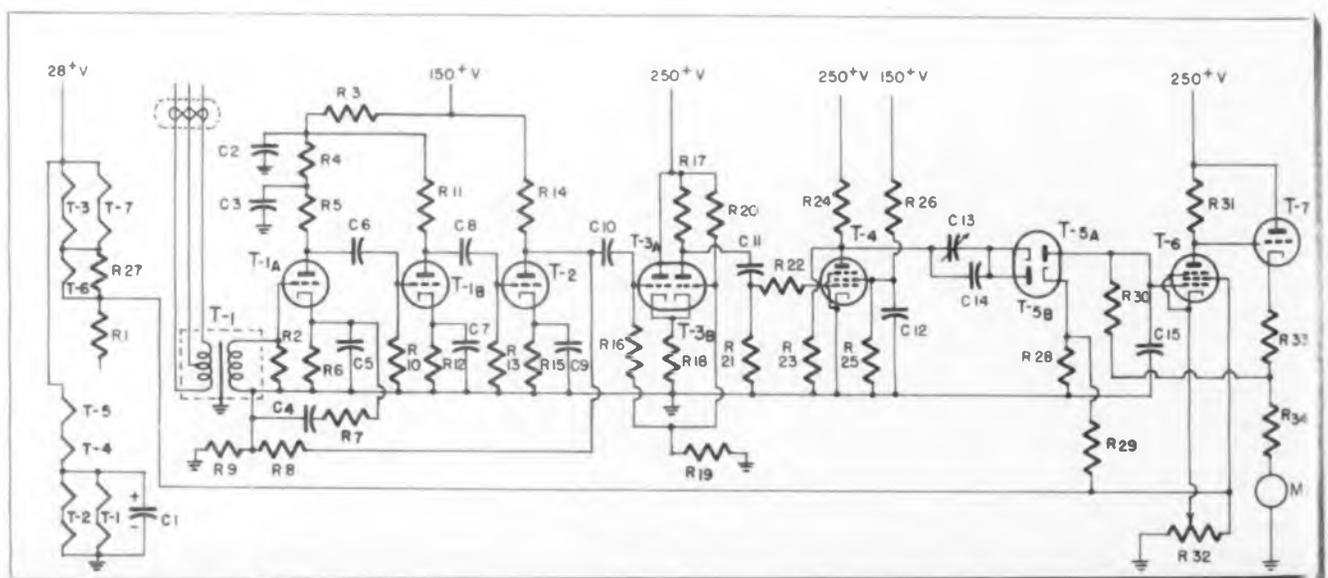
The output of the detector is fed to the input of the audio amplifier through a matching unit TR-1 (UTC 11). This input transformer is a low impedance to the grid. The output impedance of the detector is 600 ohms feeding the primary of this



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transformer. A step-up in voltage of 10 to 1 is obtained. The input transformer has a frequency response of 30 cps to 20 kc. From the upper limit, the frequency falls rap-

Fig. 2: Schematic diagram of complete circuit. R-C coupling with small time constant provides reduction of low frequency response



Design

ly. The transformer has additional shielding to prevent pickup of adjacent magnetic fields.

The input stage (Fig. 2, T-1A) is designed to work from a low level signal, where high gain, low distortion, low hum, and low noise is desired. All ground points are brought to a common point of the first stage of audio. The 12AY7 tube (T-1A) is heavily decoupled from the other audio stage by the network consisting of R_3 , C_2 , R_{11} , C_3 . Inverse voltage feedback is introduced in this stage from the third stage (T-2) through R_x and R_p . Degenerative current feedback is obtained through the same network and alters the bias of this tube. The network is a de path and no frequency discrimination nor phase shift of the signal is obtained. Voltage regeneration is obtained by the network of C_1 and R_1 and is introduced in the cathode of T-1A. This voltage regeneration takes effect at 30 kc and extends the high frequency peak 3 kc towards the 40 kc end. The cathode is peaked at approximately 42 kc.

The signal from the first stage is resistance-capacitance coupled to the second stage and from this stage similarly coupled to the third stage. The cathode of the 2nd and 3rd stages are peaked at the high end, identically as the first stage. Peaking the cathode of all three tubes extends the peak 2 kc towards the high frequency end. The low frequency response was reduced by making the RC time constant small in coupling each tube. The first and second stages of amplification utilizes a dual triode 12AY7 type since it is specially designed for low hum, noise, and microphonics.

Frequency Response

The frequency response could be extended by altering the last stage by sacrificing gain (Fig. 4). The time constant can be chosen so that the output voltage will rise by decreasing the voltage across RC which is part of the plate load dropping resistor. The high frequency end may be extended by choosing an input transformer with a more desirable frequency response. The audio amplifier range can be made to include lower frequencies by increasing the time constant of the grid coupling network between tubes.

The symmetrical clipper and lim-

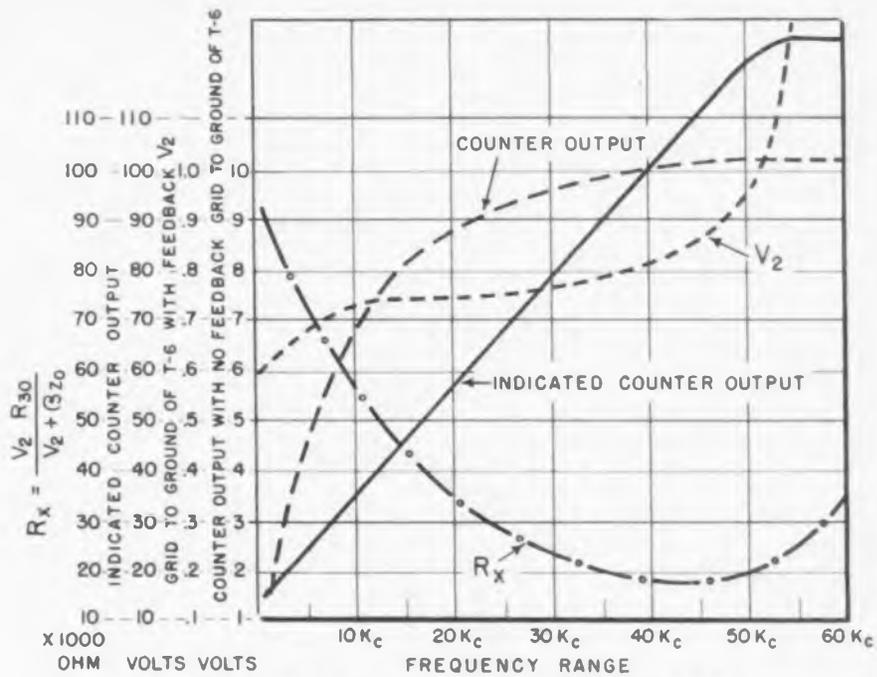


Fig. 5: Comparative outputs of counter over frequency range of 1-40 kc

iter stage consists of a cathode follower driving a direct coupled cathode driven amplifier. The initial operating conditions of the two tubes are established by returning the grids to positive voltage points of a voltage divider connected across the plate supply. The cathode resistor R_{14} is chosen high to approach a gain of unity. The voltage at the junction of R_{14} and R_{15} was chosen so that tube T-3A would cut off at 1.5 rms volts. At this applied voltage, the signal to the grid of T-3A would be of sufficient amplitude to drive the cathode follower into cutoff dur-

ing the negative half cycle. The positive cycle would make the cathode voltage follow the grid swing in that direction. This signal (clipped in the negative cycle and reproduced in the positive direction) is applied to the cathode driven amplifier T-3B. The positive half cycle (unclipped) drives the cathode into plate current cut-off.

The bias of the tube T-3B is set at the voltage difference at the junction of R_{14} and R_{15} and the voltage across R_{14} . Since T-3A and T-3B are similar and the bias voltages are (Continued on page 172)

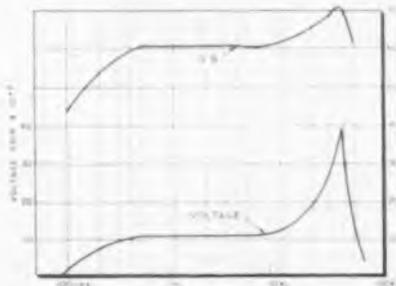


Fig. 3: Frequency response characteristics

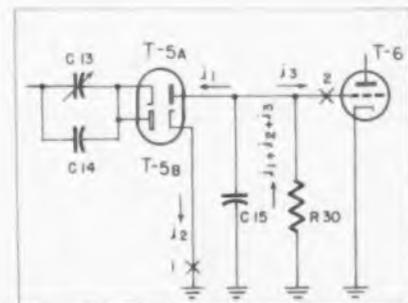


Fig. 4: Schematic diagram of counter stage

VALUES FOR CIRCUIT COMPONENTS IN FIG. 2

R_1 15	R_{11} 43K	R_{21} 330K	R_{31} 10Meg	C_1 1500	T, U.T.C. All
R_2 220K	R_{12} 2000	R_{22} 1Meg	R_{32} 500	C_2 1500	T-1 12AY7
R_3 33K	R_{13} 1200K	R_{23} 68K	R_{33} 2000	C_3 1500	T-2 12AX7
R_4 22K	R_{14} 56K	R_{24} 330K	R_{34} 3000	C_4 4700	T-3 12AX7
R_5 43K	R_{15} 3300	R_{25} 33K	C_5 50 μ f	C_{11} 0.01 μ f	T-4 6AU6
R_6 3300	R_{16} 470K	R_{26} 120K	C_6 0.047 μ f	C_{12} 0.22 μ f	T-5 6AL5
R_7 10,000	R_{17} 47K	R_{27} 50	C_7 0.1 μ f	C_{13} 4.5-25	T-6 6AU6
R_8 100K	R_{18} 47K	R_{28} 10	C_8 250	C_{14} 22	T-7 12BH7
R_9 1000	R_{19} 10K	R_{29} 200	C_9 1500	C_{15} 0.01 μ f	M, 30 ma
R_{10} 1200K	R_{20} 300K	R_{30} 1.2Meg	C_{10} 4700	in μ f or as shown	

Doubling Single Sideband Channel

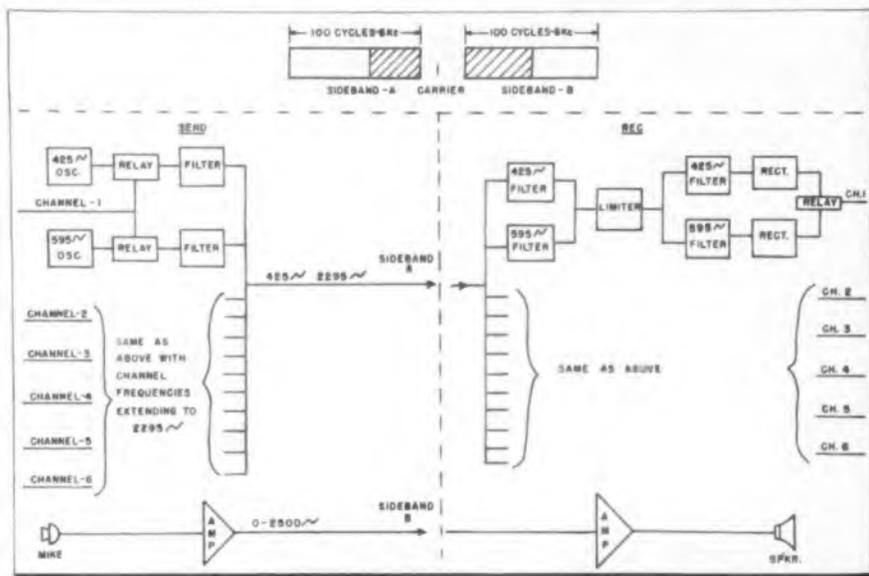


Fig. 1: Six-channel frequency division multiplex terminal equipment designed for the army by Bell Labs

Improvements in diversity reception and multiplexing equipment provide increased communications traffic handling facilities in existing circuits used by military

THE limited high frequency assignments allocated for military point-to-point circuits has forced the U.S. Army Signal Corps to employ a variety of multiplexing techniques in order to derive additional communications channels on long range radio teletypewriter (RTT) circuits.

Early in World War II, the Signal Corps adopted the single sideband radio teletypewriter system, using frequency division multiplex telegraph terminal equipment of the type manufactured by the Western Electric Co. and used by the American T. & T. Co. in their overseas radio circuits. This equipment is designed to provide two telephone channels, each being approximately 6 kc wide. In order to provide the necessary telegraph multiplexing equipment for this single sideband system, Bell Tel. Lab. designed a six-channel frequency division multiplex terminal.

A block diagram of this terminal is shown in Fig. 1. The 12 oscillators are arranged in pairs so that adjacent frequencies spaced 170 cps apart provide the marking (current condition on the teletypewriter loop) and spacing (no current condition on the teletypewriter loop) tones for any given channel.



By CLIFFORD D. MAY, JR.
Army Communication Service
Washington, D. C.

These tones are then keyed in accordance with the DC telegraph intelligence on the teletypewriter loop (Ch. 1), and, after passing through filters, are combined on a common bus for transmission over the single sideband system. The band occupied by the combined group of tones is 425-2295 cps. This group of tones is transmitted over the sideband of the SSB system which has been designated in Fig. 1 as Sideband A. Less than one half of the capability of sideband A is utilized for the transmission of these tones. After receiving the group of telegraph tones from the single sideband receiver, they are separated by filters into appropriate channels and then passed through limiters and rectifiers which restore the keyed

tones to their original dc telegraph form, less, of course, the degradation resulting from transmission. It can be seen from Fig. 1 that Sideband B is used to provide a 2500 cps telephone channel required to maintain continuity on the six telegraph channels.

The radio telegraph channels provided by the arrangement shown in Fig. 1 did not prove to be too reliable during unstable radio conditions. Loss of individual channel frequencies caused by selective fading would cause many errors on the telegraph circuits.

A system was then devised to operate channels in parallel so that the same intelligence could be transmitted simultaneously on two different channel frequencies. This tone diversity arrangement provided a tremendous increase in reliability, although it reduced the capacity from six to three teletypewriter channels.

Tone Diversity Equipment

In order to provide tone diversity with its increased reliability without the loss of three channels, the system shown in Fig. 2 was developed by Bell Telephone Laboratories. With this arrangement, the original six channel group of tones is shifted in frequency by the use of a 5270 cps oscillator and modulator, thus creating a group of frequency diversity tones. This shifted group of tones is then combined with the original set and transmitted over Sideband A. A band of 425-4845 cps is occupied by the combined group of tones. At the receiving end, the 425-4845 cps group is passed through filters which separate the normal tones from the diversity tones. The diversity tones are then demodulated to a 765-2635 cps group.

As can be seen, the diversity tones for any given channel are 340 cps higher in frequency than the normal tones. This frequency separation is required to permit the use of a common channel limiter. After being separated into normal and diversity groups, the tones are separated into channels by filters, then are passed through limiters, filters, and rectifiers in the same manner as Fig. 1. The tone diversity system shown in Fig. 2 provides reasonable protection from selective fading, while still retaining a six channel capability in the terminal equipment.

Capacity

As noted previously, a telephone channel was operated over the Sideband B of the single sideband system. The use of this channel was limited to that of an engineering order wire, as no requirement existed in the Department of the Army to operate radio telephone circuits over these single sideband facilities. In the latter part of World War II, requirements for facsimile transmissions over the world wide Signal Corps communication system increased. When the single sideband circuits were used for these transmissions, it meant the sacrifice of the engineering order wire. Once again, frequency division multiplexing techniques were employed to provide the facsimile channel without the loss of the engineering order wire.

As can be seen in Fig. 3, a modulator associated with a 5300 cps converting oscillator is employed to shift the order wire channel to a band above the facsimile channel. At the receiving end, a demodulator associated with a 5300 cps oscillator restores the order wire channel to its normal frequency band.

In Fig. 3 it can be seen that an air channel approximately 10 kc wide is required for the transmission of a single sideband signal carrying six telegraph channels, a facsimile channel and a voice order wire. Although it appears that the capability of the single sideband system is not fully used, no use can be made of the additional capacity due to the limitation of a 10 kc channel on the frequency assignments allocated for Army single sideband circuits. By the end of World War II, the single sideband circuits operated by the Department of the Army had apparently reached the saturation point as far as deriving any additional communications channels.

Increased Traffic

During the past few years the world situation has once again caused increased military communications requirements on overseas circuits. On some existing circuits the traffic requirements have overtaxed the capabilities of the system. An attempt to establish additional circuits to handle this increased traffic load would be extremely difficult due to the scarcity of frequencies in the high frequency spectrum. With this in mind, efforts were made to devise a system which

would permit additional traffic to be handled on existing circuits.

By again noting Fig. 3, it can be seen that 50% of the Sideband A is occupied by the diversity tones which carry the same intelligence as the normal tones. It was reasoned that if a space diversity system could be utilized, it would not be necessary to transmit the group of tones required for frequency diversity, thus releasing this band for transmission of additional channels. The problem was further complicated by the decision that it would be necessary to utilize the available existing type terminal equipment with a minimum of modification to accomplish the task.

First, the feasibility of space diversity with this type of terminal equipment was tested with favorable

results. Only the normal tones were transmitted over the single sideband system. At the receiving end an additional single sideband receiver was installed and operated with an antenna properly spaced from the normal antenna for effective diversity. A double conversion process was then used to shift the group received on the diversity receiver so that the tones would pass through the diversity filters. This arrangement proved to be superior to the tone diversity system formerly employed.

After having eliminated the requirement to transmit the frequency diversity tones on Sideband A, the tones from a second set of six channel terminal equipment could be transmitted in the band formerly occupied by the diversity tones. This

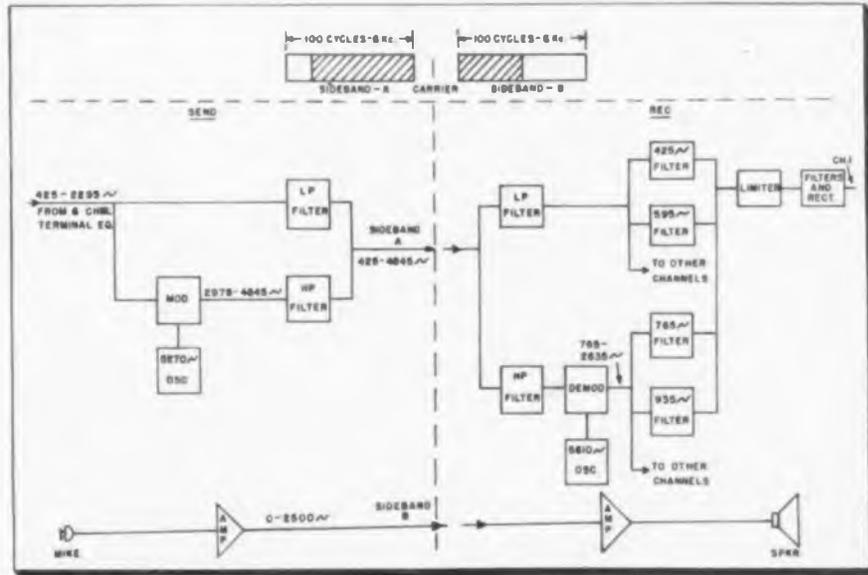
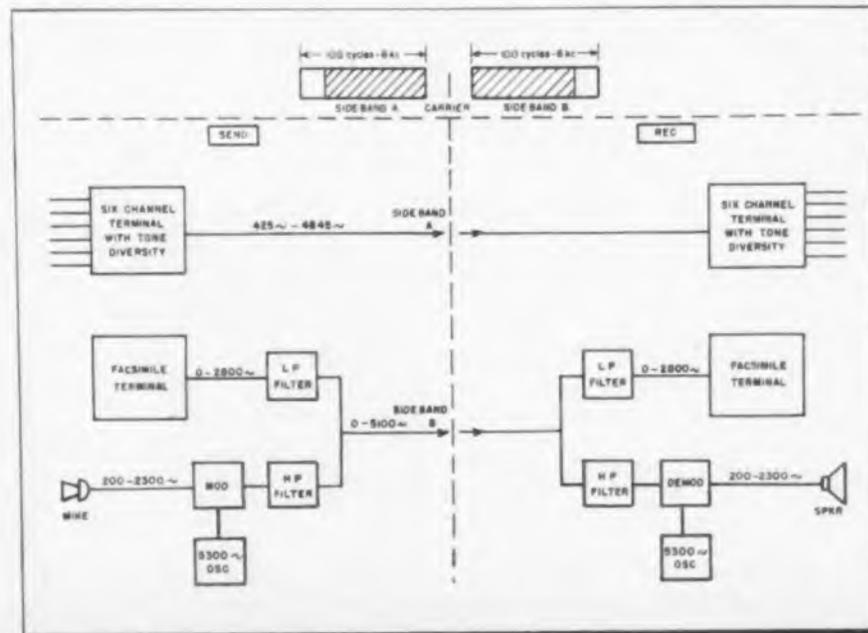


Fig. 2: Frequency diversity system provides improved reception without loss of channel

Fig. 3: Multiplexing equipment in use at the end of World War II carried additional facsimile channel



SINGLE SIDEBAND (Continued)

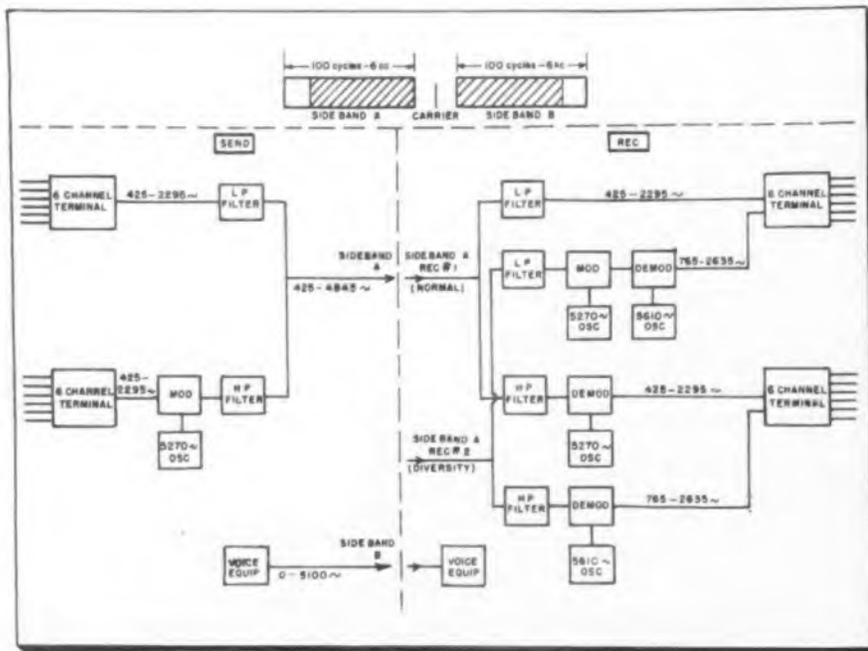


Fig. 4: Diagram of present system which provides 12 channels in band formerly occupied by six

is accomplished with minor modifications to the terminal equipment as shown in Fig. 4. The modulator and 5270 cps oscillator, formerly used to derive the diversity tones, is used to shift the tones from the second six channel terminal into the band formerly occupied by the diversity tones.

At the receiving end, the normal tones from one terminal are separated from the normal tones from the second terminal by filters. The tones from the second terminal are restored to their original frequency by a demodulator and 5270 cps oscillator. These two groups are then passed through the normal filters of the two six channel terminals. The two groups of tones from the diversity receiver are separated by filters and are then shifted in frequency to permit them to pass through the diversity filters of the two six channel terminals. Thus twelve telegraph channels are transmitted in the band formerly required for transmission of six telegraph channels.

Solar Battery Taps Sun's Energy

THE development of a solar battery—the first successful device to convert useful amounts of the sun's energy directly and efficiently into electricity—has been revealed by Bell Telephone Laboratories.

Scientists there, with a small light-absorbing apparatus made of strips of silicon (See Fig. 1), showed how the sun's rays could be used to power the transmission of voices over telephone wires. The solar battery also used energy from the sun to power a transistor radio transmitter carrying both speech and music. (Fig. 4)

Bell Labs reported that it was able to achieve a 6% efficiency in converting sunlight directly into electricity. This compares favorably with the efficiency of steam and gasoline engines, in contrast with other photoelectric devices which have never been rated higher than 1%.

With improved techniques the Bell Laboratories scientists said they expected to increase this efficiency substantially. They also explained that, since nothing is consumed or destroyed in the energy conversion process and there are no moving parts, the Bell solar battery should theoretically last indefinitely.

Developed by a three-member team of Bell Laboratories scientists—G. L. Pearson, C. S. Fuller and D. M. Chapin, physicist, chemist and electrical engineer (See Fig. 2),

respectively—the experimental solar battery uses strips of wafer-thin silicon about the size of common razor blades. These strips are extremely sensitive to light. They can be electrically linked together and can deliver power from the sun at the rate of 50 watts per square yard of surface. (See Fig. 3)

Key to the new techniques created at Bell Labs for producing these silicon devices is the controlled introduction of a foreign element into a microscopic layer near the surface of a thin slice of silicon. This process

has been developed in the laboratories by C. S. Fuller.

Treatment under gas at high temperatures permits the introduction of minute traces of impurities into the atomic structure at the surface of the silicon. Introduced at a precise rate and under carefully controlled conditions the impurities reach a depth of less than one ten-thousandths of an inch. This is essentially a "p-n junction," which is the heart of all these devices and which, when built into a germanium

(Continued on page 162)

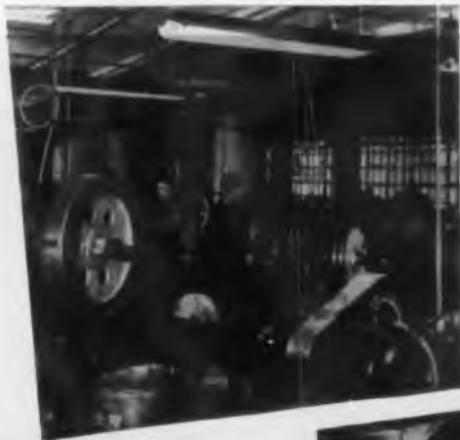
Fig. 1: (Left) Solar battery consists of thin strips of specially treated silicon in series. Fig. 2: (Right) Inventors of the solar battery: l to r G. L. Pearson, D. M. Chapin, and C. S. Fuller.



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WASHINGTON

News Letter

Latest Radio and Communications News Developments Summarized by TELE-TECH's Washington Bureau

FCC CHAIRMAN—Because of his outstanding record of service at the helm of the FCC and of his lifelong career with that Commission and its predecessor, Rosel H. Hyde who served as the chieftain of the FCC during the past year and is now Acting Chairman by unanimous vote of his fellow Commissioners is deemed certain to be designated by President Eisenhower for that post despite some political opposition from a few Republican members of Congress. Since 1928 Chairman Hyde has spent his entire career in the broadcasting-television-communications regulatory field, he has never played politics, and the short-viewed patronage-seeking politicians raised temporary roadblocks to the appointment during the month of April. But Chairman Hyde has the overwhelming endorsement of the industries under the regulatory jurisdiction of the FCC because of his complete integrity and conscientious, constructive direction of the Commission.

NO QUESTION—The record of FCC Chairman Hyde during his year at the helm of the Commission since the Eisenhower administration came into office has undoubtedly been the most outstanding of any FCC chieftain during the two decades of the FCC. Possessing the complete cooperation of his fellow Commissioners and the FCC staff, Mr. Hyde has guided the FCC through a tremendous task of reducing the huge load of new television station applications and the fast-growing mobile radio services with a staff even smaller than in past years. This has been accomplished because Chairman Hyde knows every facet of the Commission's activities since he came up through the ranks of the law department to the FCC's helm. There is no question but that the FCC is today functioning at the greatest efficiency in its history.

OUTSTANDING EXHIBIT—The solar battery, developed by Bell Telephone Laboratories, proved the exhibit of greatest interest, it was generally felt, at the annual (71st) meeting of the National Academy of Sciences in Washington. Several hundred scientists visited it even though it was available for display only in the evening hours because of Academy sessions at the one-day meeting. But the Academy executive offices reported to TELE-TECH that they had been inundated with telephone calls and letters of requests to view the exhibit after the announcement of the display was made.

UHF TELEVISION SENATE HEARINGS—The Senate committee hearings on the Army-McCarthy controversy, in which television has proved the most important medium of keeping the public informed, caused the postponement of the Senate Interstate Commerce Committee's inquiry into UHF television in late April. Senator Potter (R. Mich.), who heads the subcommittee making the inquiry, is a member of the body presiding over the

hearings on the Army-McCarthy affair so he had to postpone them, now slated for mid-May. A suggestion for the future of UHF television came to the FCC from a former Commission attorney, Joseph Brenner, who proposed subscription TV be established only for UHF video stations.

MOBILE RADIO EXPANSION—The mushrooming mobile radio services were demonstrated in the latest FCC compilation which was given to TELE-TECH. As of the beginning of April, the FCC recorded a total of 434,000 fixed, base and mobile transmitters in the industrial (power, petroleum and other major industry systems), land transportation (bus, taxicab, truck, etc.), and public safety (fire, police, etc.) radio services. There are 19,322 licensees for these transmitters. The FCC broke down the average number of transmitters for these licenses—27 transmitters for an industrial licensee, 20 for a land transportation licensee, and 21 for a public safety licensee. The FCC leadership feels that in the next few years this field of radio will expand tremendously with the total number of transmitters in operation to multiply at least five times.

LARGE ARRAY—A most extensive display of communications and electronic equipments and systems, many shown for the first time to a public group by the armed services, was exhibited by the Army, Navy and Air Force at the annual convention of the Armed Forces Communications Association in early May. Among the most featured exhibits was a 22-foot, 700-pound projectile used in the NIKE defense system. The Signal Corps had dioramas showing the use of television under combat conditions, the value of electronics in various control systems by Army and Navy Ordnance services, and transistorized equipment of the Air Force.

CUT INTERFERENCE—The FCC has promulgated proposed rules to reduce interference and disruptions to established radio services from a host of low power devices, especially carrier current communication systems operating above 425 kc and land mobile radio receivers operating above 25 megacycles. Operators of such devices, the FCC warned, will be required to take prompt remedial action and the rules are to become effective June 30, 1955. Set manufacturers were called upon to cooperate in a voluntary program of self-regulation to minimize the effect of interference from TV and FM receivers, both by the FCC and the Radio-Electronic Television Manufacturers Association.

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Washington, D. C.

ROLAND C. DAVIS
Washington Editor

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GAS SWITCHING TUBES

BAND	FREQUENCY	POWER LEVEL (KW Max)	TYPE	DESCRIPTION	TUBE DESIGNATION
L	900-1200	450	TR	Cell Type, One Disc, Fixed-Tuned	1B23
L	1075-1095	1	TR	Electrodeless Discharge, Fixed-Tuned	1B40
L	1215-1355	450	TR	Cell Type, Two Disc, Tunable	6322/BL
L	1215-1355	2000	TR	Tunable	BL-18
L	1220-1365	2000	TR	Band Pass, Fixed-Tuned	BL-37
L	1250-1350	4000	Pre TR	Band Pass, Fixed-Tuned	BL-96
L	1285	2000	ATR	Low Q, Fixed-Tuned, Tuned in 1/4 Height Guide	BL-38
L	1250-1350	550		Gas Switching Window	5939A
S	2600-3000	750	TR	Band Pass, Fixed-Tuned	1B58
S	2600-3000	750	TR	Band Pass, Fixed-Tuned	6117
S	2600-3000	750	TR	Dual 1B58	BL-87
S	2700-3300	350	TR	Cell Type, Two Disc, Fixed-Tuned	721B
S	2700-3400	450	TR	Ruggedized 1B27 without tuner knob	BL-31
S	2700-3400	450	TR	Cell Type, Two Disc, Tunable	1B27
S	2900-3200	750	TR	Band Pass, Fixed-Tuned	5853
S	3100-3500	750	TR	Band Pass, Fixed-Tuned	5927
S	3350-3750	750	TR	Band Pass, Fixed-Tuned	1B55
S	2700-2900	750	Pre TR	Band Pass, Fixed-Tuned	1B38
S	3400-3700	750	Pre TR	Band Pass, Fixed-Tuned	1B54
S	2750	750	ATR	Fixed-Tuned	1B44
S	2750	750	ATR	1944, 15μ Recovery Time	BL-41
S	2800	1000	ATR	Fixed-Tuned	6024 ATR387
S	2850	750	ATR	Fixed-Tuned	1B56
S	2850	750	ATR	1B56, 15μ Recovery Time	BL-40
S	2950	750	ATR	Fixed-Tuned	5792
S	3050	750	ATR	Fixed-Tuned	5793
S	3200	750	ATR	Fixed-Tuned	5921
S	3325	750	ATR	Fixed-Tuned	1B57
S	3400	750	ATR	Fixed-Tuned	5922
S	3479	750	ATR	Fixed-Tuned	1B53
S	3625	750	ATR	Fixed-Tuned	1B52
C	5200-5530	1000	TR	Band Pass, Fixed-Tuned	5925 TR
C	5220-5340	1000	TR	Dual TR	BL-86
C	5400-5900	700	TR	Dual 5865, Band Pass, Fixed-Tuned	BL-60
C	5400-5900	300	TR	Band Pass, Fixed-Tuned	5865 TR361
C	5450-5650	20	TR	Integral Cavity, Tunable	BL-46
C	5365	1000	ATR	Fixed-Tuned	6022 ATR332
C	5435	300	ATR	Fixed-Tuned	BL-52
C	5640	300	ATR	Fixed-Tuned	6081 ATR407
C	5640	300	ATR	Fixed-Tuned, Contact Mount	6455 BL-61
C	5370-5430	100		Complete Duplexer, Integral TR & ATR	BL-88
Xb	6000-7100	500	TR	Integral Cavity, Tunable	1B50
Xb	6425	500	ATR	Fixed-Tuned	1B51
X	8490-9560	1000	TR	5863 with Full Flanges and no Struts	BL-82
X	8490-9560	1000	TR	Band Pass, Special Flange, for use in RG 51/U Guide	5863
X	8490-9578	200	TR	Band Pass, Fixed-Tuned	1B63A
X	8490-9578	200	TR	Band Pass, Fixed-Tuned, Long Life	1B63B
X	8490-9578	200	TR	Band Pass (1B63A), Fixed-Tuned	6035
X	8490-9578	250	TR	1B63A, for RG 51/U Guide	6232 TR427
X	8490-9578	250	TR	Dual 1B63A	6334 BL-27
X	8490-9578	200	TR	6334 Tapped Flanges both sides	BL-78
X	8490-9578	200	TR	6334 Plus Separate Channel 1B63A	BL-81
X	8490-9578	250	TR	6334 with 1μ Recovery Time at 1 db point	BL-84
X	8500-9600	1000	TR	Dual TR for use in 51/U Guide	BL-71
X	8490-9600	100	TR	Integral Cavity, Tunable	1B24A
X	8490-9600	100	TR	Integral Cavity, Tunable	1B60
X	8490-9600	100	TR	No Reservoir, Tube Flanges do not protrude beyond UG39/U & UG40/U Flanges	6378 BL-52
X	8490-9600	30	TR	No Reservoir	BL-31
X	8541-9862	75	TR	Cell Type, Two Disc, Fixed-Tuned	724B
X	10000-10500	100	TR	Integral Cavity, Tunable	BL-51
X	8750	250	ATR	Fixed-Tuned	1B37
X	8750	250	ATR	(1B37A) Mounting Flange Flat within .003"	6034
X	8750	250	ATR	Miniature 1B37A, Contact Mount	6369
X	8750	250	ATR	1B37A with KA	BL-9
X	8800	250	ATR	BL-43 for RG 51/U Guide	BL-9
X	8800	250	ATR	5883 in 6393 Outline for use in 51/U Guide	BL-9
X	8800	250	ATR	Fixed-Tuned	588
X	9300	250	ATR	Fixed-Tuned	1B37
X	9300	250	ATR	(1B35A) Mounting Flange Flat within .003"	603
X	9300	250	ATR	1B35A with K.A.	6211
X	9300	250	ATR	Miniature 1B35A, Contact Mount	630
X	9300	250	ATR	Miniature 1B35A with Special Flange	639 3L-43
X	9300	250	ATR	6393 Tuned in Half Height Guide 900 x 200 I.D. Guide	639 3L-68
X	9375	500	ATR	5864 in 6393 Outline for use in 51/U Guide	639
X	9375	500	ATR	BL-43 for RG 51/U Guide	BL-9
X	9375	250	ATR	1B35A Outline, Fixed-Tuned	BL-9
X	9375	500	ATR	Fixed-Tuned, Tuned in RG 51/U Guide	588 ATR321
X	9300-9450	10		Cross Guide Duplexer, BL-29 Beacon Application	BL-9
X	9300-9450	100		Cross Guide Duplexer	BL-9

FREQUENCY	POWER LEVEL (KW Max)	TYPE	DESCRIPTION	TUBE DESIGNATION
15000 17000	100	TR	Dual TR	BL 35
15000 17000	100	TR	Single BL 35	BL 56
16300 16700	40	TR	Integral Cavity Tunable	BL 16
16500	40	ATR	Fixed-Tuned	BL 15
23350 24950	35	TR	Band Pass, Fixed-Tuned	6282 BL 11
23630 24580	100	TR	Integral Cavity Tunable	1B26
23630 24580	100	TR	1B26 No Reservoir	BL 67
24000	75	ATR	Fixed-Tuned	1B36

DUAL AND TRIPLE TR'S

BAND	FREQUENCY	POWER LEVEL (KW Max)	TYPE	DESCRIPTION	TUBE DESIGNATION
	2600-3000	750	TR	Dual	BL 87
	5220-5340	1000	TR	Dual	BL 86
	5400-5900	700	TR	Dual 5865	BL 60
	9490-9578	200	TR	Dual 1B63A	6334 BL 27
	8490-9578	200	TR	6334 Tapped Flanges Both Ends	BL 78
	8490-9578	250	TR	6334 Plus Separate Channel 1B63A	BL 81
	8500-9600	1000	TR	Large X Band Wave Guide	BL-71
	15000-17000	100	TR	Dual	BL 35

BOMAC SHUTTER TUBES

BAND	FREQUENCY	POWER LEVEL (KW Max)	TR TUBE TYPE	OPERATING VOLTAGE	OPERATION TYPE	TUBE DESIGNATION
C	5200-5530	1000	5925	28VDC	TR Shutter	BL-309
C	5395-5905	1000	5865	28VDC	TR Shutter	BL-311
X	8490-9560	200	BL 82	28VDC	TR Shutter	BL-310
X	8490-9578	200	1B63A	28VDC	TR with self-locking shutter	BL-314
X	8490-9578	200	6334 BL 27	28VDC	TR Shutter	BL-307
X	8490-9578	200	1B63A Special	28VDC	TR Shutter	BL-308
X	8490-9578	200	1B63A	28VDC	TR Shutter	BL-312
X	8490-9600	30	6378	28VDC	TR Shutter	BL-313

The above tubes available for 6 volt AC DC operation upon request.

SPECIAL SHUTTER TUBES

BAND	FREQUENCY	POWER LEVEL	TUBE TYPE	OPERATING VOLTAGE	OPERATION TYPE	TUBE DESIGNATION
K	24300-27000	Low Level	BL-11	28VDC-Ballast	Switch	BL-53
S	2700-3400	Low Level	1B27	28VDC-Ballast	Switch Operating Time < 1μ	BL-301

REFERENCE CAVITIES

BAND	FREQUENCY	DESCRIPTION	TUBE DESIGNATION
X	9249.7-9250.3	Temperature compensated ± 0.3 MC from 0°C to 100°C	1Q22
X	9279.7-9280.3	Temperature compensated ± 0.3 MC from 0°C to 100°C	1Q23

SILICON DIODES

BAND	FREQUENCY (MC)	CONVERSION LOSS (db MAX.)	NOISE RATIO (MAX.)	VSWR (MAX.)	RANGE IF IMPEDANCE	TUBE DESIGNATION	
L	900	Noise figure tests on this UHF Diode can be made in special mixers according to customer requirements.					1N87
	3060	6.5	2.0			1N21B	
	3060	6.5	2.0			1N21BR	
	3060	5.5	1.5			1N21C	
	3060	5.5	1.5			1N21CR	
	9375	6.5	2.7			1N23B	
	9375	6.5	2.7			1N23BM	
	9375	6.5	2.7			1N23BR	
	9375	6.5	2.7			1N23BMR	
	9375	6.0	2.0	1.50	325-475	1N23C	
	9375	6.0	2.0	1.50	325-475	1N23CR	
	9375	4.8	1.7	1.25	300-400	1N23D	
	9375	4.8	1.7	1.25	300-400	1N23DR	

See Bomac Test Spec. 1N23BM

GERMANIUM DIODES

TYPE	Continuous Reverse Working Voltage (Volts Max)	Reverse Voltage for Zero Dynamic Resistance (Volts Min)	Forward Current at -1 Volt (ma Min)	Average Anode Current (ma Max)	Recurrent Peak Anode Current (ma Max)	Instantaneous Surge Current (ma Max for 1 sec)	Reverse Currents					Rectification Efficiency (%) Min
							-3v	-5v	-10v	-50v	-100v	
1N61	25	30	4.0	50	150	500						50 at 24.5 MC
1N40	25	75	12.75	22.5	60	100						
1N35	50	75	7.5	22.5	60	100			40			
1N34	60	75	5.0	50	150	500			30	500		
1N38	60	75	5.0	50	150	500			50	800		
1N38A	60	75	5.0	40	125	400			50	850		35 at 100 MC

TYPE	Continuous Reverse Working Voltage (Volts Max)	Reverse Voltage for Zero Dynamic Resistance (Volts Min)	Forward Current at -1 Volt (ma Min)	Average Anode Current (ma Max)	Recurrent Peak Anode Current (ma Max)	Instantaneous Surge Current (ma Max for 1 sec)	Reverse Currents					Rectification Efficiency (%) Min
							-3v	-5v	-10v	-50v	-100v	
1N111***	60	70	5.0	25	150	500						
1N112***	60	70	5.0	25	150	500						
1N38	100	120	3.0	50	150	500	6		25	125		
1N38A	100	120	4.0	50	150	500	5		50	250		625 500

* The type 1N35 is a pair of matched germanium diodes assembled in brackets for easy mounting. The resistance of the units are matched to within 10% at 1.0 volt in the forward direction. Ratings shown are for each diode.

** The type 1N40 consists of four matched germanium diodes whose resistances are balanced within ± 2.5% in the forward direction at 1.5 volts. In addition, the forward resistances of each pair of crystals are matched within 3 ohms. The crystals are mounted on a standard octal base which is enclosed in compact metal radio tube shell. Ratings shown are for each diode.

*** Diodes 1N111 and 1N112 are specifically designed and tested for computer use. The reverse resistance of these diodes is measured at +55°C by sweeping Eb from 0 to -70 volts at 60 cps. Recovery time measurements are made at 0.5 and 3.5μ. To insure maximum stability all units are visually observed for any evidence of flutter, drift, hysteresis, zero or negative AC resistance in the reverse voltage region, or increasing AC resistance with increasing forward voltage.

PRESSURIZING WINDOWS

BAND	FREQUENCY	WAVE-GUIDE SIZE	TYPE MOUNTING	DESCRIPTION	WINDOW DESIGNATION
S	2800	48 U	Solder	Oval Kovar Finish	BL 124
S	2800	48 U	Solder	Oval Viewing Window, Optically Clear	BL 127
C	5350	49 U	Solder	Oval Kovar Finish	BL 141
Xb	5550	50 U	Solder	Oval Kovar Finish	BL 134
Xb	6500	50 U	Solder	Oval Kovar Finish	BL 123
X	8500-9600	52 U	Choke	Mica Window, Rectangular, 4 Mounting Holes, Plated	BL-132
X	8800	52 U	Choke	Round, Plated	BL-119
X	9080	52 U	Choke	Round, Plated	BL-112
X	9080	52 U	Choke	Round, Plated	BL-117
X	9100	52 U	Choke	Round, Plated 4 Mounting Holes	BL 122
X	9100	51 U	Choke	Round, Plated 4 Mounting Holes	BL 139
X	9245	52 U	Choke	Round, Plated 4 Mounting Holes	BL 106
X	9250-9405			Round, Plated, Tapered at Edge	BL 126
X	9310	52 U	Solder	Oval Kovar Finish (0.3 db loss)	BL 125
X	9310	51 U	Solder	Oval Kovar Finish	BL 107
X	9310	52 U	Solder	Oval Kovar Finish	BL 114
X	9375	51 U	Choke	Round, Plated, 4 Mounting Holes	BL 105
X	9500	52 U	Solder	BL 114 Centered 9500 ± 100 MCS	BL-136
Ku	16500	91 U	Solder	Oval Kovar Finish Pressure Viewing Window, 1" Iris, Deep Drawn Cup	BL-116

HYDROGEN THYRATRONS

PEAK ANODE VOLTAGE (KV Max)	PEAK ANODE CURRENT (Amps Max)	AVERAGE ANODE CURRENT (Ma Max)	PEAK TRIGGER VOLTAGE (VOLTS Min)	TYPE
1.0	20	50	175	1258
3.0	35	45	175	3C45
3.0	35	45	175	6130
8.0	35	45	175	High Altitude
3.0	35	45	175	5959 E41
3.0	35	45	175	3C45 in T 8 Bulb
3.0	35	45	175	J Pillar Stem
8.0	90	100	175	BL 253
8.0	90	100	175	J Pillar Stem
8.0	90	100	175	BL 255
8.0	90	100	175	4C35
8.0	90	100	175	BL 254
16.0	325	200	200	Low Jitter 4C35
16.0	325	200	200	175
16.0	325	200	200	Water Base
			200	5957 E37A
			200	5C22
			200	Low Jitter
				HT415

MAGNETRONS



Bomac has available tunable and fixed tuned magnetrons with high peak RF powers for pulsed service in the higher frequency bands.

Bomac
LABORATORIES, INC.

BEVERLY, MASSACHUSETTS

SEE OUR ADVERTISEMENT ON THE INSIDE BACK COVER

WAVELINE MICROWAVE NOISE SOURCE

model 2200.....2600 to 26,000 mcs.

level 16.0 db above KTB at 290°K
independent of operating temperature



The WAVELINE Model 2200 microwave noise source—gas noise tube in combination with its Waveguide mount and power unit—provides a random noise source of known output level in the frequency range from 2,600 to 26,000 MCS. Throughout this range it also functions as an untuned termination.

The noise power of 16.0 db ± 0.5 db above KTB at 290°K is available without warm-up time—and is *completely independent of operating temperature.*

The gas noise tube provides an average VSWR over the frequency range of the tube of approximately 1.07; maximum is approximately 1.13. Insertion loss of the unlighted tube is negligible; maximum inserted VSWR is 1.17. Full VSWR plots for active and inactive tube conditions are supplied with the unit.

MODEL 2200 POWER SUPPLY AND CABLES.....\$150.00

*To find out how the Model 2200 can work effectively for you,
contact WAVELINE today.*

©NTI

WAVELINE
INC. CALDWELL, NEW JERSEY

New Products

PULSE GENERATOR

The Model 2315A pulse generator consists of three semi-independent units and a power supply. Can provide variably delayed variable width pulse; two variable width pulses with no delay.



two variably delayed blocking oscillator pulses paralleled or cascaded from the sync pulse. Internal oscillator source generates positive and negative variable amplitude sync pulses from 10 cps to 100 kc. Direct reading in four decade related ranges. Sync pulse delayed 2 μ secs with respect to initial sync pulses. **Electro Pulse, Inc., 11811 Major St., Culver City, Calif.—TELE-TECH & ELECTRONIC INDUSTRIES.**

RC BRIDGE

The 110-125 v. ac, 50-60 cps BF-60 measures the important characteristics of most types of capacitors and resistors. Measures capacity between wire and shielding, transformer windings, cable wires, etc. Range 0.00001 μ f in four scales. Measures power factor from 0 to 50% and resistance from 100 to 5,000,000 ohms. Detects opens, shorts



and intermittents. Polarizing voltages 25, 150, 250, 350, and 450 dc. Dimensions: 5½ x 7 x 10 in. Weight 8 lbs. 4 ozs. **Cornell-Dubilier Electric Corp., 1006 Hamilton Blvd., S. Plainfield, N. J.—TELE-TECH & ELECTRONIC INDUSTRIES.**

More New Products Next Page

G U D E M A N

CAPACITORS

Paper-dielectric, plastic-film dielectric, metalized paper, dry electrolytic and ceramic capacitors are manufactured for commercial and military use. Among these types are high-temperature miniature paper-dielectric capacitors to meet the requirements of Specification MIL-C-25A. Other types manufactured are high-voltage paper-dielectric glass-cased capacitors, paper-dielectric capacitors in cardboard tubing, dry electrolytic capacitors in metallic or cardboard case, plastic-film dielectric capacitors in rectangular case and disc-type ceramic capacitors. Special capacitors are also designed and manufactured to meet individual requirements.

NOISE SUPPRESSION FILTERS

Low-pass, high-pass and band-pass filters are designed and manufactured to meet specifications for military and commercial applications. In addition, R-F Interference Filters for screen-booth application to handle high current with negligible voltage drop are manufactured.

PULSE TRANSFORMERS

Miniature pulse transformers are designed and manufactured to meet individual requirements for high-temperature applications. They are hermetically sealed in either metallic containers or encapsulated in epoxy resin. Metallic case types are furnished with either pig-tail or plug-in terminals. Encapsulated resin types are made with pig-tail terminals only.

DELAY LINES

Fixed, continuously variable, and decade delay lines are designed with either lumped or distributed parameters for operation over temperature ranges of -65°C to $+125^{\circ}\text{C}$. Gudeman delay lines possess low attenuation and low coefficient of thermal delay. Encased in fibre tubing, hermetically sealed containers, or encapsulated in epoxy resin.

THE *Gudeman* COMPANY

340 WEST HURON ST. • Chicago 10, Ill.

MFG. BRANCHES . . . CHELSEA, MICH. • SUNNYVALE, CAL. • LOS ANGELES, CAL.

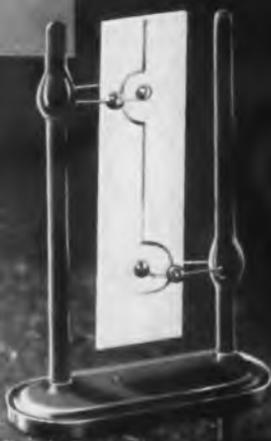
TOP PRODUCERS OF

low frequency

CRYSTALS

12 kc—1000 kc

*Reliability
Stability
Quality*



**REEVES-
HOFFMAN
CORPORATION**

CHERRY AND NORTH STREETS

CARLISLE, PENNSYLVANIA

a subsidiary of Claude Neon, Inc.



LICENSED UNDER PATENTS OF THE BELL SYSTEM

New Products

VOLTMETER

The J-1002 high voltage vacuum tube voltmeter measures audio, supersonic, and r-f voltages that exceed the range of most oscilloscopes and tube voltmeters. Two fully-shielded vacuum ca-



pacitor voltage dividers on the top of the unit place a loading capacity of only 2 μf across a double-ended circuit, and 4 μf across a single-ended circuit. Their input impedance has no appreciable resistive component. The dc unit has a 1 ma movement that protects against overload. Jennings Manufacturing Corp., 970 McLaughlin Ave., Box 1278, San Jose, Calif.—TELE-TECH & ELECTRONICS INDUSTRIES.

UNIT PULSER

Type 1217-A pulse generator, provides continuously adjustable pulse durations from 0.2 μsec to 60,000 μsec , making possible the generation of "flat tops" extending over a half-cycle of frequencies as low as 10 cps. A self-contained oscillator drives the output at pulse-repetition rates of 30 and 60 cps



for 1f tests and, in 1-2-5 sequence from 100 cps to 100 kc for other tests. Dimensions: 10 $\frac{5}{8}$ x 5 $\frac{3}{4}$ in. x 6 $\frac{1}{4}$ in. not including power-line connector cord. General Radio Co., 275 Massachusetts Ave., Cambridge 39, Mass.—TELE-TECH & ELECTRONIC INDUSTRIES.

More New Products Page 40

G.E.'s NEW IMPROVED SWEEP TUBES GIVE HIGHER QUALITY AT SAME PRICE!



You can SEE the improvement over prototypes (left)

G-E Design Service brings you . . . constantly . . . new, improved, more dependable receiving tubes at no increase in cost. The 6BQ6-GA and 25BQ6-GA are examples. These sweep tubes cut TV production costs by greatly reducing line rejects . . . also build customer acceptance for your sets, which will require fewer service call-backs.

Other improved G-E tubes are in development, and will be available soon. With the number of tubes per chassis to be at least doubled for Color, builders of sets justifiably are asking for tubes that will stand up—that won't slow TV production by poor performance or high failure rate, and won't make service costs prohibitive.

Better tubes at the same price is an extensive and continuing General Electric program. Get all the facts about these new, improved tubes for television from *Tube Department, General Electric Company, Menenctady 5, New York.*

OUTSTANDING PERFORMANCE! LONG LIFE!

"RUNNING HOT" shortened the life of many prototype 6BQ6-GT's and 25BQ6-GT's. G-E designers went to the heart of the problem, and gave the new tubes king-size bulbs that mean cooler operation under all normal conditions. Glass surface area is 89% increased!

Also—because of special mica design and new processing techniques—the 6BQ6-GA and 25BQ6-GA will handle higher pulse plate voltages than their predecessors. The peak rating now is 6,000 v instead of 5,500 v. Internal tube arcing has been reduced substantially.

A further improvement is use of a special high-melting-point solder for the plate cap-terminal. This prevents loosening of the terminal when tubes are removed for testing.

Basing layout is identical with prototypes. The new tubes are fully interchangeable with the old.

GENERAL ELECTRIC

162-1A3

VECTRON
PRECISION LINEAR
WIRE-WOUND
POTENTIOMETERS



GENERAL SPECIFICATIONS

Over-all Resistance: 50 ohms to 50,000 ohms
Resistance Tolerance: $\pm 5\%$ standard ($\pm 2\%$ or $\pm 1\%$ if specified)
Independent Linearity: $\pm 1\%$ standard ($\pm 0.5\%$ or $\pm 0.25\%$ if specified)
Temperature Coefficient of Resistance Wire: 0.00002 parts per $^{\circ}\text{C}$, above 250 ohms
 0.0007 parts per $^{\circ}\text{C}$, 250 ohms or less
Power Dissipation: Nominal dissipation rating. 2 watts at 25°C . Rated 5 watts to 5°C under specific conditions
Electrical Rotation: $320^{\circ} \pm 5^{\circ}$ standard to $357 \pm 1^{\circ}$ if specified
Resolution: Optimum—based on resistance
Terminal Assembly: Treated, electrical grade, laminated phenolic with gold-plated terminals.

Always to Your Specifications

From Vectron's three basic Potentiometer styles, $7/8$ " diameter, $1\ 1/16$ " diameter and 2" diameter, units can be made to suit your individual requirements. Multiple ganged units with individual phasing, special stops and even specially tapped units supplied to order, individually or in quantity. Additional new sizes and new types are being prepared as this publication goes to press. Standard shafts supplied in any length or detail; special bushings and shaft locks to order.

High Linearity — Superior Performance
 Vectron Potentiometers provide superior performance. Uniformity and linearity far beyond normal specification requirements are the result of long experience. Close tolerances and special processing insure minimum run-out and bearing angularity.



FOR FULL INFORMATION
 Write for Vectron's Potentiometer Bulletin

Precision Components Section

VECTRON, inc.
 Electronic and Electro-Mechanical Equipment
 498 MAIN STREET, WALTHAM 54, MASS.

VECTRON FOR DESIGN AND MANUFACTURE OF:
 Relay and Drive Systems Precision Mechanical Devices
 Relay Station and Buses Computers and Calculators
 Servo and Feedback Systems Special Gears and Assemblies
 Analytic Instruments Switches and Control Motors

CUES for BROADCASTERS

(Continued from page 121)

or noise level of the recorder.

To make a tape recording the "remote input" connected to the bridging input of the recorder is placed in the cue position. Anything fed to the monitor amplifier of the console is recorded. Once the settings of the monitor amplifier gain, mike gain for each member of the staff, and the level of the recorder, have been determined, making a good tape recording merely requires throwing the remote switch to the "cue" position.

Telescope For Microwave Xmitters

ROBERT M. CROTINGER, Remote Engr. Superv., WHIO-TV, Dayton, Ohio

WE have found it very helpful to install a rifle type hunting telescope on our remote microwave transmitter. Once aligned and oriented from a remote point, the transmitter can be brought to bear upon the receiver with such accuracy that orientation of the microwave by telephone is not necessary.

Since this equipment is subjected to occasional bumps, we formed a shield to protect the scope, which is shown. Once the telescope is mounted on the transmitter housing, the microwave link is lined up in the usual manner at a distance of five miles or so. The transmitter is then removed from the housing in order to adjust the position of the telescope so that the receiver 'dish' appears in the center of the tele-

scope field of view. The cross-hairs are then adjusted to bear directly on the receiver dish and the transmitter replaced in the housing. Any readjustment required later can be made with the cross-hairs. The shield protects the telescope from the usual jars and shocks incurred in remote work.

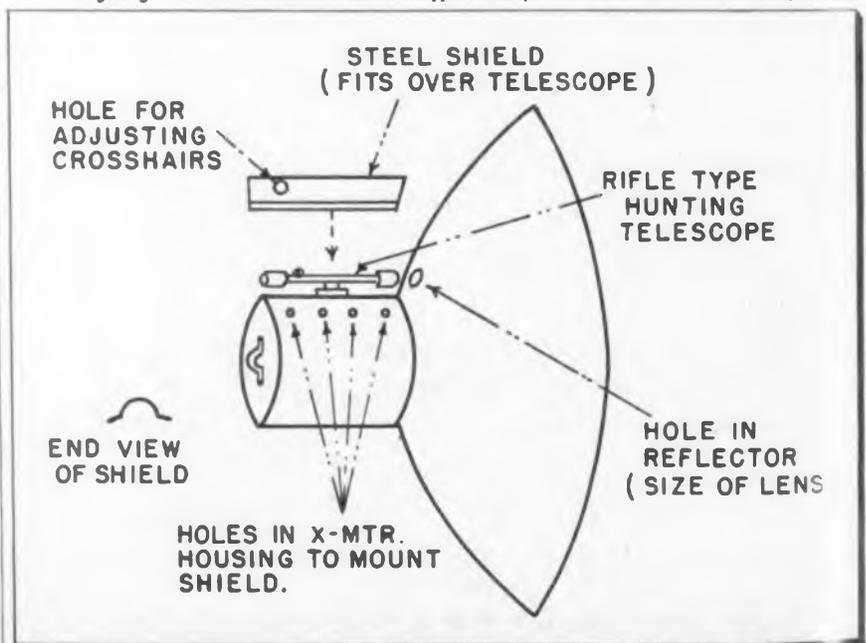
Extra Remote Amplifiers

STAFFORD E. DAVIS, Chief Engineer, KGVU, Greenville, Texas

IT is often the case in broadcast stations that a need arises for an extra remote amplifier—when all are in use. A very good remote amplifier is usually on hand at most of these stations, but is overlooked because it goes by another name. Almost all stations use tape recorders. Any tape recorder will make an excellent remote amplifier by using a 6 ohm to 500 ohm transformer, plugging the 6 ohm side into the extra speaker jack, and connecting the 500 ohm side to the telephone line.

Another good remote amplifier is the public address equipment used in most churches. I have made it a practice of using these amplifiers where possible, thus giving us extra remote amplifiers to be used at other points. Most public address amplifiers used in churches have multi-match output transformers so that all one has to do is connect the phone line to the 500 ohm position. If a 500 ohm tap is not available, a matching transformer can again be used.

"Sighting" microwave reflector with rifle-type telescope results in maximum accuracy



WHAT'S *new* IN TAPE RECORDING

- *immune to temperature*
- *impervious to moisture*
- *practically unbreakable*

audiotape

on **Mylar*** polyester film

Here's a professional magnetic sound recording tape that offers a new high in *permanence* and *durability*. It can be used and stored under the most extreme conditions of temperature and humidity without any ill effects. For all practical purposes, it is virtually *unbreakable*. Now available on 1, 1½ and 2 mil Mylar*, in standard sizes from 600 to 2,500 ft. Write for Bulletin No. 201.

type **EP** *audiotape*

* *EXTRA PRECISION magnetic recording tape for telemetering, electronic computers and other specialized applications*

The new EP Audiotape provides the *extra precision* that is so important to *dependable* magnetic data recording and reproduction. It is especially produced to meet the most exacting requirements for uniformity and freedom from microscopic imperfections. Available in ¼" to 2" widths, 1,225 to 5,000 feet. Write for Bulletin No. 207.

color

the new dimension in audiotape recording

Audiotape, now available on green, blue or brown plastic base — and Audiotape reels in red, yellow, green, blue and clear plastic — provide *instant identification* that can simplify your cueing, filing, recording and playback problems. Write for Bulletin No. 209.

AUDIO DEVICES, Inc.

Dept. A4, 444 Madison Ave., New York 22, N. Y.

Export Dept., 13 East 40th St., New York 16, N.Y., Cables "ARLAB"



??? NEED TUBES FOR SPECIAL APPLICATIONS ?

Victoreen is prepared to assist you by engineering and manufacturing tubes for your particular application.

Expanded production facilities plus a competent tube engineering staff permit us to accept orders for new tube types now.

ABOUT VICTOREEN

Oldest Manufacturer of radiation measuring instruments. Over ten years experience in development and engineering of electronic tubes, specializing in subminiature types.



SEND SPECIFICATIONS TODAY

Use this check list (✓) as a guide in submitting your inquiry. This will assist our tube engineers in studying your application.

APPLICATION: Amplifier _____ Control _____ Counter _____ Doubler _____ Electrometer _____ Modulator _____ Oscillator _____ Rectifier _____ Current Regulator _____ Voltage Regulator _____ Voltage Reference _____ Other _____ CLASSIFICATION: Diode _____ Triode _____ Tetraode _____ Pentode _____ Special Purpose _____ Other _____ ENVELOPE: Glass _____ Ceramic _____ Metal _____ T-3 _____ T-5½ _____ Other _____ ALTITUDE REQUIREMENTS: _____	MECHANICAL REQUIREMENTS: Shock _____ Vibration _____ AMBIENT TEMPERATURE: _____ CONDITIONS OF USAGE: Filament Voltage _____ Filament Current _____ Grid Voltage _____ Grid Current _____ Screen Current _____ Suppressor Voltage _____ Suppressor Current _____ Maximum Frequency _____ Plate Voltage _____ Plate Current _____ Screen Voltage _____ Amplification Factor _____ Plate Dissipation _____ Power Output _____ SPECIFICATIONS: Commercial _____ Mil (JAN) _____ Army _____ Navy _____ Air Force _____ A. E. C. _____
--	--

Victoreen pioneered the manufacture of subminiature low-drain tubes including electrometers, amplifiers, voltage regulators, rectifiers and switches. Each year many other special purpose tubes have been engineered for specialized applications. Our record of successful tube development is our best recommendation to you.

QUANTITIES REQUIRED:

Initially _____ Annually _____ Monthly _____

ANY OTHER REQUIREMENTS:

BETTER COMPONENTS MAKE BETTER INSTRUMENTS



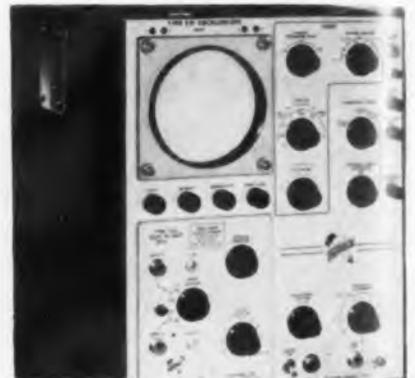
The Victoreen Instrument Co.

3800 PERKINS AVE. • CLEVELAND 14, OHIO

New Products

OSCILLOSCOPE

Type 531 cathode ray oscilloscope designed to use preamplifiers. Four calibrated plug-in units are available providing vertical amplifier characteristics for wide-band applications (d.c. to



1 mc), high dc sensitivity applications (1 mv/cm) and dual trace applications. Wide range sweep circuit, 0.1 μ sec to 12 sec/cm continuously variable with 24 calibrated steps. Calibrated sweep times to 0.02 μ sec/cm. DC-coupled unblanking, 10 kv accelerating potential on CRT. Weight 61½ lbs. Tektronix, Inc., P.O. Box 831, Portland 7, Ore.—TELE-TECH & ELECTRONIC INDUSTRIES.

VT VOLTMETER

The Model 400D, measures voltages from 0.1 mv to 300 v. and is accurate within 2% up to 1 mc. Input impedance is 10 megohms. Circuits under test are not loaded. Unit has a new amplifier circuit that provides approximately 56 db of feedback in mid-range for freedom from calibration changes. Ranges selected on front panel in 10 db steps. Decibel-calibrated 4 in. meter



enables readings between -72 db and +52 dbm. Measures hum and noise directly. Determines power circuit and broadcast hf voltages. Hewlett-Packard Co., 395 Page Mill Road, Palo Alto, Calif.—TELE-TECH & ELECTRONIC INDUSTRIES.

More New Products Next Page

Voltage Regulation

NOT FOR DOLLARS

...BUT FOR CENTS



Make no mistake! In quantity lots the cost of each Victoreen voltage regulator tube is in cents — not dollars. If you are acquainted with our quantity discount price schedule you already know this. These accurate, dependable and safe tubes precisely regulate voltage for many applications over a range from 57 volts to 27,000 volts. Typical tubes are shown.

7000 to 27,000 Volt Regulators

Metal tube —

Maximum current: 1000 μ a

Regulation: 1.5% per 250 μ a



700 to 5000 Volt Regulators

Glass envelope, 7 Pin Base

Maximum current: 250 μ a

Regulation: 1.5% per 50 μ a



57 Volt Glow Tubes

Glass envelope — flexible leads

Maximum current: 800 μ a

Regulation: (200-800 μ a) is 3%



400 to 2500 Volt Regulators

Subminiature envelope — wire leads

Maximum current: 100 μ a

Regulation: 1.5% per 50 μ a



645 to 705 volt variable Voltage Regulators

Maximum current: 55 μ a

Regulation (5-55 μ a) is 3%



For detailed data write for catalog 3016A.

Our engineers will gladly aid in application of these products.

The Victoreen Instrument Co.

COMPONENTS DIVISION: 3800 PERKINS AVE. • CLEVELAND 14, OHIO

Now for the first time
 ...a Magnecorder
under \$300



the new M30
 professional
 tape recorder

The M30 Magnecorder is the first tape recorder to offer you professional quality at so low a price. The accepted leader in tape recording the world around, Magnecorders are used by more engineers than all other professional tape recorders combined.

complete in one case

The M30 Magnecorder is mounted in a handy portable case, with high fidelity output for external amplifier. Model M33, slightly higher, includes power output stage and integral PM speaker. Your dealer is listed under "Recorders" in the classified telephone directory.

magnecord, inc.

225 WEST OHIO STREET, DEPT. TT6
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NEW
 LOWER PRICES
 ON STANDARD
 MAGNECORDER

See your dealer for
 new reduced prices
 on PT6 and PT63
 gear.

New Products

POWER DIODES

Seven junction type power diodes announced: Nos. 1N191, 1N192, and 1N193 are the types in the foreground of the illustration. Nos. 1N151, 1N152, and 1N153 are single diodes shown



mounted on a cooling fin. Two diodes, No. 1N158—indicated by arrows—are connected in series on a cooling fin. Type 1N153, for example, with a peak inverse voltage rating of 300 v is capable of delivering 0.5 amps into a restrictive load with a voltage drop of only 0.7 v. **Selectron & Germanium Div., Radio Receptor Co., Inc., 251 West 19th St., New York 11, N.Y.—TELE-TECH & ELECTRONIC INDUSTRIES.**

WAVEGUIDE SWITCH

Model ASWI-X01 makes available a compact waveguide switch to the microwave field that is $\frac{3}{4}$ in. by $1\frac{1}{2}$ in. guide size with the following features: VSWR, 1.05 to 1 maximum; crosstalk, 50 db minimum; actuator, 110 v; 60 cps; actuation time, 0.5 seconds maximum.



VSWR during switching—1.2 to 1.5; power handling ability, 0.35 megawatt cw. Additional information on request. **Electronics Div., Thompson Products Inc., 2196 Clarkwood Road, Cleveland 3, Ohio—TELE-TECH & ELECTRONIC INDUSTRIES.**

New Products

OUTPUT TRANSFORMER

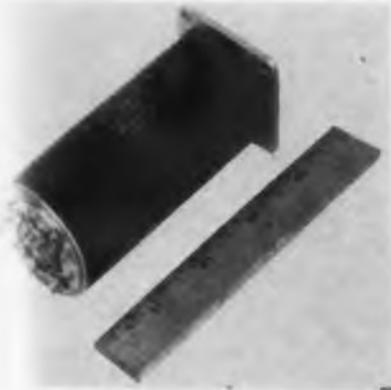
The high fidelity output transformer, EO-13, is especially designed for ultra-linear operation. Its drawn steel case measures only $3\frac{1}{16}$ x $3\frac{7}{16}$ x $4\frac{11}{16}$ in. and has "sealed-in-steel" construction.



The unit has pin-type terminals, and is designed with studs for flush chassis mounting. Complete details, including performance curves, are given in Chicago Bulletin No. 33 available at company distributors or at Chicago Div., Chicago Standard Transformer Corp., 3501 Addison St., Chicago 18, Ill.—TELE-TECH & ELECTRONIC INDUSTRIES.

VOLTAGE DIVIDER

The 85174 voltage divider, available in any number of voltages to 23, and spacing, and a maximum resistance of 30,000 ohms, has a single length of resistance wire. Its temperature coefficient can be as low as ± 0.00002 , or matched to any system wire. Use of potting compounds make the unit impervious to fungus,

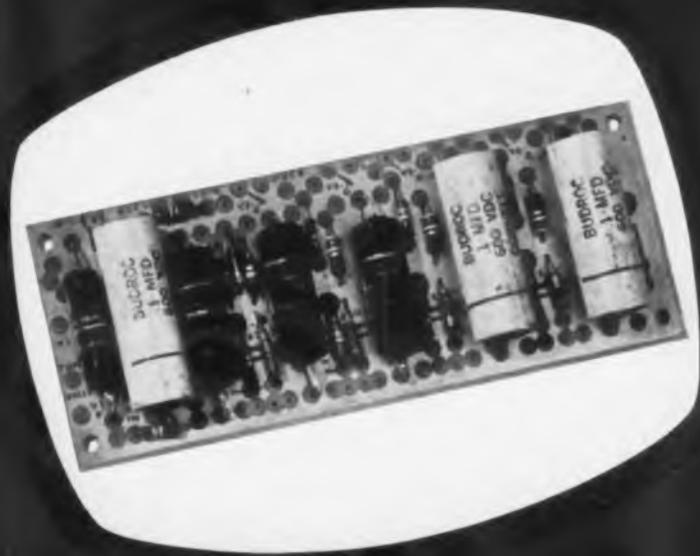


variation, acceleration and shock, with complete atmospheric protection. The divider is $4\frac{11}{32}$ in. long and $1\frac{3}{4}$ in. in diameter. Mounting flange is $1\frac{13}{16}$ square. Contact: Gianni & Co., Inc., 39 Main St., P.O. Box 100, Orange, N.J.—TELE-TECH & ELECTRONIC INDUSTRIES.

More New Products Next Page

ELECTRALAB

for electronic applications



Electronic Equipment Manufacturers:

Let Electralab quote on *your* next requirement for:

- PLATED CIRCUITS ✓
- ETCHED CIRCUITS ✓
- DIE STAMPED CIRCUITS ✓

With Electralab's experience in printed circuit design and their complete production facilities, you can now obtain quality printed circuits at low cost — with deliveries to meet your schedules.

Take advantage of Electralab's engineering facilities before you design or redesign your products. Send for our new Engineering Brochure.

Don't forget . . .

Electralab makes printed circuits for MDE (formerly Project TINKERTOY) too!

ELECTRALAB

INCORPORATED



The
GOLD RUSH
DAYS
 are over!

Stonized Spiral
 Phenolic Tubes

This 18 Kt. market we've been having seems to be settling down to a good solid 14 Kt. market.

Simply means that everybody is going to be buying everything more carefully . . . more critically . . . with good reason.

Stone's custom-made yet mass-produced spiral paper tubes and *Stonized* phenolic impregnated tubes are noted for low cost adaptability. Tubes of kraft, fish paper, plastic films, phenolic impregnated can be punched, notched, slotted, fabricated and imprinted.

All at much less cost than insulating tubing of any other material.

We can, however, promise 18 Kt. delivery and service. Phone or write soon.

Stone PAPER TUBE CO.

AFFILIATED WITH

STONIZED PRODUCTS CO. INC.

900-922 Franklin Street, N.E., Washington 17, D. C.

New Products

POTENTIOMETER

Type 751 linear function potentiometer is only $\frac{7}{8}$ in. in diameter. Single cup units are 0.693 in. long from service flange front to case end. Linearity is rated at $\pm 0.5\%$ standard with $\pm 0.25\%$ furnished on special order. Features a 2.0 w. rating in a single gang unit, 1.0 w. in dual gang units, and 1 w. cup section with 0.25 oz. in./cup section torque.



Standard resistance range is 400 to 20,000 ohms. Ganging does not increase the overall gang diameter. Fairchild Camera & Instrument Corp., Potentiometer Div., 225 Park Ave., Hicksville, L.I., N.Y.—TELE-TECH & ELECTRONIC INDUSTRIES.

POWER SUPPLY

Type 3-132 power supply, for the excitation of multiple strain gauges and other resistance type transducers, can be used as a secondary reference voltage source. Continuously variable over



the 0 to 15 v range, output voltage can be varied with a 10-turn voltage-setting control. Output impedance is less than 0.1 ohm; output drift less than 5 mv per hr. Ripple less than 1 mv peak-to-peak. Positive or negative output terminal can be grounded. Consolidated Engineering Corp. 300 N. Sierra Madre Villa, Pasadena 8, Calif.—TELE-TECH & ELECTRONIC INDUSTRIES.

More New Products Next Page

inside story
of the
BLUE-POINT[®]



how astron builds
CAPACITORS
with "real quality"

Finest all-purpose molded plastic paper tubulars ever made — impervious, attractive shell and seal give positive moisture, heat protection in hot and humid climates . . . completely revolutionary BLUE-POINT seal for dependability, vibration resistance, firmly secured lead-wires . . . continuous operation at 85°C without derating . . . new solid thermosetting impregnant insures high capacitance stability, low power factor and high insulation resistance over entire -40°C to +85°C temperature range . . . seal and shell are unaffected by hot soldering irons . . . New ASTRON concepts of capacitor design produce the individually tested BLUE-POINT.

Increase your design versatility.
Write today for bulletin AB-20B for free technical information.

ASTRON
CORPORATION

Export Division: Rocke International Corp.
13 E. 40th St., N. Y. C.
In Canada: Charles W. Pointon
6 Alcina Ave., Toronto 10.



255 GRANT AVENUE, EAST NEWARK, N. J.

phastron panel meters

SPECIFICATION and CUSTOM
with Interchangeable Round or Square Bezels



1 1/2", 2 1/2", 3 1/2" and 4 1/2" sizes

tion of features and choice of round or square bezels.

- CUSTOM Panel Instruments (Built to JAN-I-6 & MIL-M-6A)
- RUGGEDIZED Panel Instruments
- SEALED Panel Instruments
- RUGGEDIZED SEALED Panel Instruments (MIL-10304)

For applications not subject to extreme shock, the Phastron CUSTOM Meter incorporates the same basic movement as the famous Phastron RUGGEDIZED Instruments with the exception of the shock mounts.

These Superior Metal-Cased CUSTOM Instruments are competitive in price with bakelite panel instruments. Available in AC and DC ranges with front zero adjustments, optional mirror scales, and unlimited combination of features and choice of round or square bezels.

phastron

HERMETICALLY SEALED

1/4 to 2 watts HERMETICALLY SEALED in glass (The CA-H pictured here) and in a Specification Series (the CA-4R) which exceeds MIL-R-10509 spec. for fixed, accurate resistors.

Available also with humidity impervious paint, Kel-F or Vinyl casings. These conservatively rated resistors provide the utmost in stability, precision and dependability for high frequency applications, closely matched units and extremes of temperature.

100% Inspection on each "CARB-OHM" assures conformance to specifications and ratings.

"CARB-OHMS" deposited carbon resistors



phastron

HERMETICALLY SEALED



BEST BY ANY COMPARISON

SENSITIVE MINIATURE RELAYS perfectly counter-balanced armature

Contact arrangements up to and including D.P. D.T. 3 amp at 28 volts DC or 100 milliamperes at 150 volts DC resistive load.

This miniature precisely adjusted and HERMETICALLY SEALED relay is designed to operate thru wide ranges of environment including the shock requirements of MIL-E-5400 and MIL-5757B, Amendment 1. It will withstand 50 G's acceleration without malfunctioning and its use is recommended wherever extremes of shock, temperature and severe vibration are encountered.

Required coil power as low as 20 milliwatts.

Coil resistance up to 15,000 ohms.

Weight, Max. 3.0 oz.

ENVIRONMENT FREE
ELECTRICAL EQUIPMENT by



PHASTRON COMPANY • 151 PASADENA AVE. • SOUTH PASADENA, CALIF.

New Products

ANALOG COMPUTER

The Model 30 analog computer contains ten stable, high-gain amplifiers, a fully regulated power supply, and provision for applying 5 independent initial condition voltages. Capable of solving most constant-coefficient differential equations of linear and non-linear types. Useful where ability to obtain rapid answers are most needed. Plug-in



printed circuit problem boards are a special feature, and a schematic layout of the amplifier and initial condition connections enable rapid problem setup. Donner Scientific Co., 2829 Seventh St., Berkeley 10, Calif.—TELE-TECH & ELECTRONIC INDUSTRIES.

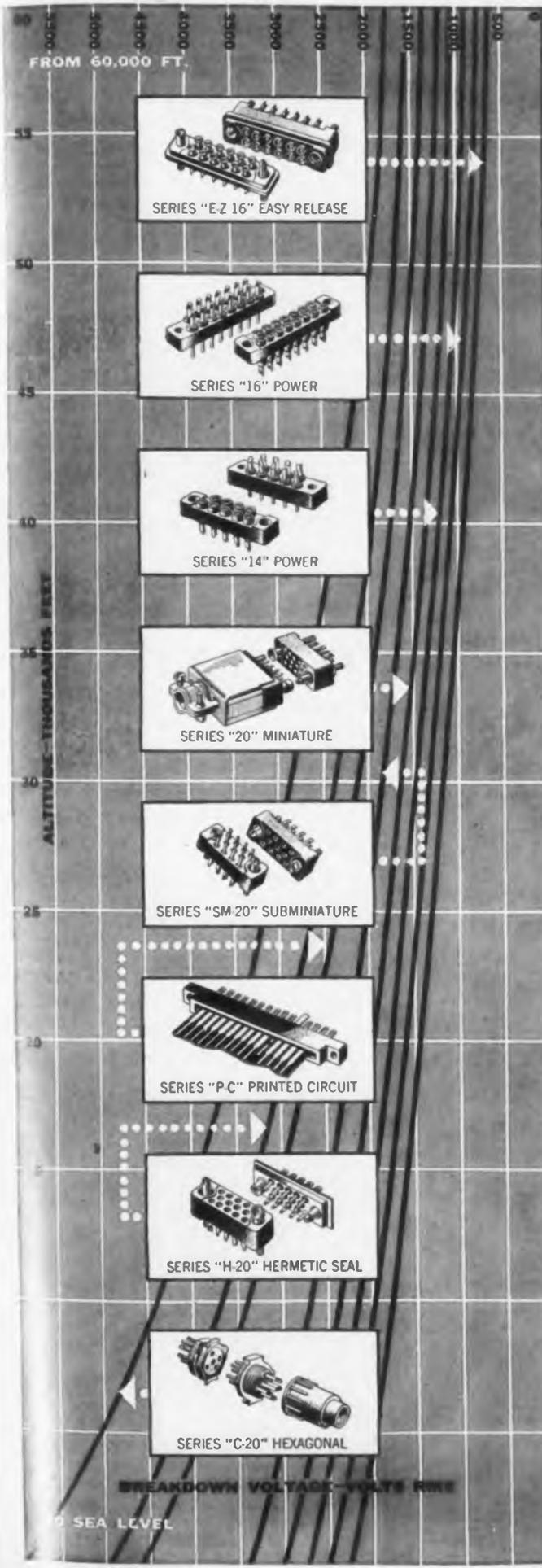
MODULAR MOUNTING

A typical "Mycalex" modular mounting is used in a two-stage hi-fi preamplifier. The base plate is complete with molded-in tube socket and the printed circuit is fired. The top plate is com-



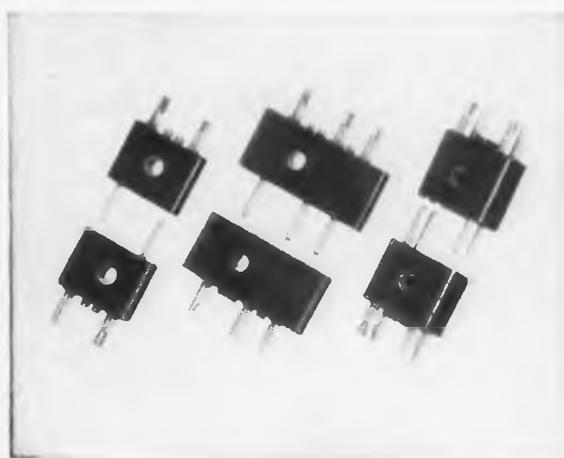
plete with tube access hole and shield. Standard components are mounted in the base and top assembly. Connections are dip-soldered. Terminals permit plugging into a printed circuit plate to integrate other modular mounting units. Mountings supplied in "Mycalex" glass-bonded mica withstand up to 300° F. Mycalex Corp. of America, Clifton Blvd., Clifton, N.J.—TELE-TECH & ELECTRONIC INDUSTRIES.

More New Products Next Page



new...
precision
**Continental
Connectors***

simplify your connector problems



ACTUAL SIZE

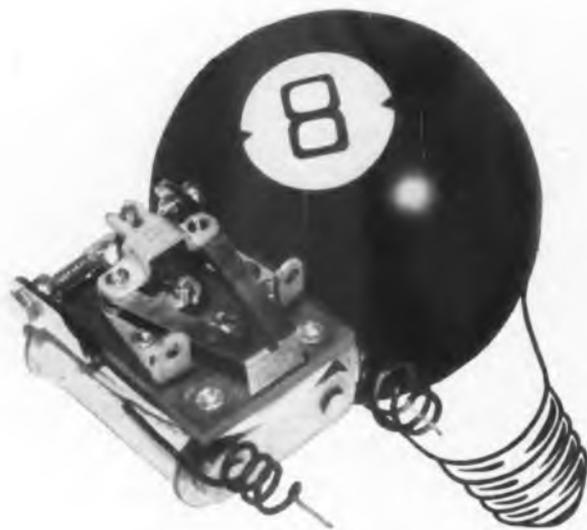
Rectangular Series "G-20"
Subminiature Connectors

These unique reverse pin and socket connectors are miniaturized for use in small area applications. The molding is provided with a hole for convenient, space-saving side mounting. Precision machined sockets and pin contacts are gold plated over silver for low contact resistance. The "G-20" series is available with two, three or four contacts in Melamine, Plaskon-Alkyd, or Diallyl Phthalate molding compounds.

For complete, illustrated engineering literature, write Dept. TTG5, DeJUR-Amsco Corp., 45-01 Northern Blvd., Long Island City 1, N. Y.

Electronic Sales Division **DeJUR**

45-01 Northern Blvd., Long Island City 1, N. Y.
*WORLD'S LARGEST MANUFACTURERS OF MINIATURE PRECISION CONNECTORS



NEW LIGHT ON THE LAMP LOAD PROBLEM

This relay was developed for use in photoelectric street light controls, where, to the problem of handling an incandescent load without contact welding, is added the requirement of doing so on normally closed contacts.

The cold starting current drawn by an incandescent lamp bulb is many times greater than its running (hot) current. When, as in our testing procedures, the circuit is connected over heavy gauge wires direct to a "stiff" power line, and when the bulbs are allowed to cool fully between cycles, the starting current is 10 times the running current. Although it varies with different sizes and voltages

of bulb, a figure of 10 is conservative on 120 volt circuits.

The Type 51 Sigma Relay is a sensitive SPST contactor, normally closed. It operates at 100 milliwatts D. C. (3.2 ma, 10,000 ohm coil).

Switches 10 Ampere Incandescent lamp load at 120 V. A. C. for a life expectancy of 5,500 times, or once per day for 15 years.

The Type 51 Relay should be given a try when 100 milliwatts coil signal must switch 10 to 25 Amps (24 V. D. C. or 110 V. A. C.) 10,000—100,000 times, on resistive or inductive loads.

SIGMA

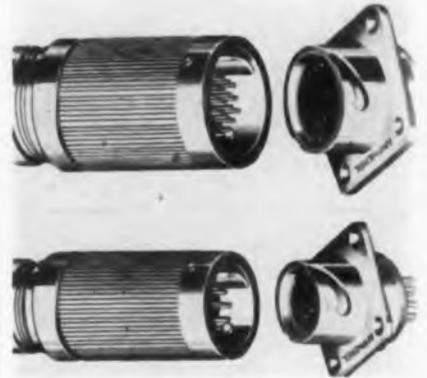
SIGMA INSTRUMENTS, INC.

260 PEARL ST., SO. BRAintree, BOSTON 85, MASS.

New Products

CONNECTORS

The 165 series of "Amphenol" miniature AN connectors for use in modern aircraft, rockets, and missiles. Pressurized but not hermetically sealed, they exceed the government required 54 hr



salt-spray test. Female connectors have a sandwich-type inner seal construction with the containing cartridge spun over to factory-seal the unit against leakage. The outer seal is a silicone O ring. Available in two sizes, six configurations—with 5, 9, 11, 12, 14 or 24 gold plated contacts. American Phenolic Corp., 1830 S. 54 Ave., Chicago, Ill.—TELE-TECH & ELECTRONIC INDUSTRIES.

COILS & TRANSFORMERS

Antenna transformers, r-f output transformers, buffers, doublers, mixers, r-f chokes, linearity coils, or peaking coils are custom produced for dependable component service by controlled coil-winding techniques. Critical "L," "C," and "Q" electrical tests are carried out in the I-T-E laboratories for



quality control purposes. Prototypes are stable under time, temperature variation, and in humid atmosphere. Resistor Division, I-T-E Circuit Breaker Co., 19th and Hamilton Sta., Philadelphia 30, Pa.—TELE-TECH & ELECTRONIC INDUSTRIES.

New Products

CAPACITORS

A new line of glass tubular plastic dielectric capacitors, Type G-6, "Glas-caps" feature light weight and compactness said to be unattainable in other types. They are particularly use-



ful in high voltage dc and low frequency, low voltage ac applications. The units are available in a complete range of ratings from 0.01 μf at 600 v, through 0.0015 μf at 60,000 v. All sizes are available from stock for immediate delivery. Corson Electric Manufacturing Corporation 540 39th St., Union City, N.J.—TELE-TECH & ELECTRONIC INDUSTRIES.

TWO-WAY RADIOS

The "Universal Uni-Channel" series of 144-174 mc, 10 and 25 w FM mobile two-way radios operate interchangeably from 6 or 12 electrical systems without any circuit modification. Tests demonstrate vibrator life in excess of 1,500 hrs. Power drain is 30 amps. at 6.3 v or 15.0 amps at 12.6 v. Models are available for under-the-dash mounting with lo-



controls, and for trunk mount installation with microphone, control panel, and speaker installed near driver. Motorola, Communications & Electronic Div., 4545 W. Augusta Blvd., Chicago, Ill.—TELE-TECH & ELECTRONIC INDUSTRIES.

More New Products Next Page

BourNS

sub-miniature

TRIMPOTS

TRADE MARK



PROVIDE THE ULTIMATE IN CIRCUIT TRIMMING

Simple screwdriver adjustment...

The TRIMPOT is a 25 turn, fully adjustable wire-wound potentiometer, designed and manufactured exclusively by BOURNS Laboratories. Electrical settings in increments of $\frac{1}{4}$ to $\frac{1}{2}$ % are securely maintained during vibration of 20 G's up to 2,000 cps or sustained acceleration of 100 G's. BOURNS' unique self-locking design eliminates cumbersome locknuts. Power rating is $\frac{1}{4}$ watt at 100° F. Standard resistance values from 250 ohms to 25,000 ohms are available for immediate delivery. Information on higher and lower resistances on request.

BOURNS TRIMPOTS are accepted as standard components by aircraft and missile manufacturers and major industrial corporations.

9 TRIMPOTS
TAKE LESS
SPACE THAN
A 2¢ STAMP



Tiny cross-sectional size—only $\frac{1}{4}$ " x $\frac{5}{16}$ "—and rectangular shape save valuable panel space. Instruments are easy to mount individually or in stacked assemblies with two standard screws through the body eyelets.

BOURNS also manufactures precision potentiometers to measure Linear Motion; Gage, Absolute, and Differential Pressure and Acceleration.



BourNS LABORATORIES

6135 MAGNOLIA AVENUE • RIVERSIDE, CALIFORNIA

Technical Bulletin On Request, Dept. 172

© B L PATENTS PENDING

for **MICROWAVE**...

for **TV...**

it's—

pdc

MICROWAVE

COAXIAL TRANSMISSION LINES

$\frac{7}{8}$ " 50 OHM— $1\frac{1}{4}$ " 50 OHM

Ideal for applications to 3000 mc, without regard to frequency. Furnished with RETMA flanges, which feature locating pins and anchor insulator connectors for positive concentricity between sections. Can be supplied with PDC "Air-tite" couplings for rapid, leak proof assembly in the field. Proved in use in many critical applications. More in use than all other types combined.

TOWERS

Prodelin all-aluminum guyed towers are available, in 10-foot increments, to a height of 200 feet. They can be raised or dismantled by 3 men in a half day, without special tools or footings. No wrenches, nuts or bolts required to erect towers.



ANTENNAS

Cavity-Fed Corner Reflector →

All-aluminum, high gain, from 890 to 2700 mcs. Ideal for short distances, as in local "side hops." Lightweight. Low wind resistance, facilitating pole mounting. Inexpensive. (See illustration right.)

← 2000 MC. Horn

All-aluminum, 20 db antenna for 2000 mc microwave communication. Low cost. Replaces more expensive parabolic antennas for short-distance transmission. (See illustration left.)



Parabolic. High gain, center and offset fed, from 890 to 2700 mcs. Spun or mesh aluminum. Superior electrical and mechanical performance. Many features incorporated as a result of years of actual experience and user case histories.

TV BROADCAST

COAXIAL TRANSMISSION LINES

51.5 and 50 ohm teflon and steatite insulated transmission lines and components provide very low attenuation, low VSWR, and flat impedance systems. Nominal 51.5 ohm lines are currently supplied in both teflon and steatite. Teflon lines are available with either RETMA flanges or PDC "Air-tite" couplings at no additional cost. $6\frac{1}{4}$ " teflon lines are supplied only with RETMA flanges; steatite insulated lines with RMA.



UHF-TV WAVEGUIDE

Prodelin is first choice in UHF-TV installations using waveguide. Prodelin pioneered in commercial TV waveguide proving exceedingly efficient over a long term of service in many installations. Special sexed flanges, which allow for expansion, permit rigid hanging direct to the tower members. This also eliminates the 24 bolts previously required and reduces installation time more than 50%.



UHF "TELEPLEXER"

The Prodelin "teleplexer" consists of a vestigial sideband filter and a diplexer. It combines the output of the aural and visual transmitters, rejecting and absorbing the unwanted portions of the signal. The resultant signal is fed to a single transmission line. The "teleplexer" is designed for inexpensive conversion to 50 KW operation.

Write for Fully
Descriptive
Catalog
on all these
Prodelin Products

Prodelin Inc

World's Finest Transmission Lines

307 BERGEN AVE. • KEARNY, N. J.

pdc

New Products

SWEEP GENERATOR

Model 610 high speed sweep generator provides continuously adjustable sweep speeds from 0.05 to 500 cm/ μ sec. The unit can be triggered for single or repetitive sweeps. Used with the Model



600 cathode-ray indicator, the maximum sweep speed is 200 in./ μ sec. Controls and connectors on the front panel include sweep speed controls, trigger input, gate output, and external horizontal deflection input jacks. Power connections are at the rear. **Spencer-Kennedy Laboratories, Inc., 186 Massachusetts Ave., Cambridge 39, Mass.—TELE-TECH & ELECTRONIC INDUSTRIES.**

TRANSMITTER-RECEIVER

New transmitter-receiver combination units announced for operation at frequencies between 450 and 470 mc are expected to be useful in big city police and fire departments and some industrial applications. Mobile units will function from 6 or 12 v batteries. No adjustment is necessary to revert



from one to the other. All station units have 40 w output and are rated for continuous duty. Receivers feature six-coil i-f transformers. **General Electric Co., Electronics Park, Syracuse, N.Y.—TELE-TECH & ELECTRONIC INDUSTRIES.**

New Products

WO-WAY UHF SYSTEM

The Type MCA-401A UHF mobile radio system is rated at 12 w at 450-460 mc and 10 w at 460-470 mc. The main assembly consists of the power supply chassis and the transmitter-receiver



chassis. Operating control head has a drop-out panel to provide accessibility. Also available, MCA 101A mobile two-way radio is rated at 35 w output at 25-25 mc. Transmitter, receiver, and power supply are in one metal cabinet. Designed for dashboard mounting. Mobile Communications Dept., Allen B. Du Mont Laboratories, Inc., 1500 Main Ave., Clifton, N.J.—TELE-TECH & ELECTRONIC INDUSTRIES.

R-F FILTERS

TX-455-9 and the TX-455-SB r-f filters recently announced employ a combination of crystal and toroidal networks designed for operation at standard i-f frequencies employed in communications equipment and receivers. The units can be supplied in various band widths. TX-455-9, for



example, provides a 9 kc total pass band at 455 kc. The TX-455-SB is a side band filter. The size of either type is equivalent to an ordinary i-f transformer. Arnell & Co., Inc., 45 Warburton Ave., Yonkers, N. Y.—TELE-TECH & ELECTRONIC INDUSTRIES.

More New Products Next Page

RESEARCH

brings you a

compact, light, economical

new oven

THE JK09 CRYSTAL OVEN

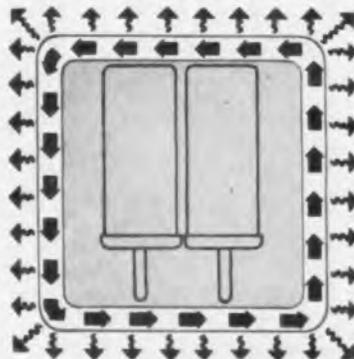
- Only 1.28" dia. x 1.70" high and weighs only 1.5 oz.
- Minimum temperature gradient at crystal.
- Rapid warm up with no overshoot.
- Will meet a specification of $75 \pm 1^\circ \text{C}$ over a temperature range of -55° to $+70^\circ \text{C}$.
- Economical and reliable because design permits tooling for uniform production.



STABILITY

Thru "Thermaflow" Design*

Temperature, like water, seeks its own level. Instead of trying to "dam up" heat within the oven, by use of massive heat retaining elements, the JK09 oven is designed to permit a uniform loss and uniform replacement of heat. Heat is simply replaced as it is lost from the low mass, high conductivity shell. And within this shell the crystal unit remains wrapped in a blanket of warm air. Because sufficient heat is always lost by the shell none need be yielded by the crystal.



JK09 Heat Exchange Pattern



Symbol of Service

THROUGH RESEARCH
STABILITY
AVAILABILITY

The compact, light, inexpensive JK09 matches the performance of many ovens employing multistage heaters and massive heat-retaining elements. It houses one or two crystals, plugs into an octal tube socket, is available with a choice of heater voltage from 6 to 28 volts. It is another JK step in the advancement of miniaturization and extreme stability. Write us for complete engineering information.

The James Knights Company Sandwich, Ill.

AVAILABILITY

A COMPLETE LINE

The JK09 is the newest of the many frequency control units that comprise the JK line of Crystals for the Critical.

* A James Knights Patent.



For **STANDARD** or **CUSTOM-BUILT** co-axial line and waveguide **COMPONENTS** and **TEST EQUIPMENT**, select...



Microwave Products



DIC-2217 — KLYSTRON MOUNT FOR 2K25, "X" BAND

A standard DICO design for operation in the range of 8.5 to 9.6 kmc. An adjustable uncalibrated output padding attenuator is provided. Incorporated in each shielded D.C. input lead is a polyiron absorbing slug, to prevent entrance of interfering energy or radiation of local oscillator energy in the "X" Band region.



DIC-6113 — DUPLEXER ASSEMBLY

This is a typical custom made waveguide component, demonstrating Diamond's ability to manufacture accurately to customer's specifications.

DIC-6028 — FREQUENCY METER, "S" BAND
This reaction type frequency meter covers the range of 2.15 to 4.3 kmc. Similar meters for the range of 1.4 to 2.3 kmc and 3.5 to 6.5 kmc are available. Normally manufactured as reaction type meters, they are also available in the transmission type.



Illustrated above are a few of the many DICO designed and manufactured microwave components, produced under highest quality-control standards. For more complete information on DICO microwave components and test equipment send for catalog 953.

DIAMOND

MICROWAVE CORPORATION

7 North Avenue, Wakefield, Mass.

New Products

RUGGEDIZED TRIODE

A heavy-wall, water-cooled triode Type 6446, is capable of dissipating 20 kw. continuously. High heat storage capacity is provided by the $\frac{7}{16}$ in. thick anode for heavy intermittent



duty, and the high dissipation reserve allows extreme mismatch of load to tube impedance. The 6446 uses only $\frac{1}{2}$ the water flow required for Type 892 for equivalent anode dissipation. The tube is also available in an air-cooled version, Type 6467. **Amperex Electronics Corp., Engineering Dept., 230 Duffy Ave., Hicksville, L.I., N. Y.—TELE-TECH & ELECTRONIC INDUSTRIES.**

POWER TUBE

The RCA-6448 water-cooled beam power tube is for operation as a grid-driven power amplifier at frequencies up to 1,000 mc. In color or black-and-white TV service the unit is capable of delivering a synchronizing-level power output of 15 kw at 500 mc, or 12 kw at



900 mc. As a CW amplifier in class C telegraphy, the tube is capable of 14 kw at 400 mc, or 11 kw at 900 mc. The plate is located in a coaxial electrode structure. **Tube Dept., Radio Corp. of America, Harrison, N. J.—TELE-TECH & ELECTRONIC INDUSTRIES.**

New Products

SIZE B IGNITRON

The WL-5551 A, Size B Ignitron, sealed stainless-steel, water-cooled, mercury-pool tube, is capable of replacing the standard model WL-5551, with the advantage of providing ther-



mostatic control. A calibrated thermostat on the side of the tube can be used to stop tube operation if water flow is insufficient, or with a solenoid water valve to turn cooling water on and off. The tube is designed primarily for resistance welding control. Westinghouse Electronic Tube Div., Box 284, Elmira, N. Y. —TELE-TECH AND ELECTRONIC INDUSTRIES.

RECEIVING TUBES

Types 2V2, 5AU4, 6RA8, and 6BU5 are four new receiving tubes for color TV sets. The 2V2 high voltage rectifier is a filamentary diode for flyback type power supplies. The 5AU4 is a twin



ode for the power supply of TV receivers. The 6AR8 is a double-anode wet beam deflection tube for use as a synchronous detector in color receivers. The 6BU5 is a low-current, high voltage beam pentode for use as a shunt voltage regulator in the high voltage power supply of color TV receivers. General Electric Tube Department, Menectady 5, N. Y.—TELE-TECH & ELECTRONIC INDUSTRIES.

More New Products Next Page

For STANDARD or CUSTOM-BUILT R. F. or Pulse Connectors

select ...



Diamond manufactures a broad line of high quality connectors, including . . .



**CO-AXIAL
CABLE
CONNECTORS**

BNC and BNC High Voltage
N
C
HN

**SKL
LN
LC
BN**

**PULSE CONNECTORS
ADAPTERS (cable to rigid line)
TERMINATIONS
COUPLINGS**

**CRYSTAL HOLDERS
ADAPTERS (between series)
SUB-MINIATURE
CONNECTORS**

**TEST JACKS
CABLE ASSEMBLIES**

Send for catalog 53E

DIAMOND MANUFACTURING

C O R P O R A T I O N

7 North Avenue, Wakefield, Massachusetts

To the **E. E.**
 or **Physics**
Graduate
 with experience in
Radar
 or **Electronics**

Here's a **new kind** of career

Hughes Research and Development Laboratories are engaged in a continuing program for design and manufacture of advanced radar fire control systems in military all-weather fighters and interceptors.

THE GREATEST advancements in electronics are being made in this sphere because of military emphasis. Men now under 35 years of age will find this activity can fit them for future application of highly advanced electronic equipment.

YOU WILL serve as technical advisor in the field to companies and government agencies using Hughes equipment.

TO BROADEN your field of experience in radar and electronics you will receive additional training at full pay in the Hughes Laboratories to become thoroughly familiar with Hughes radar and fire control equipment.

AFTER TRAINING you will be the Hughes representative at a company where our equipment is installed; or you will advise in the operation of Hughes equipment at a military base. (Overseas assignments, single men only.)

Hughes Field Engineer G. R. Chambers instructs a group of Air Force technicians in the operation and the maintenance of Hughes equipment.



Assurance is required that the relocation of the applicant will not cause disruption of an urgent military project.

Hughes

Research
 and
 Development
 Laboratories

SCIENTIFIC
 AND
 ENGINEERING
 STAFF

Culver City, Los Angeles County, Calif.

New Products

TRANSISTOR

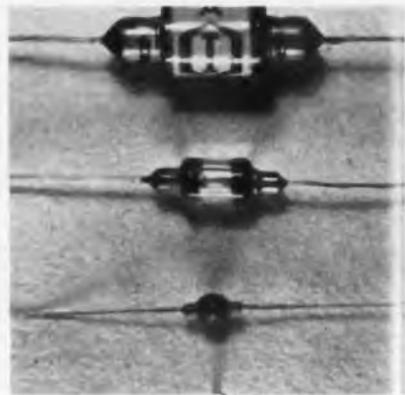
An experimental high-power p-n-diffused-junction transistor, Type X7 is available in sizable quantities. It is particularly useful when used in matched pairs in Class B audio amplifier applications, it is said, and sub-miniature matching transformers are available for use in such circuits. Although derated when operated at temperature above 80° F. the unit has found wide use in the transistor laboratory.



Though the unit is not represented to be of high alpha, the manufacturers guarantee minimum power gain of 10 db at room temperature when used in the recommended circuit. Transistor Products, Inc., Snow & Union St., Boston 35, Mass.—TELE TECH & ELECTRONIC INDUSTRIES

GERMANIUM DIODES

Types 320, 820, 1230, 550, 550A, 550B, 550C, 3100D, and 6100D miniature germanium diodes combine the high acceleration resistance of junction diodes with the small capacity values of normal point contact diodes. The units are designed to withstand high acceleration



forces. The body, made by a special plastic pearl polymerization process, is 0.118 in. in diameter and less than 0.20 in. long. The units can operate in ranges of 50 MC/S. Intermetal Corp., 120 Wall St., New York 5, N. Y.—TELE TECH & ELECTRONIC INDUSTRIES

New Products

DOUBLE TRIODE

The miniature, nine pin, double triode, RTMA 6385, replaces the 2C51, 6670, and similar tubes. The tube is intended for use as an amplifier to increase or control terminating voltages or power; as a mixer to change the frequency of electrical energy; as a clamping tube or flip-flop; or, as an



oscillator. As an oscillator, the upper limit of its frequency is approximately 500 mc. μ is 35 and g_m is 5000 μ mbos. Withstands severe shock and vibration. Red Bank Div., Bendix Aviation Corp., Eatontown, N.J.—TELE-TECH & ELECTRONIC INDUSTRIES.

REGULATOR TUBE

The 6BD4 is a high-voltage, sharp cutoff beam triode regulator for anode and convergence supplies of color TV receivers. The unit has a large bulb which provides long leakage paths and prevents corona effects. A high-voltage electron-gun construction and a double-ended structure for maximum high-voltage insulation provide arc-free performance. Its amplification factor of 1,650 makes possible precise high voltage regulation for color TV. CBS-Hytron, Div. Columbia Broadcasting System, Danvers, Mass.—TELE-TECH & ELECTRONIC INDUSTRIES.

PLUG

Plug SM-5 has a cable O.D. 0.18 in.—0.2 in. Impedance is 50 ohms. Insulation is Rexolite. The unit is typical of a line of constant impedance connectors of fractional size and weight with a frequency limit of 2,000 MC/s and maximum voltage peak of 500 v. The line also includes chassis receptacles, junctions, and elbow-plugs. The NC series comprises new types of high impedance precision connectors made by the same company. Transradio Ltd., 138A, Cromwell Road, London, S.W.7, England—TELE-TECH & ELECTRONIC INDUSTRIES

More New Products Next Page

STAINLESS, INC.

NORTH WALES,

PENNA.

AM

FM

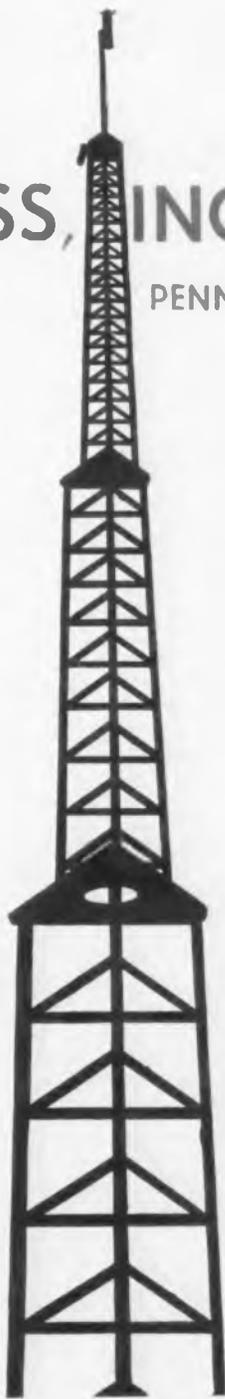
TV

Mobile

Microwave

TOWERS

We are fully equipped to
maintain all our towers



**MADE
TO
SURVIVE!**



10-Watt
Type RS-10

5-Watt
Type RS-5

2-Watt
Type RS-2

Also Available — RH Types — 25, 50 and 250 Watts

Miniature POWER Resistors

Carefully crafted for matchless performance, Dalohm miniature power resistors are made to survive the most severe environmental, shock, and vibration conditions. Smallest in size, they also represent the answer to the space problem.

Dalohm RS type miniature power resistors are completely welded from terminal to terminal; silicone sealed, offering maximum resistance to abrasion, and high dielectric strength. They are 100% impervious to moisture and salt spray.

Write,
Wire
or Call

1304 38th Ave.
Phone 3127

- Temperature coefficient 0.00002/deg. C
- Ranges from 0.1 Ohms to 55,000 Ohms, depending on type
- Tolerance 0.05%, 0.1%, 0.25%, 0.5%, 1%, 3% and 5%
- Manufactured in accordance to applicable JAN and MIL specifications.

DALE PRODUCTS, INC.

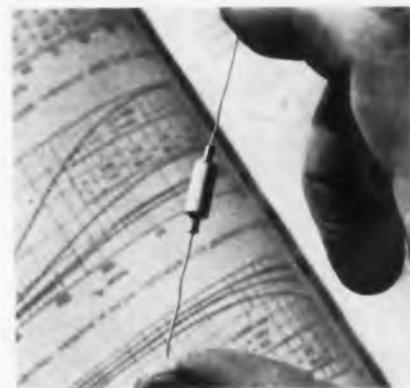
Columbus, Nebraska, U.S.A.

In Canada — Telestrata Corp., Ltd., Toronto and Montreal

New Products

G-E GERMANIUM DIODES

JAN Types 1N69, 1N70, and 1N81 hermetically-sealed ceramic germanium diodes and some computer types have been announced by G-E as available in production quantities at no price in-



crease. Other commercial types will be available in a few months. Features of the G-E plastic case diodes have been preserved in the new hermetically-sealed units. The platinum-rhuthenium whisker is welded to the germanium pellet, and the hermetic seal is metal to ceramic. Gas tight ceramic cases with metalized ends permit solder seal to nickel pins. The diodes exceed JAN humidity specifications requirements. **General Electric Co., Electronics Park, Syracuse, N. Y.—TELE-TECH & ELECTRONIC INDUSTRIES**

CORE MATERIAL

Ferramic "Q" is a new soft magnetic core material created to overcome the instabilities that characterized previous high performance ferrites. Tests have proved that the material is completely stable in respect to age, shock, vibration, and temperature. Suitable for antenna rods, filter inductances, loading coils, r-f coils, the material features higher Q and lower losses at all frequencies up to 30 MC. **General Ceramics & Steatite Corp., Keasbey, N. J.—TELE-TECH & ELECTRONIC INDUSTRIES.**

SEMICONDUCTORS

Temperature stable silicon junction diodes and various types of germanium transistors are included in new line of semiconductor devices. Types 600 and 601 diodes in glass-to-metal seals are stable at 150° C, and have back currents from 0.001 to 0.01 μ a at rated voltages. Type X-2 n-p-n grown junction power transistor is rated at 350 mw continuous dissipation at 25° C ambient. Power gain is 22 db for grounded grid amplifier. Other new units available are phototransistors, p-n-p alloyed junction transistors, and junction tetrode transistors with two base layer connections. **Texas Instruments, Inc., 6000 Lemmon Ave., Dallas 9, Texas.—TELE-TECH & ELECTRONIC INDUSTRIES**

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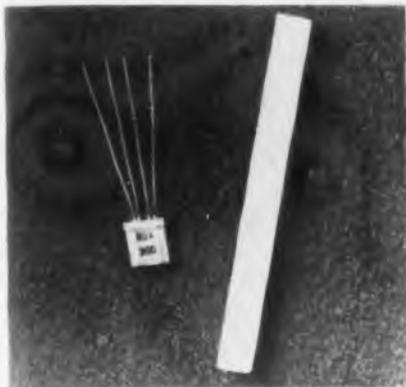
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New Products

TRANSISTORS

RD-X300, RD-X301, and RD-X300 high frequency grown junction tetrode transistors, recommended for high frequency oscillators and amplifiers at frequencies above the limits of grown



junction transistor triodes, make possible the commercial adaptation of the transistor to radio, television, and communications equipment for the first time, it is said. At 20° C. ambient temperature, the maximum collector voltage of the units is 30 v., maximum collector current is 5 ma, maximum collector dissipation is 50 mw, and maximum base to base current is 5 ma. Originally developed by Bell Telephone Laboratories, the devices are now available for immediate delivery at Germanium Products Corp., subsidiary of Radio Development & Research Corp., 26 Cornelison Ave., Jersey City, N. J.—TELE-TECH & ELECTRONIC INDUSTRIES

JUNCTION TRANSISTORS

The HA-1, HA-2, and HA-3 p-n-p junction transistors are designed for hearing-aid circuits. Electrically, the HA-1 and HA-2 are low-level, high-gain units especially tested to meet hearing aid low noise requirements. Restrictive limits have been set for current amplification factor, therefore, these units meet the requirements of the first and second stages of hearing aids, respectively. The HA-3 is designed to satisfy the third, or power output stage. CBS-Hytron Div., CBS, Danvers, Mass.—TELE-TECH & ELECTRONIC INDUSTRIES.

GERMANIUM CRYSTAL

Gahagan, Inc. announces a low-noise germanium UFH mixer crystal. Though only in production for approximately four months, it is said to have gained engineering approval among the major manufacturers of TV tuners and converters. Gahagan, Inc., 11 W. Fourth St., Bethlehem, Pa.—TELE-TECH & ELECTRONIC INDUSTRIES

More New Products Next Page



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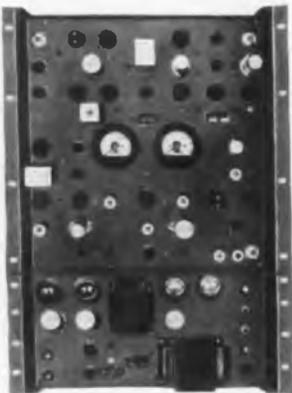


COLOR TELEVISION INSTRUMENTATION

Three new color television units—part of a complete line of precision instruments designed for studios, research laboratories, and manufacturers.

ENVELOPE DELAY TRACER MODEL EDT-1

An envelope delay tracer for rapid measurement of the envelope delay or amplitude characteristic of any amplifier, network, or complete system. Envelope delay at single frequencies is read directly in microseconds, eliminating tedious plotting or mathematical calculations. Using a sweep generator and oscilloscope, the entire delay and amplitude characteristic can be observed over the swept frequency range. The EDT-1 is supplied complete with separate regulated power supply, for standard rack mounting.

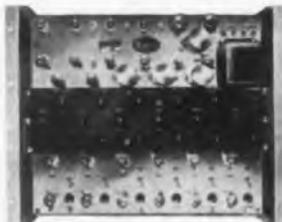


COLOR VIDEO MONITOR MODEL CVM-1

A portable, self-contained color video monitor, built to instrument standards. Provides superior linearity, full definition, and excellent sync stability. Features crystal-controlled a.f.c. color sync. Convenient operating and adjustment controls. Unitized construction for ease of service. Filtered, forced-air cooling. Includes all power supplies. Complete with 31 tubes, including 15" tri-color kinescope. Only 21" wide x 29" high x 32" deep.

MULTI-BURST GENERATOR MODEL MBG-1

A new video test signal generator for quick and accurate frequency response checks of complete television systems, distribution networks, or components. Individual oscillators produce discrete bursts of sinusoidal frequencies from 0.5 to 6.0 mc. Selector switches provide choice of 13 frequencies, in six overlapping ranges. Any six frequencies can be obtained simultaneously. Adjustable sync pulse, blanking pedestal, and white reference level. Composite color video signal can be simulated. For standard rack mounting.



Write for complete specifications on these items. Wickes manufactures color conversion units, signal generating, distribution, and signal certification equipment, and test and measurement instruments. Your inquiries are invited.

Wickes ENGINEERING AND CONSTRUCTION COMPANY
12TH STREET AND FERRY AVENUE ESTABLISHED 1920 CAMDEN 4, NEW JERSEY

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WIDE TEMPERATURE RANGE
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Approximately the same as Aluminum and Brass

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New Products

POWER CONNECTORS

The series "E-Z 16" Continental precision power connectors with bayonet locks, recently announced, provide a positive lock against accidental disconnection of plug and socket. The bayonet



lock, a stainless steel guide socket with a detent for a bayonet guide pin, is also a self-aligning guide pin and guide socket for positive polarization. These connectors are available in 12, 18, 24, and 34 contacts with bayonet locks, either chassis or cable-mounted. DeJur-Amsco Corp., 45-01 Northern Blvd., Long Island City 1, N.Y.—TELE-TECH & ELECTRONIC INDUSTRIES.

LOCKING ASSEMBLY

The MI series, multi-contact, double screw, locking assembly engages and disengages mated connectors by two knobs on its hood top. Wired before hood assembly, the contacts engage with the first turn of the screw-locking device. Four guide pins assure parallelism between the connector bodies. Alternate rotation of the knobs disengages



the connectors, and an audible click signals electrical disengagement. Assemblies are currently available with 34, 50, and 75 contact miniature connectors. U. S. Components, Inc., 454-462 E. 148 St., New York 5, N.Y.—TELE-TECH & ELECTRONIC INDUSTRIES.

More New Products Next Page



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Covers are supplied with a wide variety of design modifications. Hudson covers can include deep or shallow knockouts for headers, holes for terminals and many other special features. Hudson offers the electronic designer custom components at unit costs that reflect mass production methods and economies.

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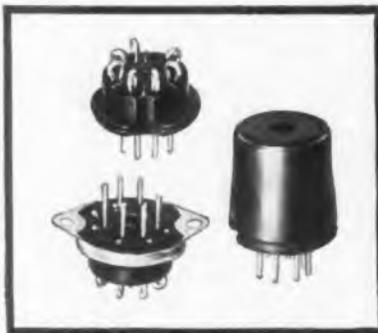
NEW

TUBE ACCESSORIES and ELECTRONIC HARDWARE



"Ventilator" shields not only improve "hot" tube performance by dissipating heat but are the most economical shields in Methode's extensive line. Easily handled and compression fitted to ground terminals on Methode laminated or printed circuit sockets, shields are available in lengths of 1-11/16" or 2-1/16" with one standard diameter which fits either seven or nine pin tubes. Available with tin or black oxide finish.

Molded phenolic plugs, with seven pins, 45° apart on .375" centers, mate with economical standard miniature sockets. Designed to save space and competitive in price with bulky wafer pin plates, these units are ideal for base assemblies on plug-in components or quick-disconnect harness assemblies. Plugs are available with or without vinyl caps or mounting saddles. General purpose or mica phenolic insulators with cadmium plated brass pins are standard.



For high voltage tubes these corona caps and socket combinations for both octal and noval sizes feature generously rolled outer surfaces. Assemblies are designed for screw mounting to condenser studs or stand offs and are available with general purpose black or low loss mica phenolic insulators. Noval caps available with 1-5/16" or 1-1/2" major rim diameter. Octal units have insulating fibre liners.

"Wire Wrap" sockets have terminals adapted for high speed solderless attachment of leads at considerable savings in assembly and inspection time. Miniature seven and nine pin units available in both laminated and molded types.



METHODE Manufacturing Corp.

2021 West Churchill Street • Chicago 47, Illinois

Geared to produce Plastic and Metal Electronic Components

New Products

COUNTER-TIMER

Intervals from 3 μ secs. to 1,000,000 seconds can be measured and indicated by the Model 5510 universal counter and timer. Maximum accuracy is ± 10 μ sec. Frequency from 0 cps to 1.0 Mc



can be measured with a maximum accuracy of ± 1.0 cps. As an electronic counter, the instrument operates at rates up to 1,000,000 cps. The unit utilizes the Models 705AF and 707AF decimal counting units that provide binary coded output information for data reduction requirements. **Berkeley Div., Beckman Instruments, Inc., 2200 Wright Ave., Richmond, Calif.—TELE-TECH & ELECTRONIC INDUSTRIES.**

LAPEL MICROPHONE

Without cable, the L-100 lapel microphone weighs only 1 oz. A rubber-padded clip attaches the unit with the microphone upright and the cord always downward. Frequency response is 50-10,000 cps; output level, 52 db below 1 v/dyne/sq./cm. Pickup pattern is essentially non-directional. Furnished



with a 20-foot, attached, single-conductor shielded cable. Unit is available without the clip as Model 100. With the exception of the cable, specifications are the same. **Turner Co., 909 17th St. N.E., Cedar Rapids, Iowa—TELE-TECH & ELECTRONIC INDUSTRIES.**

More New Products Page 38

to Monitor Color tv...

you need the Type 1183-T TV Station Monitor and the Type 1181-AT Color-Subcarrier Monitor . . . equipment for complete and reliable monitoring of NTSC Color Television in accordance with FCC specifications.

WHAT FCC REQUIRES

VISUAL-CARRIER must be maintained to an accuracy of ± 1000 cycles

INTERCARRIER SEPARATION of Visual-Aural signal must be 4.5 Mc within ± 1000 cycles

COLOR SUBCARRIER must be 3.579545 Mc to an accuracy of ± 3 parts per million (approximately ± 10 cycles)

WHAT COLOR MONITORING EQUIPMENT CAN DO

✓ The Type 1183-T TV Station Monitor indicates visual-carrier deviations with accuracy of ± 500 cycles for at least 30-90 days in vhf band, at least 10-18 days in uhf band.

✓ The Station Monitor permits measurement of inter-carrier separation to within ± 300 cycles for 30 days and to within ± 500 cycles for 6 months

✓ The Type 1181-AT Color-Subcarrier Monitor indicates color-subcarrier deviations to better than ± 1 cycle for 30 days, ± 5 cycles for 1 year.



Type 1181-AT Color-Subcarrier Monitor . . . indicates directly both magnitude and direction of frequency deviation of the color subcarrier . . . has high reliability for continuous service

This instrument is an adaptation of the popular Type 1181-A Frequency-Deviation Monitor which has served a-m broadcasters for a decade — a new high-stability crystal assembly in the color subcarrier monitor results in excellent performance at the 3.58 Mc color-subcarrier frequency

Wide range of input voltages — monitor will operate on signal as low as 10 mv — changes in input voltage magnitude have no effect on monitor operation

Narrow-band i-f system provides more than adequate noise rejection — deviation indications are unaffected by extraneous amplitude modulation.

Panel adjustments bring monitor indication into agreement with independent frequency measurements, when required

Panel lamps indicate failure of monitor input signal

Remote metering facilities provided

Price \$775

Write for the 8-Page T-V Monitor Bulletin



GENERAL RADIO Company

275 Massachusetts Avenue, Cambridge 39, Massachusetts, U.S.A.
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PRINT IN BINDING



Type 1183-T TV Station Monitor indicates visual-carrier deviations with an accuracy of better than $\frac{1}{2}$ ppm . . . indicates aural-carrier deviations to better than 1 ppm . . . measures modulation level . . . and makes provision for checking distortion and noise for "proof-of-performance" testing.

This instrument meets every requirement of the FCC for monitoring black and white, vhf or uhf television . . . and now in conjunction with the Type 1181-AT Color Subcarrier Monitor, this equipment is ready for color TV as well. Type 1183-T TV Station Monitor is in use by nearly every tv station . . . \$2830 to \$2905 depending on band.



**Presenting the only
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- Small size, slim design!
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- World-famous, patented, Uniphase system!

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Out of the Shure Laboratories has come a slim, small Broadcast microphone so remarkable in its overall performance that we have given it a special name — the "Concert-Line."

The "333" is the only small, slim Broadcast microphone in the world with the world-famous, patented, Uniphase system!

The small, slim "333" provides the fine quality formerly found only in the conventional-type, large size Broadcast microphones. The Concert-Line "333" is truly an important advancement in microphone development and design. The Unidirectional "333" is **AVAILABLE NOW** — in limited quantities — for the most discriminating users.

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Solar Battery

(Continued from page 128)

single crystal, is the basis for the junction transistor.

Although work is still in the laboratory stage, actual use of the solar battery in the telephone business is a strong possibility. For example, silicon solar batteries



Fig. 3: Larger versions of solar battery provide proportionately greater output



Fig. 4: Sun's rays power mobile transmitter

might be used as power supplies for low-power mobile equipment, or as sunpowered battery chargers which could be used at amplifier stations along a rural telephone system. Such a system, using transistors, could provide greatly increased service on rural telephone lines without the addition of new wires.

New Sylvania TV Plant

Sylvania Electric Products Inc. has begun manufacturing operations in its new 422,000 square foot television set assembly plant in Batavia, N. Y. The new plant is one of several facilities in four states operated by Sylvania's Radio and TV Div.

ALSiMAG[®] 576

**AN ECONOMICAL
HIGH STRENGTH
ALUMINA CERAMIC**

Meets L-5A Requirements
of JAN-L-10 Specifications

Note These Advantageous Properties

PROPERTY	UNIT	ALSiMAG 576 L-5A	
Water Absorption		Impervious	
Specific Gravity		3.4	
Density	Lbs. per cu. in.	.123	
Standard Body Colors		White	
Alternative Body Colors		Pink 513 (L-5A)	
Safe Temperature at Continuous Heat	[°] C. [°] F.	1 100 2 012	
Hardness	Mohs' Scale	9	
Thermal Expansion Linear Coefficient	Per [°] C. 25-700 [°] C.	7.5x10 ⁻⁶	
Tensile Strength	Lbs. per sq. in.	20 000	
Compressive Strength	Lbs. per sq. in.	140 000	
Flexural Strength	Lbs. per sq. in.	40 000	
Dielectric Strength (step 60 cycles) Test discs 1/4" thick	Volts per mil	250	
Volume	25 [°] C.	> 10 ¹¹	
Resistivity at Various Temperatures	100 [°] C.	Ohms per centimeter cube	2.0x10 ¹³
	300 [°] C.		5.0x10 ¹¹
	500 [°] C.		1.0x10 ¹⁰
	700 [°] C.		3.0x10 ⁹
	900 [°] C.		4.0x10 ⁸
Tc Value	[°] C.		800
	[°] F.		1 472
Dielectric Constant	60 Cycles		8.4
	1 M.C.		8.3
	10 MC.		8.2
	100 MC.		8.1
Power Factor	60 Cycles		.0013
	1 M.C.		.0007
	10 MC.		.0007
	100 MC.		.0008
Loss Factor	60 Cycles		.011
	1 M.C.		.006
	10 MC.		.006
	100 MC.		.006

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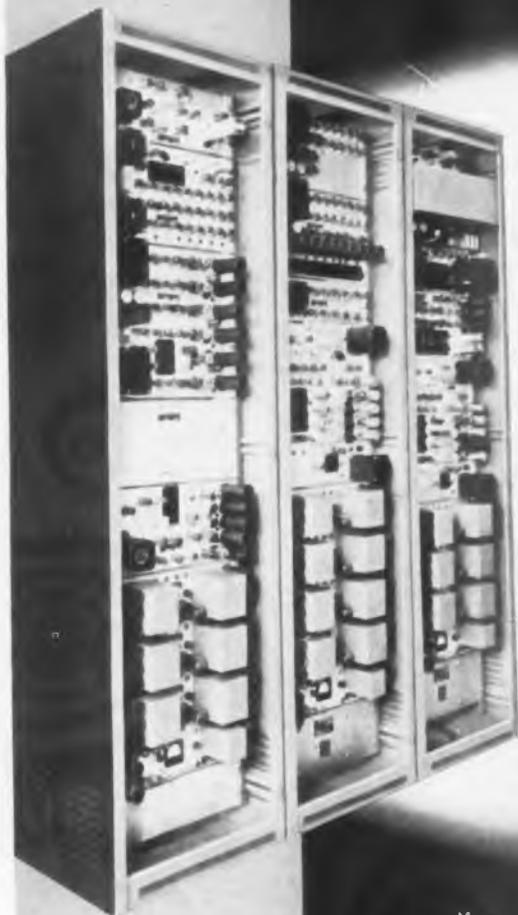
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at reasonable cost.

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Tel-Instrument Co. Inc.

728 GARDEN ST., CARLSTADT, NEW JERSEY

Noise Analyzer

(Continued from page 102)

the ac for the filaments.

Each unit is thoroughly shielded to avoid pickup of stray voltages. This also the reason for the use of 2 separate cabinets for power supply and measuring equipment.

The input voltage indicator is calibrated in mv. The noise indicator shows only a relative reading and therefore needs no calibration.

Fig. 1 shows the completed units.

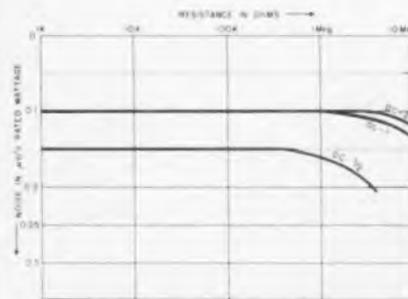


Fig. 4: Noise as function of resistances

Measurements were made for three different types of Dale Products' deposited carbon resistors, namely DC-2 (2 watt), DC-1 (1 watt) and DC-1/2 (1/2 watt). Values ranging from 1 kilohm to 10 megohms were used.

Fig. 4 shows the noise in $\mu\text{v/v}$ rated wattage as function of the resistance value. It can be seen that the noise figure is linear up to about 1 megohm for the types DC-1 and DC-2 and up to about 500 Kilohm for type DC-1/2. For all resistors measured the noise was below the maximum noise level of $0.25 \mu\text{v/v}$ rated wattage.

New Measurement Service

Through the services of its Ohmite Laboratory, the Armour Research Foundation of Illinois Institute of Technology, Chicago, offers industry a service in the field of precision electrical measurements of a quality approaching that of the U.S. Bureau of Standards.

The laboratory, founded in 1945 on an initial grant of \$35,000 from Mr. David T. Siegel, president of the Ohmite Mfg. Co., and an Illinois Tech alumnus, aims to provide a service not generally available in the Midwest.

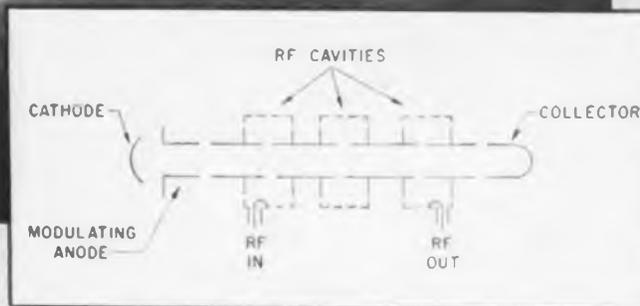
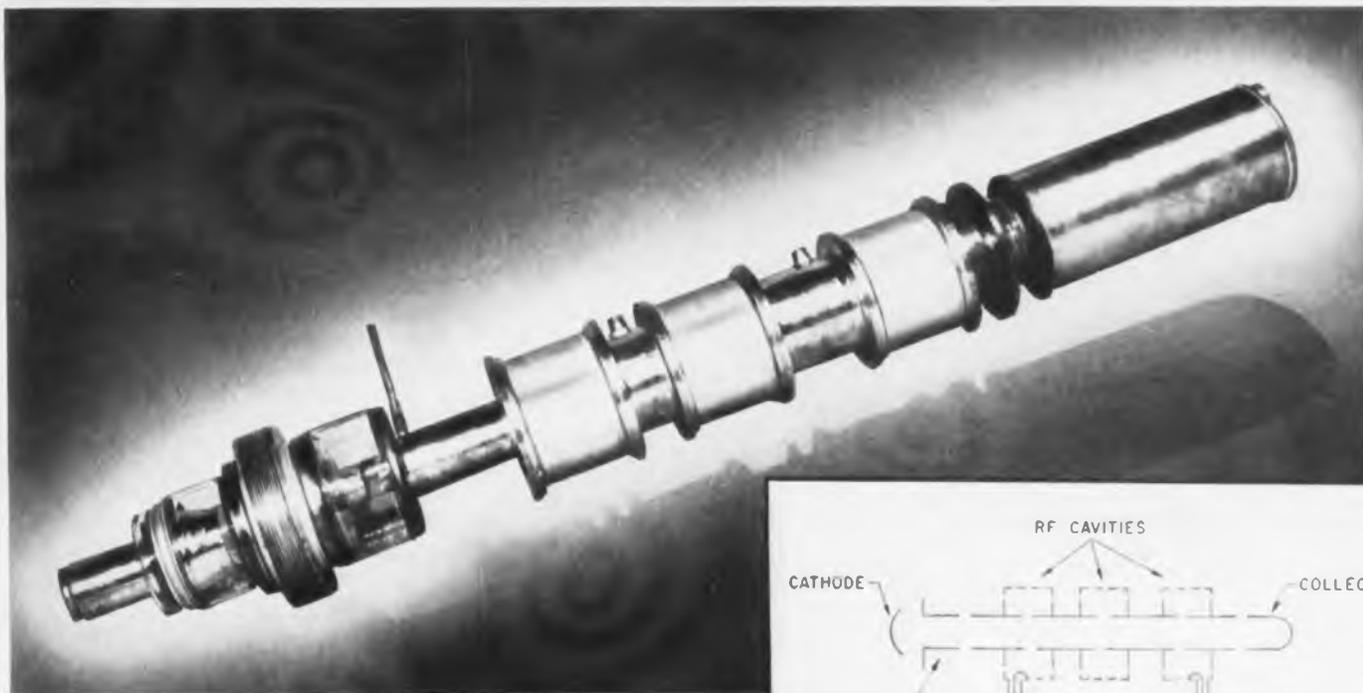
Specifically, the laboratory facilities are designed for precision measurements of: dielectric constant and dissipation factor, properties of magnetic materials, audio-frequency and radio-frequency, including frequency checks.

Eimac Klystron Report

X557

modulating anode klystron

- Beam modulation
- Easy pulsing
- Increased efficiency



A new concept in klystron design is introduced by Eimac with the X557 modulating anode klystron. An insulated modulating anode placed between the cathode and drift tube section permits:

- Controlled variation of beam current independent of beam voltage through regulation of the modulating anode voltage
- Easy pulse modulation with low pulsing power
- Amplitude modulation with low modulating power
- 30% efficiency at carrier level with 100% amplitude modulation on top of the carrier
- Additional research and operational functions

The modulating anode klystrons are another of Eimac's klystron developments which already include high power amplifiers for UHF, including TV, and reflex klystrons for use in conditions of severe shock, vibration and sustained acceleration at frequencies to 9600mc.

- For a thorough question and answer discussion of klystrons, write our Technical Services department for a free copy of the 20-page booklet, "Klystron Facts."

EITEL-McCULLOUGH, INC.
SAN BRUNO • CALIFORNIA

Eimac

MARK OF EXCELLENCE IN
ELECTRON-POWER TUBES



TYPE 324-A VIDEO PHASE METER

This instrument of laboratory precision makes possible the rapid and accurate measurement of phase angle THROUGH THE VIDEO RANGE. It provides verification of design calculations, a criterion for optimum adjustment of delicate phase relationships, or a maintenance checking tool in the wide-band electronic system in modern use.



SPECIFICATIONS

- METER RANGES:** Phase angles from 0° to 360° full scale; and 90° quadrants full scale; no ambiguity.
- FREQUENCY RANGE:** 20 Kc. to 4.5 Mc. — Range down to 20 cycles may be supplied on special order.
- WAVEFORMS ACCEPTED:** Sine waves and any complex waves having not more than one positive-going zero axis crossing per cycle. Phase angle measurement is defined as phase difference between corresponding positive going zero axis crossings of the periodic signals being compared.
- AMPLITUDE RANGE:** 2 volts to 300 volts peak.
- ACCURACY:** ± 4° on quadrant scales. Incremental change of 0.25° is easily read.
- INPUT IMPEDANCE:** 10 megohms shunted by 14 mmf.
- FULL DETAILS UPON REQUEST

TECHNOLOGY INSTRUMENT CORP.

545A MAIN ST., ACTON, MASS., COLONIAL 3-7711

West Coast Engineering Facility 731 North LaBrea Avenue, Hollywood, Calif. Telephone WHitney 0108.

Trochotrons

(Continued from page 96)

cations. It contains a control grid for modulating the beam, ten spades, ten by-spades for the stepping function and ten output plates. (See Fig. 2.) The voltage and power levels are comparable to those of an output pentode. See Fig. 9 for plate and spade characteristics.

Single-Pulse Tube

An exploded view of a pulse counting 10-position tube with a common plate is shown in Fig. 10. The tube is intended for single-pulse stepping at speeds up to 10⁶ counts/sec. The applications include pulse counters, time and frequency meters and decimal calculating machines. It can be reset to any position. Both electrical (spade voltage) and visual output (fluorescent screen) are obtainable from any position.

The applications of trochotrons include scalars, computers, time meters and other instruments, multiple switches, commutators and selectors in communication plants. In multichannel telephone systems the trochotron can be used not only as distributor but also and simultaneously as modulator.

The commercial Trochotrons at Figs. 8 and 10 are manufactured in Sweden by TELEFONAKTIEBOLAGET L. M. ERICKSON, STOCKHOLM

Bandpass Nomographs

(Continued from page 113)

find the series capacity, $C_1 = 11 - 6.5 = 4.5 \mu\text{f}$.

Nomograph Extension

It should be noted that Nomographs 1 and 2 cover the frequency range 1 to 10,000 mc. However, they may be extended to cover any frequency simply by multiplying or dividing by a proportionality factor, because the inductive and capacitive values increase in inverse proportion to the frequency. In the example shown, if the frequencies had all been in kc instead of mc, the procedure would have been the same, except that the resulting values of L and C would be multiplied by 1000. In other words, as the frequency goes down in multiples of that shown on the nomographs, the L and C values are multiplied in the same ratio.

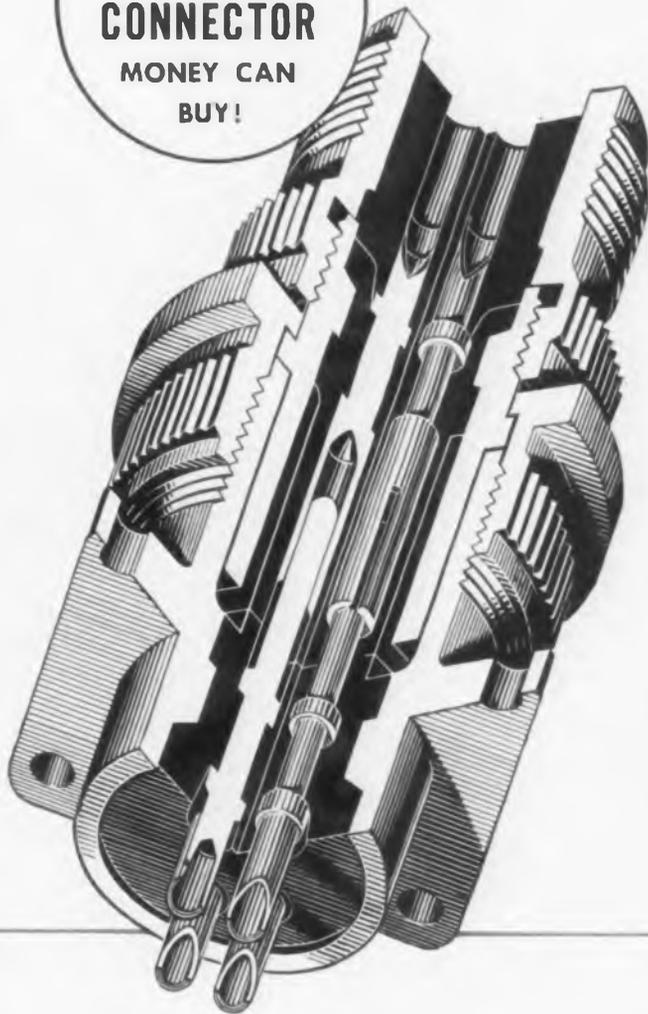
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When operating conditions demand an electrical connector that will stand up under the most rugged requirements, always choose Bendix Scinflex Electrical Connectors. The insert material, an exclusive Bendix development, is one of our contributions to the electrical connector industry. The dielectric strength remains well above requirements within the temperature range of -67°F to $+275^{\circ}\text{F}$. It makes possible a design increasing resistance to flashover and creepage. It withstands maximum conditions of current and voltage without breakdown. But that is only part of the story. It's also the reason why they are vibration-proof and moisture-proof. So, naturally, it pays to specify Bendix Scinflex Connectors and get this extra protection. Our sales department will be glad to furnish complete information on request.

- Moisture-Proof • Radio Quiet • Single Piece Inserts •
- Vibration-Proof • Light Weight • High Insulation Resistance
- High Resistance to Fuels and Oils • Fungus Resistant •
- Easy Assembly and Disassembly • Fewer Parts than any other Connector • No additional solder required.

The Finest
**ELECTRICAL
CONNECTOR**
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BUY!



BENDIX SCINFLEX

**ELECTRICAL
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Radar Test Set

(Continued from page 115)

shortcomings, but the most useful one is an adaptation of the short slot duplexer described by H. J. Riblet in the February, 1952 issue of the Proceedings of the I.R.E. In this case the T-R tubes were replaced by shorting pins actuated by solenoids. The passive functions are generally performed with the pins pulled out (except that in the Power Monitor function the pin in front of the crystal is dropped into place to protect it from the high peak powers). The pins are pulled out so far that the only way for power to leak into the guide is through the length of circular guide



Fig. 5: Plug-in feature of construction

that is well beyond cutoff—which can be made to any desired isolation. In the active or Signal Generator function the two pins are dropped into place. These pins are positioned so as to cause the incident power to be reflected out the input-output arm with virtually no losses. Leakage out of the waveguide can, of course, be easily suppressed by appropriate polyiron chokes around the pins. The resulting structure is easy to make and can be operated with solenoids actuated by the function switch—which, incidentally, also switches the voltages and the meter circuits. See Fig. 4.

By relating the different functions in some way, a useful combination instrument can be produced.

Ketay Mfg. Corp. Opens New Plant

Ketay Mfg. Corp. has opened a plant in Commack, Long Island with 43,000 square feet of air-conditioned work space for the production of precision electro and electro mechanical devices.

Skew Antennas

(Continued from page 123)

tending the circle diameter and using it as a function for the abscissa of the plots. They indicate that the most general and effective improvement is achieved with 90° skew.

A final series of curves to summarize the improvement is given in Fig. 10. Here it can be clearly seen that for any circle diameter there

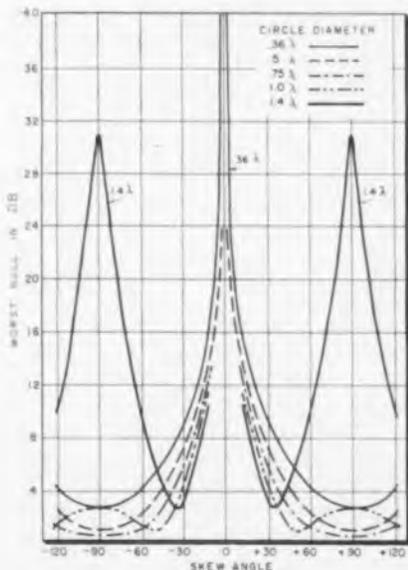


Fig. 9: Proper choice of skew is dependent mainly upon the diameter of the circle

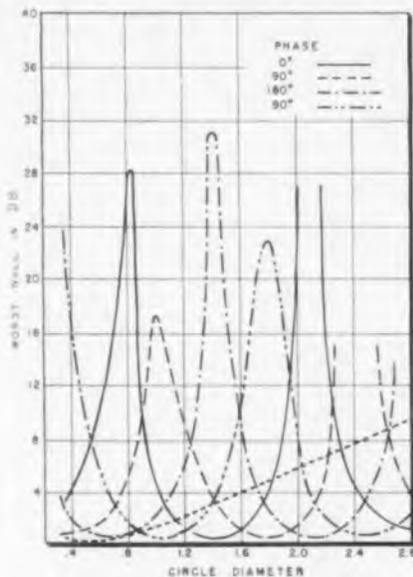


Fig. 10: Appropriate phasing is chosen for the particular diameter and the degree of skew

is an optimum phase progression in the array which will give a good pattern. The dotted line shows the best condition that can be obtained with no skew (in-phase excitation).

The author is indebted to Dr. V. J. Andrew for the origin of the skew principle.
 Wolf, L. J., "High Gain and Directional Antennas for Television Broadcasting," *Broadcast News*, March-April, 1950, p. 46.
 Preston, John, "The WJZ-TV Auxiliary Antenna," *Tele-Tech & Electronic Industries*, Oct. 1952, p. 38.

SMALLEST HIGH PERFORMANCE BROADCAST PRE-AMP, BOOSTER AMPLIFIER EVER DEVELOPED



- LENGTH 9"
- WIDTH 1 3/4"
- HEIGHT 3 1/4"

— ideal for inclusion in facilities built to meet FCC requirements

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The grid shows a 3x12 arrangement of Model 5116 units, demonstrating a 61% reduction in volume compared to 12 units of the Model 116-B.

SPACE SAVING THAT REALLY COUNTS!

61% reduction in volume permits mounting of 33 Model 5116 units in the space required by 12 of the very popular Langevin Model 116-B.

Photo below, illustrates the extremely compact racking possible with the new Model 5116. Note complete accessibility and unobstructed appearance. Units at extreme right are Langevin 5117 Program/Monitor Amplifiers.

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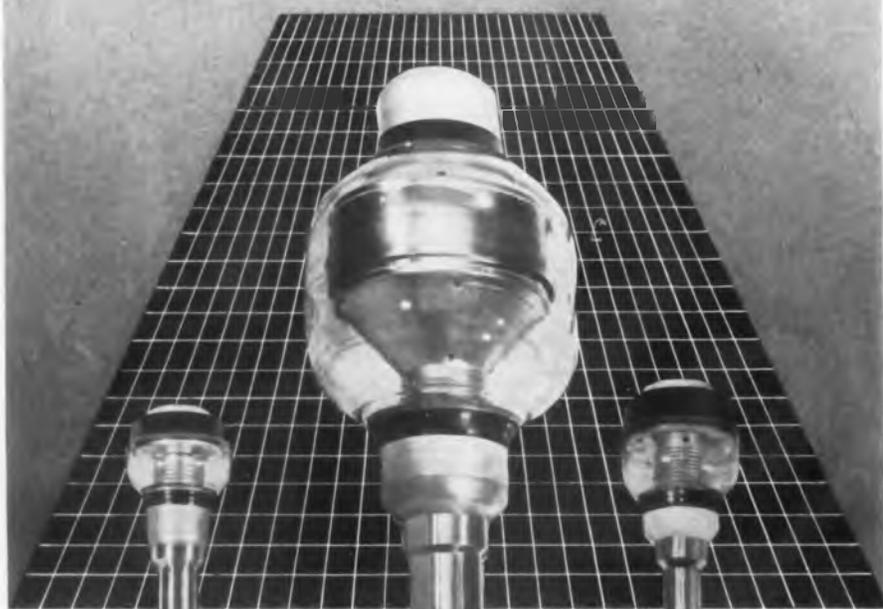
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Mobile Systems

(Continued from page 108)

a rectangle approximately one-half wavelength ($\lambda/2$) by one-quarter wavelength ($\lambda/4$). Therefore, the power at the receiver terminals may be expressed as

$$P_R = 1.64 \times \frac{P}{4\pi D^2} \times \frac{\lambda}{2} \times \frac{\lambda}{4}$$

For the VHF mobile band, where the wavelength is about six feet, the numerical factors reduce this expression to

$$P_R = 21 \times 10^{-9} \times \frac{P}{D^2}$$

D being expressed in miles.

The corrections which must be applied to this basic power relationship are as follows:

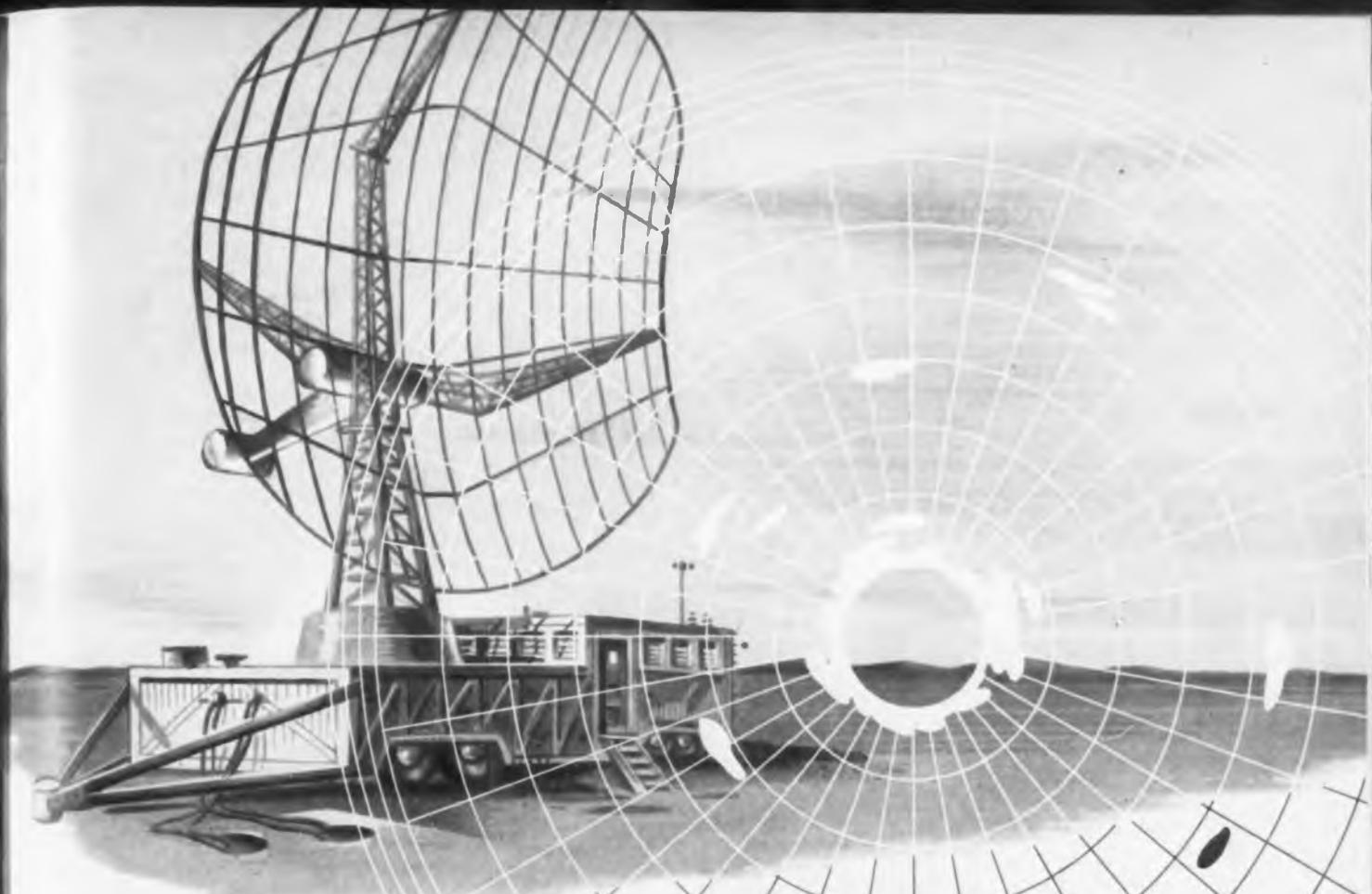
1. Antenna gains and transmission line losses.
2. Propagation characteristics, including type of ground and heights of antennas.

For the type of service under discussion we may assume that in item 1 the mobile antenna will have essentially the properties of a half-wave dipole and no correction need be made for it. The fixed station antenna, however, is usually made to have more directivity in the vertical plane, and this result is often achieved by arranging two or more dipoles end-to-end. The power gain of such a configuration is roughly equal to the number of elements so arrayed, and in practice amounts to a factor of 3. It is assumed that the antennas present a good impedance match to their transmission lines, and that the latter are properly selected with a view to loss factor. Under such circumstances the overall system loss can be approximated by using a factor of $\frac{2}{3}$, and this in conjunction with the antenna gain figure results in a multiplication by two, so that the power received becomes

$$P_R = 42 \times 10^{-9} (P/D^2)$$

and this of course holds for either direction of transmission. Item 2 is a very important consideration and its effects are summarized in the table below for specific conditions representative of those to be encountered under actual operating conditions. The received power as given by the above formula should be divided by the numerical factors shown in this table.

Propagation Correction Factor—
 Vertical Polarization—160 mc
 (Continued on page 386)



Radar Tubes

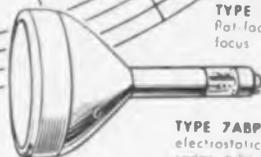
by DUMONT

If you need any radar tube, whether for replacement or for initial equipment, Du Mont offers a complete line. Standard Du Mont high-resolution radar tubes range from five inches in diameter to twelve inches with magnetic deflection and either electrostatic or magnetic focus.*

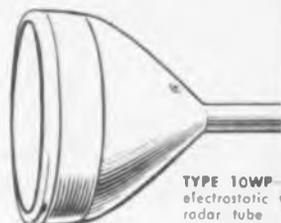
Electrostatic-focus tubes are generally intended for initial equipment where the elimination of the focus coil saves cost, weight, and space. Also, their substantially automatic focus feature even eliminates a front-panel focusing control. Electrostatic-focus tubes are usable for replacing magnetic focus equivalents with slight circuit modifications. All Du Mont tubes exhibit the highest standard of quality. The patented Du Mont electron-lens design makes possible precision manufacturing techniques which allow very tight tolerances to be held. In addition, thorough material processing and comprehensive and rigid quality control assure unparalleled tube-to-tube uniformity. *Du Mont will build, to customer specifications, special radar tubes up to 30" screen diameter.



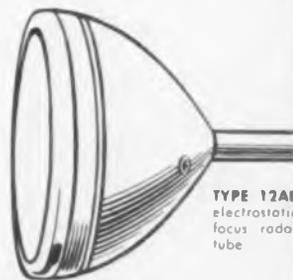
TYPE 5AMP
flat-face, electrostatic focus radar tube



TYPE 7ABP
electrostatic focus radar tube



TYPE 10WP
electrostatic focus radar tube



TYPE 12AE
electrostatic focus radar tube

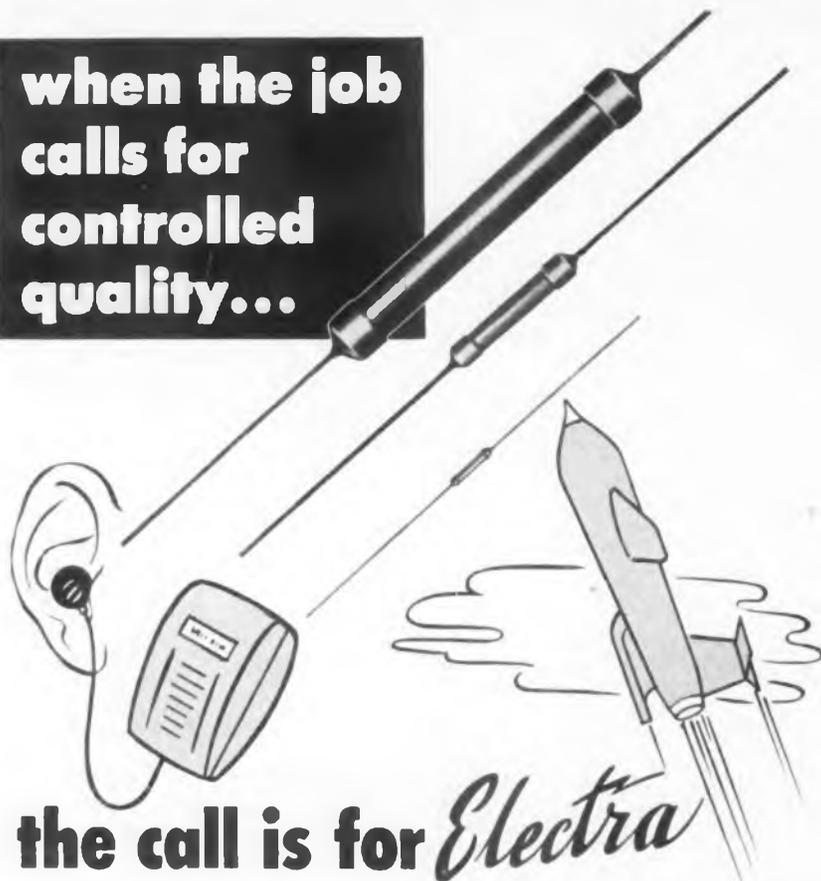
TYPICAL RADAR TUBES AVAILABLE FROM DU MONT (Not a complete listing)

	SFP-7A	SFP-14A	5AMP-	7BP-	7MP-	7ABP-	10KP-	10WP-	10UP-	12SP-	12ABP-
LENGTH	11 1/8"	11 1/8"	11 1/8"	13 1/4"	12 3/4"	13 3/4"	17 1/2"	16 1/2"	17 3/4"	18 3/4"	18"
ANODE VOLTS	5KV	5KV	5KV	7KV	7KV	7KV	10KV	10KV	10KV	10KV	10KV
TYPICAL LINES/ USEFUL DIAM.	450	550	550	550	600	650	650	675	900	625	700
TYPICAL LINE WIDTH	.0095"	.0077"	.0077"	.011"	.010"	.009"	.014"	.014"	.010"	.018"	.016"
FOCUS	MAG.	MAG.	ELECT.	MAG.	MAG.	ELECT.	MAG.	ELECT.	ELECT.	MAG.	ELECT.
REPLACES		SFP-14	SFP-			7MP- OR 7BP-		10KP-			12DP- OR 12SP-

DU MONT

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8 SIZES: 1/8 watt to 2 watts and in two types—coated as well as hermetically sealed. MANUFACTURED TO SPECIFICATION MIL-R-10509A.



Write for complete specifications

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FM Altimeter

(Continued from page 125)

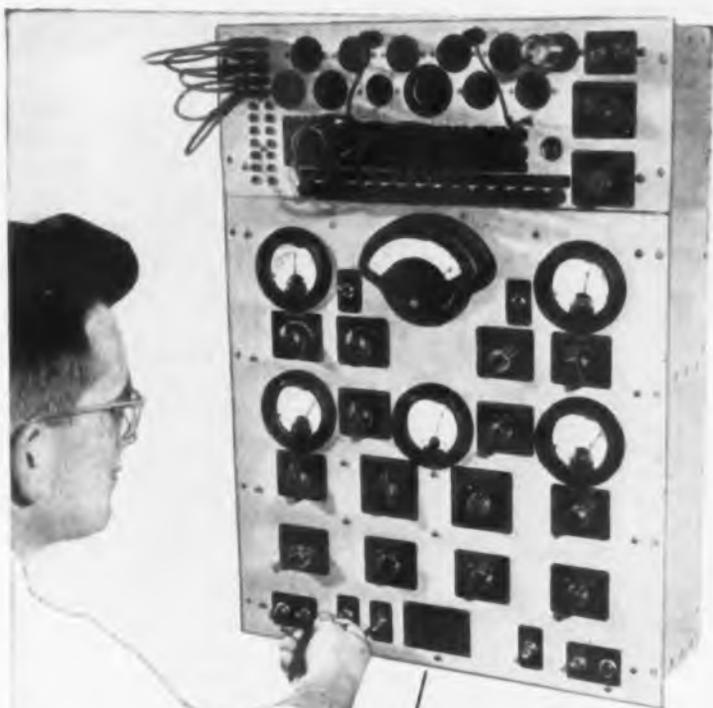
identical, the clipping of the positive cycle is very similar in wave form to the clipping of the negative half cycle. The signal with the negative half cycle clipped when applied to T-3B is not amplified by choosing the correct plate load resistor R17. The result of these two stages makes the input signal limited on the negative half cycle by the cutoff action of the cathode follower T-3A and on the positive half cycle by the cutoff action by the cathode driven amplifier T-3B. Since neither of these tubes is driven into grid current region nor operating at different bias levels, their operating axis does not shift. Thus, symmetrical clipping and limiting is achieved.

A 6AU6 tube acts as a plate voltage limiter. When the signal applied to the grid of T-4, greater than 1.5 rms volts, the positive half cycle is limited by the grid current flow and the negative half cycle is clipped by driving the tube into cutoff, thus producing a constant amplitude square wave output. In order to stabilize the voltage controlling the output, a voltage divider across B+ maintains the screen voltage at 27 volts and sets the cutoff of the tube. The output must pass a 40 kc square wave with a fair degree of fidelity.

A high plate load is desirable for plate current saturation, while a low output impedance is required for frequency response. This is achieved by using a 330K dropping (R_{21}) from the 250 B+ source, rather than a lower value resistor from the 150 B+ source. Both methods would give identical plate voltages to T-4, but the former method permits the usage of a high resistor for plate current saturation. The plate is shunted by R_{22} which presents a low impedance output as compared to R_{21} , if R_{22} was removed. The output of this stage does not vary with input of 0.002 rms volts to 0.012 rms volts at 1 kc to the amplifier input. The ability to maintain constant output with a 6 to 1 change in input is aided by R_{22} , the grid limiting resistor.

Frequency Counter

The function of the frequency counter stage is to develop a negative voltage which is proportional to frequency of the applied square wave limited signal. This is accomplished by completely charging and discharging the counter capacitors C_{13} and C_{14} during each cycle of the applied square wave voltage. When



LABORATORY
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ELECTRON
TUBES

Descriptive literature on Model 686
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Instruments

WESTON

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Tests tubes under actual circuit operating potentials.

Tube characteristic operating curves can be plotted for comparison with manufacturer's specifications.

Transconductance can be measured directly without need for null adjustments or correction factors.

Voltage Ratio method of measuring transconductance meets the IRE Standard 50 IRE 7.52 paragraph 7.2.2.4.

Completely self-contained with all necessary power supplies, meters and switching for performing short tests, static characteristic measurements and grid to plate transconductance measurements.

A well filtered d-c power source is supplied, making it possible to test tubes with d-c potentials which can be accurately adjusted to correspond to actual circuit voltage operating conditions.

Precision meter shunts and multipliers are wire wound to 0.5 per cent accuracy.

Special circuitry makes meter loading effects negligible.

Regulated grid bias supply keeps this most critical voltage constant. Plate and screen supplies do not affect grid bias setting.

Wide range of measurement of transconductance provides good readings on all tubes from small subminiature types to large power control types. The true transconductance is obtained on all triodes and pentodes, including low mu control tubes having plate resistance as low as 250 ohms.

Transconductance ranges are available in the following combinations of range and grid signal voltages:

Grid Signal	1.0	0.5	0.2	0.1	Volts
Gm x 1	300	600	1500	3000	Micromhos
Gm x 10	3000	6000	15000	30000	Micromhos

The Gm x 1 range is especially useful in the measurement of subminiature tubes having low transconductance.

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7049

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CUTS and
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Braided Cord With Rubber Jacket

FM Altimeter

(Continued from page 172)

the positive going square wave is applied, C_{13} and C_{11} received a negative charge because T-5B conducts. This negative charge accumulated on C_{13} and C_{11} , plus the negative cycle of the square wave are applied to the cathode of T-5A tube. This discharges the counter condensers through R_{30} , shunted by C_{13} which smooths out the ripple voltage across R_{30} . Since the number of discharges per second is equal to the applied frequency, the average current passing through R_{30} will be proportional to frequency. Hence a negative dc voltage will be developed across R_{30} .

Inherent problems exist which tend to make it difficult to obtain a linear count and still be able to set the starting count and the final count. The variable counter capacitor C_{12} was chosen to be small and equal at maximum capacity to the stationary one C_{11} . This meant that at the high end of count, a large range of control existed. In return, the discharge resistor R_{30} had to be high in order to begin the count and obtain a fast rate of rise at low frequency. With B+ voltage off and filament voltage present, the counter output indicated a minus 1.5 volts. This voltage is composed of three sources of current through R_{30} (Fig. 6).

1. A circulating counter current from T-5A and T-5B
2. Grid current from T-6
3. Leakage current in T-5 (from plate to cathode to filament)

Relative Magnitudes

The relative magnitudes of these three currents were computed by voltage readings rather than use a current meter. Breaking the wire at point 1, the counter output voltage dropped from minus 1.5 volts to minus 0.82 volts, indicating a circulating current in the diodes T-5A and T-5B to be 0.566 μ a. Breaking the wire at point 2, the voltage dropped from minus 0.82 volts to minus 0.016 volts. This showed a grid current flow of T-6 to be 0.670 μ a. The grid current is well within the rating of the tube even though the grid leak resistor R_{30} is very large. The leakage current of T-5A which flowed from plate to cathode to filament to ground and back to the plate through R_{30} was 0.033 μ a. In order to reduce the residual voltage developed across R_{30} a source of bias voltage had to be introduced (Continued on page 382)

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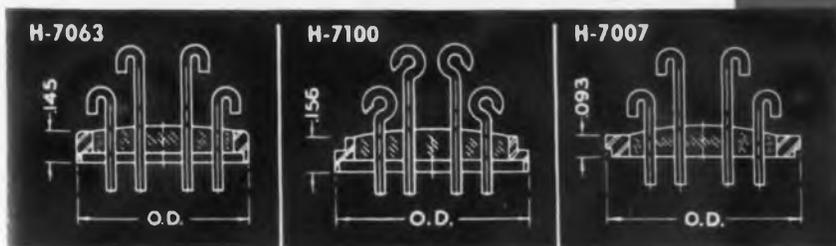
*VAC-TITE is HERMETIC's new, vacuum-proof, compression-construction, glass to metal seal. In addition to special shapes, many standard sizes such as .800 O.D. and .900 O.D. multi-terminal headers and a large variety of individual terminals are available in VAC-TITE Compression Seals.

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CHESTER CABLE CORP.
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Conelrad

(Continued from page 105)

terms that could be reduced to field ratios. At this point in the development work, it became possible to conduct observations both on the ground and in an aircraft of such a contemplated system. Three standard broadcast stations: WNBC, WABC, and WOR made the necessary transmitter changes and adjustments to permit rough synchronous operation (± 3 or 4 cycles) on 640 kc utilizing a common program source. Unfortunately, equalization of their radiated powers was not feasible on this test. Although both WOR and WABC were using powers in the range from 5 to 10 kw as against about 2 kw at WNBC, the antennas used by the first two stations mentioned were of the auxiliary variety and their efficiencies were quite low. WNBC was able to use its main antenna system for the test with consequent better efficiency. This information was not available at the time of the test.

Intelligible Signal

Observations on the ground showed that for the most part, an acceptable 100% intelligible signal was provided over the areas of metropolitan New York City that could be covered by the mobile units during the test period. An interesting fact brought to light was that the distortion bands inside the 2:1 field ratio zones were not capable of detection by the human ear. It was mentioned earlier that the r-f carrier frequencies were not in strict synchronism. This resulted in displacement of the distortion bands at a sufficient velocity that they could not be discerned by listening to ordinary speech. Of course, the beats between the carriers were present but this did not appear to appreciably destroy the intelligibility.

In the air, observations were commenced from a 15,000 ft. altitude at a distance of about 100 mi. A fairly good bearing indication was noted on the aggregate signal from the three stations at that point. This was to be expected in view of the small angle of separation of the stations. It was expected that as the aircraft approached New York City, the azimuth indicator on the ADF would become erratic and inaccurate. A constant check on the position of the aircraft was obtained by means of radar. Instead of becoming erratic, the homing signal became more useful and the pilot, following instructions of the radio opera-

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B-83—115 Volt 400 cycle single phase centrifugal blower. Delivering 140 CFM of air against 2" of water operating at 6500 RPM minimum.



A08C1—2 phase control motor for operation on 60 cycle supply 115 Volt on one phase and 40 Volt on control phase. 3.0 oz/in starting torque on above voltages. 1500 RPM. No load speed.

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450C-1—115 Volt 400 cycle phase axial-vane type blower delivering 200 CFM at 6 S.P. Weight approx. 5 lb.



A15BD—115 Volt 400 cycle single phase double blower delivering 26 CFM total at 0 static. This unit has special mounting brackets.

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The features of all AIR MARINE motors include Stainless steel thru-bolts, Rigid die-cast aluminum housings, and Riveted stator to insure Extra-Rigid Construction assuring positive bearing alignment and uniform air gap. Motors are protected against humidity and fungus growth—can be mounted in any position—are equipped with ball bearings using lubricants for high and low temperatures—meet all AN specifications.



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A15BF-15—50 to 800 cycles—single winding available with axial fan or centrifugal blower.

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A15CF10—50-60 and 320-1000 cycle operation dual winding.

Showing comparison between our large and small blowers



The motors and blowers on this page are representative of the many varied models available. Detailed information specifications and performance data on all the above units available on request.

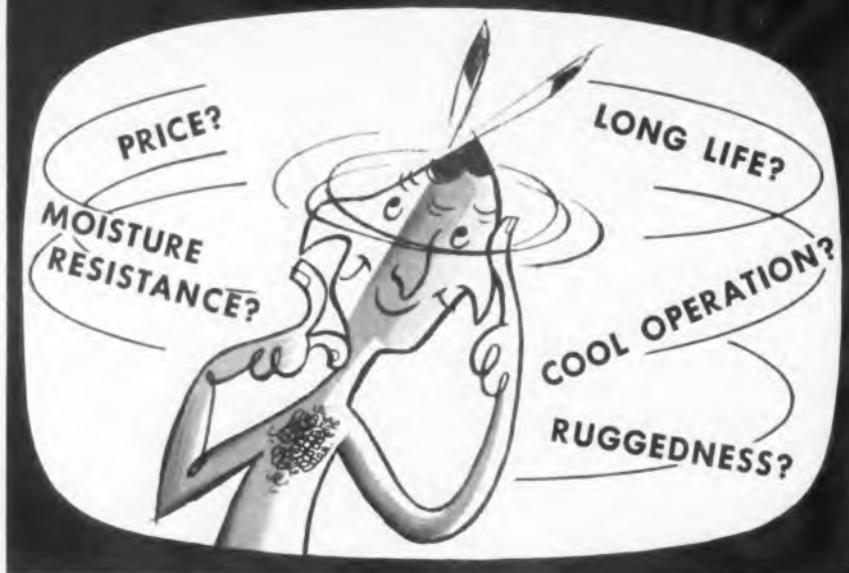
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CERAMICHIEF—A ceramic-encased paper tubular. Here's quality at a price. Try it for high moisture resistance—long life. Wax, Resinex, or Mineral Oil impregnated. 85° C operation. The Ceramichief is ideal for plastic imbedment circuitry.

BUCKSKIN—An economical cardboard-encased paper tubular. Gives full Sangamo quality in applications where costs are a problem. Wax, Resinex, or Mineral Oil impregnation. Built to pass requirements of RTMA Spec. REC-118A.



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SANGAMO ELECTRIC COMPANY

SC54-10

MARION, ILLINOIS

178 For product information, use literature card on last page.

Conelrad

(Continued from page 176)

tor navigator "homed" directly over the antenna system of WNBC as indicated on the radar screen. The route of the aircraft followed the track indicated in Fig. 5.

At the point indicated by the circled X, the ADF indicator shifted from WNBC to WOR. Subsequent information obtained on the power and probable antenna efficiencies of the stations involved in this test resulted in calculations of the field ratio of 2:1 at the point where the ADF shifted from the control of one station to the other. This value, of course, has no relation to the same figure as it relates to the distortion zones, but is a function of the automatic direction finder unit itself. Although a 6 db equalization of fields does not appear to be particularly difficult, a closer examination of the various metropolitan areas and their broadcast station potentialities in this respect seemed to urge a further study of other possibilities. The most attractive that came to attention was merely a slight variation of the straight synchronous mode whereby instead of all the transmitters being on the air continuously, with a common program, they would be switched on and off in a random sequence. Such a procedure immediately eliminated any major concern over distortion zones, beats between carriers, equalization of radiated power or any other such features which tend to complicate a system. Preliminary tests utilizing the same three stations mentioned before, gave good ground coverage and in addition made orientation of an aircraft by means of the ADF extremely difficult within any reasonable period of time.

Results Confirmed

Subsequent tests using a greater number of stations confirmed the results obtained, not only as to ground coverage but for both long range and short range navigational deception. During the past few years the system has been initiated throughout the entire country, and today there are prepared for instant operation over 200 clusters of stations and approximately 500 single stations in the "ON-OFF" category.

A discussion of this particular Conelrad system would be incomplete without a description of the "Conelrad Sequential Switch" designed and installed by Ross H. Be-

(Continued on page 371)



GET LONGER . . . TROUBLE-FREE LIFE AT NO EXTRA COST WITH CBS-HYTRON CTS-RATED* 6CU6

Why the CTS-Rated* 6CU6? The 6CU6 horizontal amplifier is rated the same as the 6BQ6GT . . . is electrically interchangeable with it. *But . . .* because the 6CU6 is rated for continuous television service, it will *live* under 6BQ6GT maximum ratings.

The 6BQ6GT is a good tube. (Heck, CBS-Hytron originated it.) But, it was designed for 10- and 12-inch TV sets. Today it carries the load in 21-inch sets. Furthermore, it must combat the accumulated dissipation caused by: 1. Line-voltage variations. 2. Faulty receiver adjustments. 3. Shifting values of components due to age

and overload. Result: The 6BQ6GT is often operated above maximum ratings.

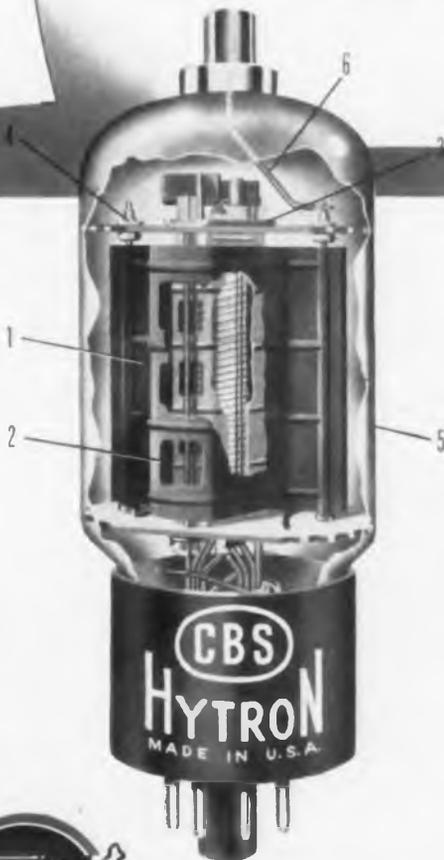
Obviously, a brand-new design . . . not just an improved 6BQ6GT . . . was needed. The husky CBS-Hytron 6CU6 (See Mechanical Features) is the answer: a premium-performance tube *at no extra cost*. CTS-Rated, it offers generous safety margins for plate dissipation . . . high-voltage insulation . . . and high-line protection. Note also the bar graph showing much larger plate and envelope areas of CBS-Hytron 6CU6.

In the 6CU6 . . . another CBS-Hytron first . . . high voltage and heat meet their match. You forget run-away plate current, high-voltage arc-overs, and shrinking TV pictures. You gain by longer life . . . minimized service . . . happier customers. Try the CBS-Hytron 6CU6 today.

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... now available for
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Combined data sheet for
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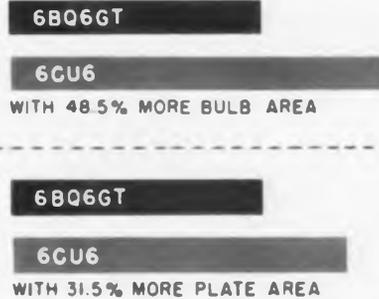
MECHANICAL FEATURES OF 6CU6

1. Heavier-gauge plate with large radiating fins.
2. Vents in beam plates and plate aligned for maximum radiation of heat from grids.
3. Anti-arc rings for uniform distribution of electrostatic field.
4. Anti-arc mica eyelets.
5. T-12 transmitting-type bulb.
6. Plate connection "hard-soldered" and positioned to reduce heat conduction and arcing.



*Rated for Continuous
Television Service

6CU6 OFFERS GREATER DISSIPATION RESERVES



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"Lipstik" MICROPHONE



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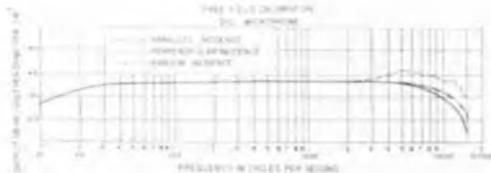
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MAGNIFICENT IN QUALITY...

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These are the qualities that set ALTEC'S new "LIPSTIK" apart from all other microphones.

The "LIPSTIK" is the answer to the universal demand for a microphone small in size ($\frac{3}{8}$ " in diameter and 3" long)—versatile in use (equally efficient for use on a stand, in the hand or clipped to the lapel)—superb in quality (see the incomparable frequency response which is unconditionally guaranteed).



This microphone response curve is in agreement with measurements made by General Radio Company and other major acoustical laboratories.

The "LIPSTIK" is a refinement of ALTEC'S famed 21B condenser microphone.



Order as an M-20 system, which includes the 21C microphone — 165A base — P525A power supply, and all attachments.



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Feedthru Capacitors

(Continued from page 101)

IV. Intermediate length — Not in vicinity of a Quarter or Half Wave Length Point.

$$V_n/V_o = (Z/2) \sqrt{\sinh^2 A + \sin^2 B} \quad (1)$$

For the particular case of 30° from a half-wave point
($B = 180 \times n \pm 30$ degrees)

$$V_n/V_o = (Z/4) \sqrt{4 \sinh^2 A + 1} \quad (2)$$

Equation 28, the lossless case has been plotted in Fig. 4, with B in degrees. These curves repeat every half wavelength.

The voltage attenuation for the lossless half wavelength, quarter wavelength, and 30 degree cases becomes

$$\begin{aligned} \lambda/2: V_n/V_o &= 1 \\ \lambda/4: V_n/V_o &= Z/2 \\ 30^\circ: V_n/V_o &= Z/4 \end{aligned}$$

The 30 degree and quarter wavelength cases, with dissipation, may then be expressed as correction factors for the lossless cases.

$$30^\circ \text{ Correction for dissipation} = \frac{1}{\sqrt{1 + 4 \sinh^2 A}} \quad (33)$$

$$\lambda/4 \text{ Correction for dissipation} = \frac{1}{\cosh A} \quad (34)$$

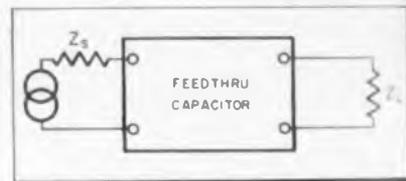


Fig. 12: Schematic form of feed thru cap

The attenuation for the 30° and quarter wavelength cases with dissipation may then be found by multiplying the value for the lossless case as given by Eq. 28 or Fig. 8 by the correction factors at Eqs. 33 and 34.

The 30 degree and quarter wave correction factors, and the half-wave attenuation, which cannot be expressed as a correction factor independent of Z have been plotted in Fig. 6. Correction factors for other intermediate points are also shown.

Figs. 4 and 6 may be used to plot the attenuation characteristic of a capacitor to a satisfactory degree of accuracy by plotting the lossless curve (from Fig. 4) over the range of interest and modifying the curve to fit the points determined by Fig. 6. For greater accuracy more points may be calculated by Eq. 31. Figs. 7 and 16 show the calculated characteristic for impedance ratios $Z = 20$ and 150, and dissipation factors of 0.1 and 0.01, up to the point at which

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One of the features of the voice transcriber shown below is a manual control knob for regulating the voice playback speed. The designer of the unit wanted to locate this speed control knob where it would be convenient to operate and where it would be hidden from view when the cover of the machine was closed. This meant mounting the control knob shaft and the speed regulator shaft at right angles to one another. After considering various ways of coupling the two shafts, the designer chose

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Feedthru Capacitors

(Continued from page 180)

the capacitor is two wavelengths long.

Fig. 7 illustrates the importance of dissipation in minimizing harmful resonant effects. The more lossy the capacitor, the better the operation. From Fig. 6 it can be seen that a value of A of 0.8 to 0.9 will give a halfwave attenuation ratio equal to the quarter-wave attenuation in the absence of loss. This value of A corresponds to a dissipation factor of about 0.55.

Experimental Check

Before establishing design criteria it is desirable to illustrate the extent to which the foregoing analysis is verified by measurements on typical capacitors made by several different manufacturers.

Measurements were made in the manner illustrated by Fig. 9.

Insertion loss was measured relative to a 100 ohm impedance level by comparison of the capacitor with a direct connection. The measured data are compared in Figs. 5 and 8 with curves calculated from Figs. 6 and 4, using the measured dimensions and

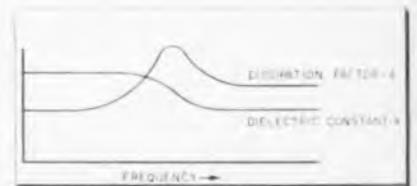


Fig. 13: Molecular resonance shown graphically

resonant frequency, and the dissipation factor calculated by Eqs. 25 and 29 from the measured half-wavelength attenuation.

Several of the tubular feedthru capacitors tested had eyelets assembled to the ceramic tube. After the eyelet had been soldered into its mounting hole in the sheet metal a decrease in low frequency capacitance was noticed, which averaged 10%, and was probably due to some localized melting of the tinning on the silvered surface. The measured capacitance after assembly was used in the calculations.

For comparative purposes, three button feedthru capacitors, both ceramic and silver-mica were measured. The results are plotted in Fig. 9 and are compared with calculated curves for lumped capacitances.

In general, satisfactory correlation was obtained between measured and (Continued on page 374)



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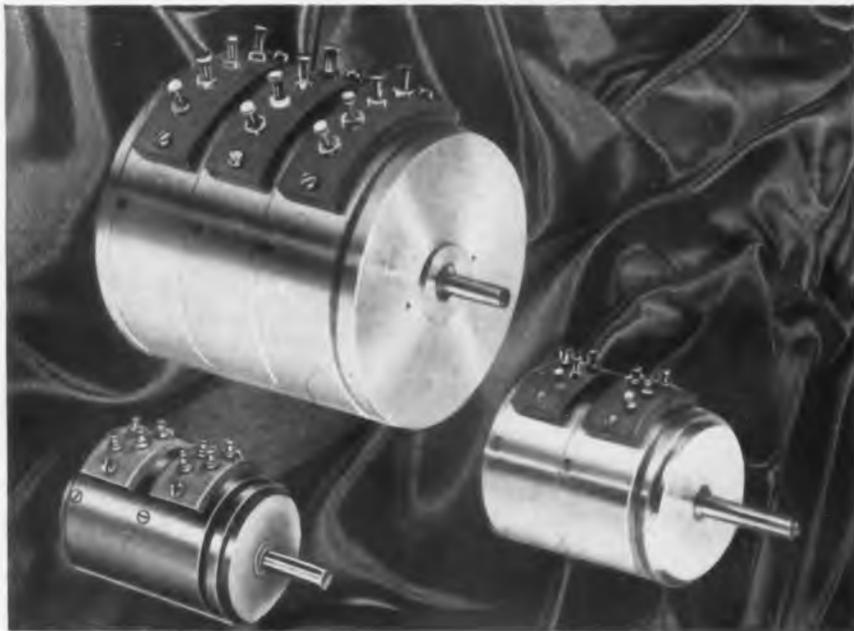
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Fairchild makes a complete line of precision potentiometers to fill all your needs—linear and nonlinear potentiometers, single or in ganged combinations . . . single-turn, helical and linear motion . . . with servo or threaded bushing mounts . . . and with resistance elements to meet your requirements.

Fairchild guarantees accuracy of $\pm 1\%$ in nonlinear types and $\pm 0.5\%$ in linear types. Highly accurate production methods and close mechanical tolerances, plus thorough type-testing and quality control, assure high resolution, long life, low torque and low electrical noise level in every Fairchild potentiometer. For more information, or for help in meeting your potentiometer problems, call on Fairchild Camera & Instrument Corp., Potentiometer Division, 225 Park Avenue, Hicksville, L. I., N. Y., Department 140-53E.



Voltage Regulator

(Continued from page 108)

ing point. The 10K, 20 watt resistor R_7 , provides approximately equal loading for both supplies in the absence of working loads. It may be omitted if desired. As in the circuit described earlier, circuit values were chosen to yield an output of 300 volts with the adjustments providing a 100 volt range; i.e., 250 to 350 volts. If greater, or lower, output voltage range is desired, the resistors supplying the sampling voltages, R_1 , R_2 and R_3 for the positive voltage output and R_4 , R_5 , and R_6 for the negative output may be reapportioned. The output ranges will vary in accordance with the ratio of the potentiometers, R_2 and R_3 , to the total resistance in the circuits.

Operation Theory

The theory of operation is straightforward; consider first the -300 volt supply. Any variation of the output results in the cathode of V_{1B} sampling approximately half of the change while the grid of V_{1B} sees the full change because it is referred to the OA2 glow-discharge voltage reference tube, V_1 . The difference of these two changes causes a variation of the plate current of V_{1B} . This variation appears at the cathode of V_{1A} . At the same time, the grid of V_{1A} sees one-half of the reference voltage plus the total voltage change across R_7 . The direction of these voltage variations is additive to the change of the cathode voltage of V_{1A} . Considerable gain is thus realized and the plate current of V_{1A} changes in accordance with the preceding. The change of plate current of V_{1A} causes a change of voltage across R_8 , the plate load resistor. This voltage change causes the grid of the 6AS7G pass tube, V_{1B} , to vary and thereby varies the pass-tube's effective resistance. The change of effective resistance of the pass tube and the consequent change of voltage drop across it, maintains the voltage drop across the load at the desired constant voltage.

In the case of the $+300$ volt supply, the grid of V_{2B} sees a portion of the change in output voltage as referred to the OA2 glow-discharge voltage reference tube, V_2 . This causes the plate current of V_{2B} to change. This change appears at the cathode of V_{2A} . At the same time the grid of V_{2A} also sees this change. The two changes are additive and the net result is as described for the -300 volt supply. Measurement of the differential voltage may be a

(Continued on page 393)

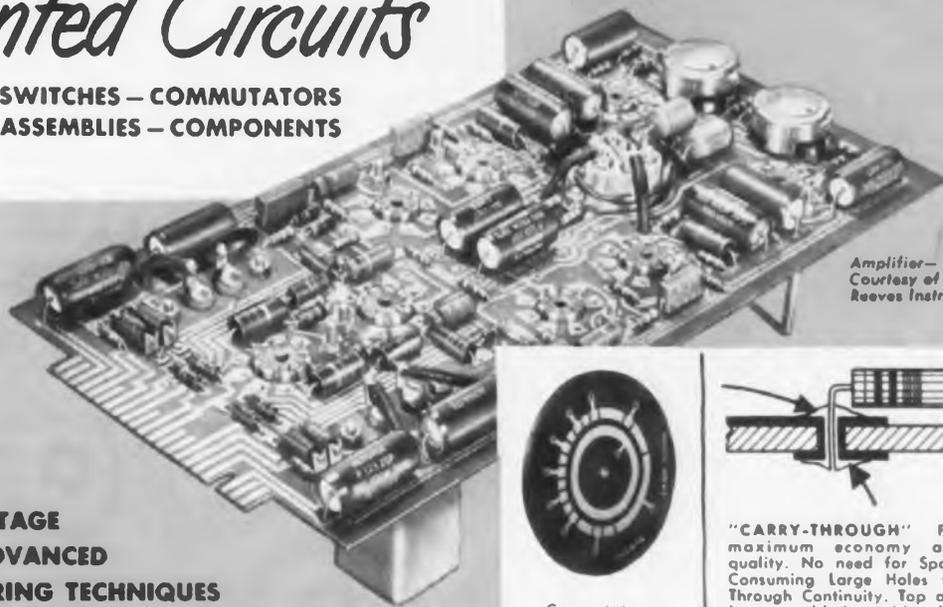
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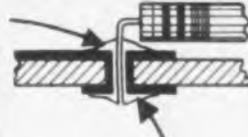
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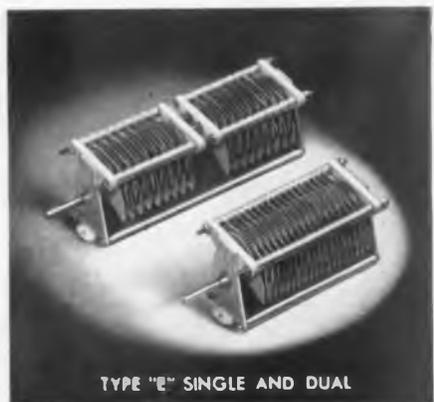
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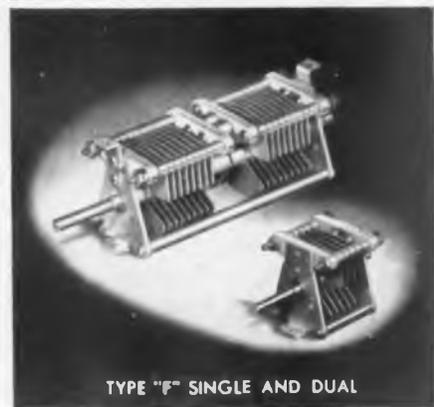


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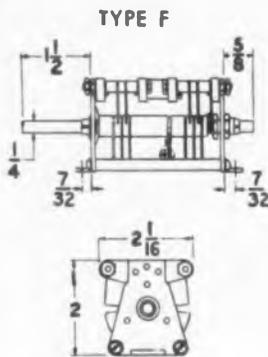
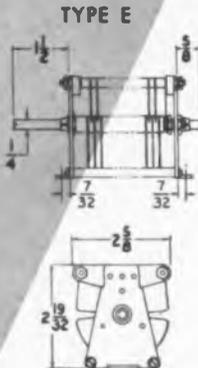
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Ferrite Characteristics

(Continued from page 112)

presents a condition of high loss. The circuit engineer will rarely observe this type of loss unless large bodies of ferrite are used at high frequencies.

The *hysteresis loss* in ferrites is similar to that found in magnetic metals but may be of greater magnitude when experienced at radio frequencies. Ferrites saturate more easily than metals; for example, a nickel ferrite saturates with about 3,000 gauss while annealed iron requires 14,000 gauss for saturation. One must therefore expect hysteresis loss to occur with relatively low values of induction. Also, since ferrites are used at high frequencies, the magnitude of the hysteresis loss will be greater if saturation occurs, because the hysteresis loss is proportional to frequency.

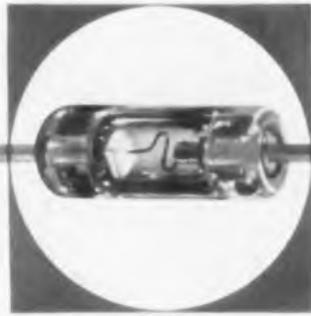
The dielectric constant of ferrites varies over a wide range of values. Ferrites having a high volume resistivity will have a low dielectric constant (as low as 10), while those having a low value of volume resistivity will have a high dielectric constant (in excess of 100,000). While the *dielectric loss* in ferrites is usually small, it may be observed when one uses a ferrite having a low resistivity in close proximity to the winding.

In a brief way we have discussed the various types of losses that can occur in ferrites, but the applications engineer will want to know how the *combined losses* will influence the circuit performance. Fig 4 shows how the ferrite composition influences the Q value of a typical circuit measured at 500 kc.¹ The contour lines are plotted in relative Q value of the coil and core combination. The maximum Q value for the system is shown as the small contour marked 100. It is very unfortunate that the composition for maximum Q value does not coincide with that for maximum μ (also indicated on the diagram), so we can see that certain compromises must be made.

Magnetostriction

Magnetostriction is the property of a body to change its physical dimensions in the presence of a magnetic field. If we have an elongated body of nickel ferrite, for example, and pass a dc field longitudinally thru it, there will be a minute change in the length of the ferrite. This is known as longitudinal magnetostriction.

Hughes Fusion-Sealed Germanium Diodes



ACTUAL DIMENSIONS
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 AMBIENT OPERATING
 TEMPERATURE RANGE:
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Hughes Point-Contact Germanium Diodes are fusion-sealed in a one-piece, gas-tight glass envelope . . . impervious to moisture, fumes or other external contaminating agents. The flexible dumet leads are especially suitable for spot-welding; or they can be iron- or dip-soldered as close as 1/8 inch to the diode body—without special precautions.

The germanium crystal is permanently bonded to one lead, the cat whisker is welded to the other, and the point of the cat whisker is welded to the crystal. Hughes diodes are highly resistant to shock and vibration. Positive mechanical stability is achieved without risking contamination from fluxes, waxes or impregnants. And—each diode is thoroughly tested to ensure the stability of

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DESCRIPTION	RETMA or Hughes Type	Clip-In Hughes Type	Peak Inverse Voltage† (volts)	Absolute Maximum Inverse Working Voltage (volts)	Minimum Forward Current @ +1V (mA)	Maximum Inverse Current		Other Characteristics
						@ -50V (mA)	Other (mA)	
HIGH PEAK	1N55B	HD 2052	190	150	5.0		0.500 @ 150V	
	1N68A	HD 2053	130	100	3.0		0.025 @ 100V	
1 MEG TYPES	1N67A	HD 2054	100	80	4.0	0.050	0.005 @ 5V	
	1N99	HD 2055	100	80	10.0	0.050	0.005 @ 5V	
	1N100	HD 2056	100	80	20.0	0.050	0.005 @ 5V	
500K TYPES	1N89	HD 2057	100	80	3.5	0.100	0.008 @ 5V	
	1N97	HD 2058	100	80	10.0	0.100	0.008 @ 5V	
	1N98	HD 2059	100	80	20.0	0.100	0.008 @ 5V	
	1N116	HD 2060	75	60	5.0	0.100		
	1N117	HD 2061	75	60	10.0	0.100		
GENERAL PURPOSE	1N118	HD 2062	75	60	20.0	0.100		
	1N90	HD 2063	75	60	5.0	0.500		
	1N95	HD 2064	75	60	10.0	0.500		
JAN TYPES	1N96	HD 2065	75	60	20.0	0.500		
	1N126*		75	60	5.0	0.850	0.050 @ 10V	Non-JAN equivalent, HD2070; clip-in, HD2066
	1N127**		125	100	3.0	0.300	0.025 @ 10V	Non-JAN equivalent, HD2071; clip-in, HD2067
COMPUTER TYPES	1N128***		50	40	3.0		0.010 @ 10V	Non-JAN equivalent, HD2072; clip-in, HD2068
	1N191	HD 2077		§	5.0	400K Ω min. between -10 and -50V @ 55°C §		Back resistance recovers to 50K Ω and 400K Ω (200K Ω for 1N192) in 0.5 μ sec and 3.5 μ sec max., respectively. †
	1N192	HD 2078		§	5.0	200K Ω min. between -10 and -50V @ 55°C §		
HD2013				50 @ 1V & 1 @ 0.35V	0.120 @ -3V	0.2 μ sec recovery time. †		
UHF	HD2014				50 @ 1V & 1 @ 0.35V	0.60 @ -6V	0.2 μ sec recovery time. †	
	HD2016A				UHF MIXER DIODE			
MISCELLANEOUS	HD2051		125	100	4.0	0.050		1N63 equivalent.

† That voltage at which dynamic resistance is zero when back voltage rises linearly at 90v/sec.

‡ Back Recovery Time is measured with a forward pulse of 30mA, followed by a reverse pulse of .35 volts. Loop resistance of test circuit 250 Ω max.

§ Recovery time is that point at which the diode voltage reaches -1V after the initiation of a 6V back pulse through 20K Ω from an initial 1 mA forward bias. Total shunt capacitance is 20 μ sf.

¶ Tested at 55°C. Test voltage is a continuous 60 cps sine wave. Peak Reverse Voltage across the diode is 70V. Peak Forward Voltage not less than +2V or Peak Forward Current not less than 20 mA, whichever occurs first.

* Formerly 1N69A.

** Formerly 1N70A.

*** Formerly 1N81A.

Descriptive Bulletin SP2A is available on request.

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Ferrite Characteristics

(Continued from page 186)

tion. If the length increases when the field is present the magnetostriction is said to be positive. If the length decreases when the field is applied the body is said to have negative magnetostriction. Fig. 5 shows that ferrites can have both positive and negative magnetostriction and indicates the composition region for each. There is a region in the system having zero magnetostriction as shown.

When the driving flux is produced by an alternating current, the sign of the magnetostriction is unimportant and we prefer to use the negative magnetostriction ferrite (50 NiO-50 Fe₂O₃) because it is easier to produce and has a higher sensitivity than the positive magnetostriction ferrite.

Applications

TV Components: Ferrites for TV components are the "bread and butter" of the ferrite industry, comprising the large bulk of the manufactured ferrites.

Metals, even when laminated, have excessive eddy current loss when used as a magnetic core for TV components handling the horizontal scanning frequency of 15.75 kc and the important harmonics. Ferrites, on the other hand, are ideal for this application because at these frequencies all the losses, except hysteresis, are very small. In order to reduce the hysteresis loss, it is sometimes necessary to provide a small air gap in the ferrite structure.

Transducers for Mechanical Filters: This is a very interesting application where the magnetostriction property of ferrites is utilized as a resonator. Let us assume we have a small bar of magnetostriction ferrite about 1/8 in. in diameter and 1 in. long as the core within a coil, and a permanent magnet so placed as to induce a dc flux in a longitudinal direction along the bar of ferrite. The coil may be tuned by a capacitor to the frequency of a signal source. If the tuning of the circuit is adjusted for resonance as the signal frequency is varied, one finds that at about 90 kc the energy of the coil is absorbed by the core. The core is mechanically resonant and the energy of the coil is used to provide mechanical motion of the core.

This then is a transducer, converting electrical to mechanical energy. The reverse is also true. If

(Continued on page 387)

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PART NO.	FIG. NO.	A	B	C
F-394	1	.080	.050	.025
F-259	2	.230	.120	.060
F-262	2	.375	.1875	.125
F-109-1	2	.870	.540	.093
F-109-2	2	.870	.540	.156
F-109-3	2	.870	.540	.250
F-226-1	2	1.125	.750	.125
F-226-2	2	1.125	.750	.500
F-268-1	2	1.250	.750	.187
F-268-2	2	1.250	.750	.375
F-268-3	2	1.250	.750	.250
F108	1	1.875	1.375	.250



STANDARD CUP CORES

TYPE F-269	TYPE F-270	TYPE F-280 (ILLUSTRATED) TYPE F-211 NO HOLE OR STEP TYPE F-261 WITH HOLE, NO STEP	TYPE F-283 (ILLUSTRATED) TYPE F-210 NO HOLE OR STEP TYPE F-260 WITH HOLE, NO STEP	TYPE F-289

TABLE OF MAGNETIC PROPERTIES OF FERRAMICS®

PROPERTIES	UNIT	A	B	C	D	E	G	H	M-I	I	J	N	O	Q
Initial Perm. at 1 mc/sec.	-	20	95	250	410	750	410	850	550	900	330	200	1000	125
*Max. Perm.	-	100	183	1100	1030	1710	3300	4300	3800	3000	750	500	2000	400
*Sat. Flux Dens.	GAUSS	1500	1900	4200	3100	3800	3200	3400	2800	2000	2900	3000	3600	3300
*Residual Mag.	GAUSS	1000	830	2700	1320	1950	1050	1470	1500	700	1600	2300	1100	1050
*Coercive Force	OERSTED	5.0	3.0	2.1	1.0	.65	.25	.18	.35	.30	.80	.50	.35	2.0
Temp. Coef. of Initial Perm.	%/°C	.15	.04	.40	.30	.25	1.3	.66	.80	.30	.22	.14	.48	.10 max
Curie Point	/°C	300	260	330	165	160	160	150	125	70	180	290	140	350
Vol. Resistivity		High	Med.	Med.	High	Med.	High	Med.	Med.	Med.	High	High	Med.	High
Loss Factor:	$\frac{1}{\mu \cdot Q}$													
At 1 mc/sec.	-	.0005	.00016	.00007	.00005	.00008	.00008	.00030	.0004	.0003	.000055	.000035	.00025	.000024
At 5 mc/sec.	-	.0007	.0011	.0008	.0012	.0020	.00075	.00155	.0010	.0050	.0004	.00012	.0030	.00004

*Measurements made on D.C. Ballistic Galvanometer with Hmax = 25 oersteds. Above data is based on nominal values.

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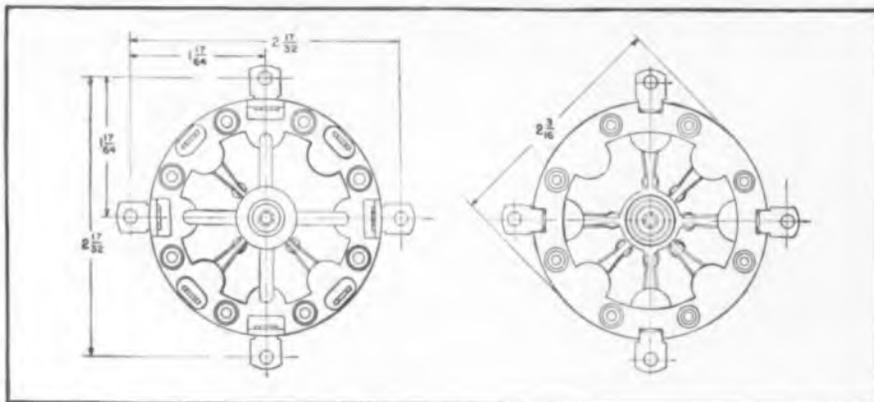
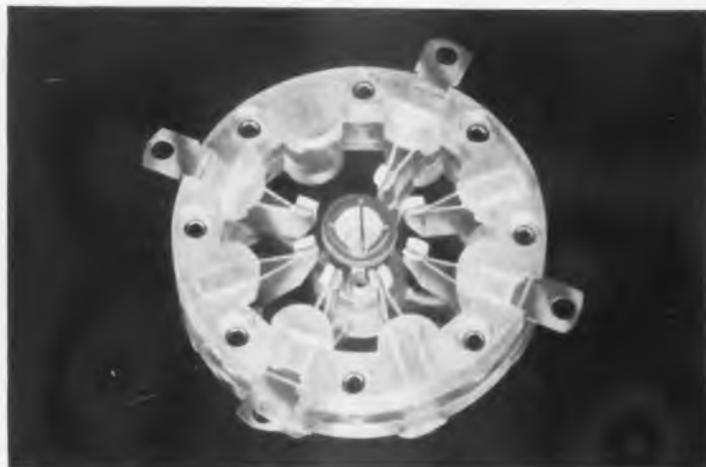


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Transistor Tool Control

(Continued from page 103)

load line, these effects are of secondary importance. Thus, it should be emphasized that transistors when used as switches are not subject to the severe temperature restriction which is generally accorded them and which applies to linear amplifiers. On the contrary, in many applications, such transistor circuits will meet most military specifications. Furthermore, the transistors do not need to be carefully selected. In switching service all transistors of a given type will be completely interchangeable.

An obvious application of this device would be to replace a relay and take advantage of the fact that a transistor can operate at very high speeds and has no contacts to pit or get dirty. The transistor has the limitation that it is only a three-terminal device and, hence, it must have one lead common to both input and output. Furthermore, it effectively carries only the one contact. Nevertheless, many power control circuits can probably be redesigned to incorporate such units.

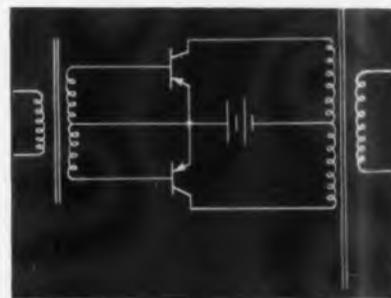


Fig. 3: Variable-frequency power amplifier

Two such switching transistors can be used to make a variable-frequency power amplifier as shown in Fig. 2. If a square wave is applied to the input of this circuit, the two transistors are alternately turned on and off, thereby connecting the supply battery to alternate ends of the winding and, thus, producing a square wave at the output of the same frequency but of a much higher power than the input. One possible application of this device might be as a component in a tape-controlled machine tool. For example, speed information could be recorded on the tape as a square wave of variable frequency; the pick-up head might feed into a transistor amplifier having two or three stages of the type just shown. The output of this amplifier could drive a synchronous motor or the

(Continued on page 380)

Resonator "Q"

(Continued from page 97)

$$Q_c = \frac{\text{energy stored}}{\text{energy dissipated per cycle in coupler alone}}$$

The "energy dissipated per cycle in coupler" in the above expressions is to be understood as representing the energy dissipated in the cavity output transmission line as transformed through the equivalent lossless coupling transformer.

The relationship between the three factors thus defined is:

$$1/Q_c = 1/Q_u + 1/Q_o \quad (1)$$

Also, it can be easily shown that the VSWR r_o in a smooth, uniform, and dissipationless transmission line terminated by the cavity, at the cavity resonant frequency, is related to the Q-factors by

$$r_o = Q_u/Q_o \quad (2)$$

If the coupling of the energy transforming mechanism is greater than critical (overcoupled cavity), which is the usual case in cavity design for microwave oscillator (e.g. in magnetron oscillators), r_o can be obtained from a standard measurement.

Assuming now that the coupled Q, since it is determined by the properties of the coupling system alone, does not change owing to the change introduced in the cavity proper, it is obvious that

$$Q'_u/Q'_o = r'_o/r_o \quad (3)$$

where the primed symbols are used to denote quantities measured after the change was introduced.

In addition, from (1) and (2)

$$Q_c = Q_u/r_o + 1 \quad (4)$$

so that

$$\frac{Q'_c}{Q_c} = \frac{Q'_u r_o + 1}{Q_u r_o + 1} = \left(\frac{r'_o}{r_o}\right) \left(\frac{r_o + 1}{r'_o + 1}\right) \quad (5)$$

Thus, once standard Q measurements on a particular cavity have been performed, its "changed" Q factors can be determined from a knowledge of the VSWR at the resonant frequency before and after the change.

In Fig. 2, the height d is related to the power reflected from the resonator by $d = KP_r$, where K is a factor depending on the characteristics of the crystal diode detector and the fraction of the reflected power reaching the detector, and P_r is the reflected power. Moreover, the relationship between the incident and reflected power in the transmission

(Continued on page 384)

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Transistor Amplifier

(Continued from page 119)

$$P_d - \epsilon' = E_c [I_{c0} + (I_{c0}')_0 + (E_c h_{21}')_0] \quad (2)$$

$$P_o = E_c (I_c)_0 / 2 \quad (2)$$

$$P_o' = E_c [(I_c)_0 - (E_c h_{21}')_0] \quad (2)$$

By way of an example, consider the following transistor

$$(I_{c0})_0 = 10 \mu a \quad (I_{c0}')_0 = 600 \mu a$$

$$1/h_{22} = 570 k \quad 1/h_{22}' = 57 k$$

$$E_c = cJ \text{ volts}$$

$$(I_c)_0 = 4.7 \text{ ma}$$

Then

$$E_c h_{22}' = 0.544 \text{ ma}$$

whence

$$r_1' = 30,000 / (4.7 - .544) = 30,000 / 4.156 = 7220 \text{ ohms}$$

$$r_1 = E_c h_{22} = 30,000 / 4.7 = 6383 \text{ ohms}$$

$$\eta = 50\%$$

$$\eta' = 50 \times (4.156 / 5.844) = 35.5\%$$

$$P_{dc} = 30 \times 4.7 = 141 \text{ mw}$$

$$P_{dc}' = 30 \times 5.844 = 175 \text{ mw}$$

$$P_o = (30 \times 4.7) / 2 = 70 \text{ mw}$$

$$P_o' = (30 \times 4.156) / 2 = 62.2 \text{ mw}$$

Collector Current

It will be noted from the above that collector current rises while the power output and efficiency fall as the temperature is increased. Also a higher value of load resistance is needed. It is best to design, then, for the high-temperature case, since dissipation is at the maximum for this condition. If such a transistor is now operated at normal temperatures, it is not possible to swing the collector current to its maximum extent. Thus, the emitter current swing should be reduced and the transistor operated at reduced collector efficiency. Also, if constant power output is required over the entire temperature range, some means must be provided to reduce the signal swing at low temperatures.

Temperature Shift

In addition to the change in the collector family there is also a temperature shift in the $V_c - I_c$ curves. These curves do not change their shape but move downward as temperature shift in the $V_c - I_c$ curves. mately 0.003 volt/°C increase in temperature. This has comparatively little effect on Class A amplifiers but is of considerably greater importance with Class B operation.

Part Two will appear
in the July issue



TELE-TECH's 1954 ELECTRONIC INDUSTRIES DIRECTORY

Compiled by the editors of TELE-TECH & ELECTRONIC INDUSTRIES. June, 1954 by Caldwell-Clements Inc., 480 Lexington Ave., New York 17, N. Y.



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Product Finding Index

A fast reference guide that enables you to find the product you want in the *Product Directory*—quickly. Here's how to use the *Product Finding Index*: (1) Look for the product you want (under the name you ordinarily use to identify it). (2) Turn to the

section number given in the *Product Finding Index*. (3) From the manufacturers listed in this section, select only those with the code letters (listed in the *Product Finding Index*) after their names. These are the manufacturers of the products you want.

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			Crystals, potassium permanganate	25	C	Fungus & moisture-proof treating services	80	H	Indicators, electronic	33	AR
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			Crystals, potassium permanganate	25	C	Fused quartz parts	96	N	Indicators, fluid flow	33	H
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Converters, DC-AC	66	I	Dials, complete	27	F	Flame photometer	53	AK	Holders	25	H
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Converters, field sequential	87	T	Diamonds	49	C	Flexible metal hose	10	AAL	Home sound systems	83	J
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Converters, FM, home	70	N	Dielectric heating	34	D	Fluorescent lights	37	G	Housings, metal	12	S
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Converters, UHF-TV, communications	69	P	Dimmers	37	P	Flux, paste	16	N	Indicator lights	37	Z
Converters, UHF-TV, home	70	O	Diodes, germanium	78	A	Focusing magnets	96	AE	Indicators, antenna position	27	A
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1954 ELECTRONIC INDUSTRIES DIRECTORY

Product Listings

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Acme Teletronix Div., NEA Service, 1200 W. 3rd St., Cleveland 13, Ohio—A.F.K.M.
 Adler Communication Labs., 1 LeFebvre Lane, New Rochelle, N.Y.—N
 Aeronautical Radio Mfg. Co., 155 1st St., Minneapolis, N.Y.—E
 AEROVOX CORP., 740 Belleville Ave., New Bedford, Mass.—A.M.
 Air Associates Inc., Teterboro, N.J.—A.M.
 Airtronix Devel. Corp., 20 W. 22nd St., New York 10, N.Y.—A.I.J.M.
 Alamo Electronics Corp., 1415 N. Brazos St., San Antonio, Tex.—I
 Allied Allegri Machine Co., 141 River Rd., Nutley 10, N.J.—A.J.M.
 Allied Int'l. Inc., 230 Park Ave., New York 17, N.Y.—A.C.D.E.F.L.N.P.Q.
 Allied Radio Corp., 833 W. Jackson Blvd., Chicago 7, Ill.—A.J.
 ALTEC LANSING CORP., 9356 Santa Monica Blvd., Beverly Hills, Calif.—A.D.F.G.H.K.M.Q.
 American Communications Corp., 306 Broadway, New York 7, N.Y.—A.K.
 American Electronic Labs., Inc., 641 Arch St., Philadelphia 6, Pa.—P
 AMPLEX CORP., 934 Charter St., Redwood City, Calif.—A.D.J.K.
 Amplifier Corp. of America, 398 Broadway, New York 13, N.Y.—A.O.Q.
 Ansley, Arthur Mfg. Co., Doylestown, Pa.—A.Q.
 Applegate & Co., C.J., 1816 Grove St., Boulder, Colo.—A.E.P.Q.
 Approved Electronic Instrument Corp., 928 Broadway, New York 10, N.Y.—A.Q.
 R.F. Products, Inc., 7627 Lake St., River Forest, Ill.—A.P.Q.
 Atlantic Electronics Corp., 4 Manhasset Ave., Port Washington, N.Y.—A
 Atomic Instrument Co., 84 Mass. Ave., Cambridge 39, Mass.—P
 Audar, Inc., Box 438, Pasadena, Calif.—A
 Audio Equip. Co., 805 Middle Neck Rd., Great Neck, L.I., N.Y.—A.H
 Audio Instrument Co., 133 W. 14th St., New York 11, N.Y.—H
 Audio Products Corp., 2265 Westwood Blvd., Los Angeles 64, Calif.—A
 Authorized Mfrs. Service Co., 919 Wyckoff Ave., Brooklyn 27, N.Y.—A.J.M.O.Q.R.
 Autocrat Electronics Co., 5024 Elm St., Skokie 8, Ill.—A.I.Q.
 Avion Instrument Corp., 299 State Hwy #17, Paramus, N.J.—E.M.
 Aviantine Labs., Inc., Boonton, N.J.—A
 Barker & Williamson, 237 Fairfield Ave., Upper Darby, Pa.—A
 Bassett Inc., Rex, 1314 NE 17th Court, Ft. Lauderdale, Fla.—A.H.Q.
 Beam Instruments Corp., 350 Fifth Ave., New York 1, N.Y.—A.K.Q.
 Bell & Howell, 7100 McCormick Rd., Chicago 45, Ill.—J.K.
 Bell Sound Systems, Inc., 555 Marlon Rd., Columbus 7, Ohio—A.D.Q.
 Bellant Associates, 4917 W. Jefferson Blvd., Los Angeles 16, Calif.—H.J.M.O.Q.
 BERNDT-BACH INC., Auricon Div., 6916 Romaine St., Hollywood 38, Calif.—A.J.K.M.Q.

Bliss Electronic Corp., Box 123, Sussex, N.J.—A.D.
 Bogen Co., David, 29 Ninth Ave., New York 14, N.Y.—A.D.G.H.J.I.N.Q.
 Bowen & Co., 4712 Bethesda Ave., Bethesda, Md.—A
 British Industries Corp., 164 Duane St., New York, N.Y.—A.Q.
 British Radio Electronics Ltd., 1833 Jefferson Pl., N.W., Washington 6, D.C.—A.Q.
 Broadcast Equip. Spec. Corp., 135-01 Liberty Ave., Richmond Hill 19, N.Y.—A.M.
 Brociner Electronics Lab., 344 E. 32 St., New York 28, N.Y.—A.Q.R.
 Brook Electronics Inc., Box 491, Elizabeth 2, N.J.—A.N.Q.
 Browne Electronics, 12450 W. Washington Blvd., Venice, Calif.—A.Q.
 Budelman Radio Corp., 375 Fairfield Ave., Stamford, Conn.—D
 Bunnell & Co., J.H., 81 Prospect St., Brooklyn 1, N.Y.—M
 Calbest Eng'g. & Electronics Co., 828-830 N. Highland Ave., Hollywood 38, Calif.—A.D.I.Q.
 Califone Corp., 1041 N. Sycamore Ave., Hollywood 38, Calif.—A.D.Q.
 Caltech Electronics, 8930 Lindblade St., Culver City, Calif.—A.Q.
 Carad Corp., 93 Leland Ave., San Francisco 28, Calif.—N
 CENTRALAB Div., Globe Union, Inc., 900 E. Keefe Ave., Milwaukee 1, Wisc.—A.H.I.
 Central Electronics Inc., 1247 W. Belmont Ave., Chicago 13, Ill.—A.D.F.
 Century Projector Corp., 729 7th Ave., New York 19, N.Y.—A
 CINEMA ENGG. CO., Div. Aerovox Corp., 1100 Chestnut St., Burbank, Calif.—A.C.G.H.J.K.
 COLLINS RADIO CO., 855 35 St., N.E., Cedar Rapids, Ia.—A.K.
 Colortone Electronics, 238 William St., New York 38, N.Y.—A
 Consolidated Productions, Bldg. 9, Broward Int'l. Airport, Ft. Lauderdale, Fla.—A.D.M.Q.
 Consolidated Radio Products Co., 350 W. Erie St., Chicago 10, Ill.—A.C
 Continental Electronics Ltd., 302 Oakland St., Brooklyn 22, N.Y.—A
 Cook Labs., 114 Manhattan St., Stamford, Conn.—K.Q.
 Coronet Radio & TV, 1451 E. 27th St., Brooklyn 10, N.Y.—A
 Crosby Laboratories, Inc., Box 233, Hicksville, N.Y.—A.F.G.
 Crown Eng'g., 3821 Commercial N.E., Albuquerque, N.M.—G.P.
 Curtiss Wright Corp., Electronics Div., 631 Central Ave., Carlstadt, N.J.—A
 Dade Bros., Old County Rd., Mineola, L.I., N.Y.—P
 Davies Labs., Inc., 4705 Queensbury Rd., Riverdale, Md.—O
 Dayton Aviation Radio & Equip. Corp., RR #3, Troy, Ohio—A
 Dean Electronics Co., 85 5th Ave., Brooklyn 17, N.Y.—A.I.
 Deltron Inc., P.O. Box 192, Glenside, Pa.—F
 Demco Products, P.O. Box 5042, Philadelphia 11, Pa.—A
 Denrad Mfg. Co., 310 W. Woodard St., Denison, Tex.—A.C.D.E.F.G.H.J.K.M.N.Q.
 Dilks Co., P.O. Box 139, Seymour, Conn.—A.D.
 Duhrow, Devel. Co., 235 Penn. St., Burlington, N.J.—A.C.D.E.F.G.H.J.K.N.P.Q.R.
 DuKane Corp., 305 N. 11th St., St. Charles, Ill.—A.D.G.H.J.K.
 DUMONT LABS., INC., ALLEN B., 2 Main Ave., Passaic, N.J.—A.J.K.
 Duotone Co., 77 Walling Terrace, Keyport, N.J.—Q
 Eder Eng'g. Co., 1568 S. First St., Milwaukee 4, Wisc.—A.O.Q.
 Edu-Craft Corp., 160-45 12th Ave., Whitestone, N.Y.—A.I.
 Electromatic Mfg. Corp., 88 University Pl., New York 8, N.Y.—A
 Electron Enterprises, 6917-21 W. Stanley Ave., Berwyn, Ill.—A
 Electronic Development Lab., 43-07 23 Ave., Long Island City 5, N.Y.—A.C.F.G.H.J.K.M.O.P.Q.
 Electronic Measurements Co., Lewis St. & Maple Ave., Eatontown, N.J.—D

Electronic Research Associates, 715 Main St., N. Caldwell, N.J.—A
 Electronic Research Co., 11560 30 St., N.E., Seattle 65, Wash.—A.G.P.
 Electronic Workshop, 26 W. 8 St., New York 11, N.Y.—A.Q.
 Electrosonic Spec., 7230 Clinton Rd., Upper Darby, Pa.—A
 Electro-Sound Corp., 115 Hallock St., Boston, Mass.—A.D.E.L.N.R.
 Electrotechnic Corp., 15601 Arrow Hwy., Azusa, Calif.—A
 Electro Vision Lab., 4227 Francis Lewis Blvd., Bayside 61, N.Y.—A
 Electro-Voice, Inc., Cecil & Carroll Sts., Buchanan, Mich.—A.Q.
 Elk Electronic Labs., 333 W. 52 St., New York 19, N.Y.—A.L.P.
 Elm Laboratories, 18 S. Broadway, Dobbs Ferry, N.Y.—A
 El-Tronics, Inc., 487 N. 5 St., Philadelphia 23, Pa.—A.K.P.
 Endevo Corp., 689 S. Fair Oaks Ave., Pasadena 2, Calif.—P
 Eng'g. Research & Devel. Co., Addison, Ill.—A
 Erco Radio Lab., 637 Stewart Ave., Garden City, N.Y.—A.F.G.H.
 Espey Mfg. Co., 628 E. 72 St., New York 21, N.Y.—A.Q.
 Executone, Inc., 415 Lexington Ave., New York 17, N.Y.—A
 FAIRCHILD RECORDING EQUIP. CORP., 154th St. & 7th Ave., Whitestone, N.Y.—A.C.G.H.J.K.M.Q.
 Farmers Eng'g. & Mfg. Co., Irwin, Pa.—A
 Feller Eng'g. & Mfg. Co., 8026 N. Monticello Ave., Skokie, Ill.—A.M.
 Fidelity Amplifier Co., 705 W. Willow St., Chicago 14, Ill.—A
 Fisher Radio Corp., 21-21 44th Drive, Long Island City 1, N.Y.—A.D.G.H.J.K.M.N.O.P.Q.R.
 Franklin Electronics Inc., 415 W. Pike St., Philadelphia 40, Pa.—A.D.M.P.
 Freed Electronics & Controls Corp., 200 Hudson St., New York 13, N.Y.—A.M.N.P.
 FREED TRANSFORMER CO., 1718 Weirfield St., Brooklyn 27, N.Y.—P
 Frutchey, M.P., P. O. Box 28, Hackettstown, N.J.—M.N.
 Furst Electronics, 3322-A W. Lawrence Ave., Chicago 26, Ill.—P
 Gaertner Radio Co., 3612-14 Maple Ave., Los Angeles 11, Calif.—A.I.
 GALBRAITH & SON ELECTRIC CORP. CO., 450 Ave. of the Americas, New York 11, N.Y.—A.D.
 GATES RADIO CO., 123 Hampshire St., Quincy, Ill.—A.C.D.E.F.G.H.J.K.M.N.P.Q.
 General Communications, P.O. Box 169, Ft. Atkinson, Wisc.—A.C.E.G.K.N.
 GENERAL ELECTRIC CO., Broadcast Equip. and Commercial Equip. Div., Electronics Park, Syracuse, N.Y.—A.F.G.H.J.K.N.Q.
 General Hermetic Sealing Corp., 99 E. Hawthorne Ave., Valley Stream, N.Y.—A
 GENERAL RADIO CO., 275 Mass. Ave., Cambridge 39, Mass.—A.P.
 Geotechnical Corp., 3712 Haggard Dr., Dallas 9, Texas—A.O.
 G & M Equip. Co., 7315 Barna Ave., N. Hollywood, Calif.—A.K.N.
 Godfrey Mfg. Co., 2642 S. Michigan Ave., Chicago 16, Ill.—A
 Gonsset Co., 801 S. Main St., Burbank, Calif.—A
 Goodyear Aircraft Corp., 1210 Massillon Rd., Akron 15, Ohio—M
 Goslin Electric & Mfg. Co., 2921 W. Olive, Burbank, Calif.—A
 Gotham Audio Development Corp., 2 W. 46 St., New York 36, N.Y.—A.C.F.G.K.M.O.
 Gotham Television Corp., 123 W. 64th St., New York 23, N.Y.—A.Q.
 Grason-Stadler Co., 106 Hampshire St., Cambridge 39, Mass.—H
 GRAYBAR ELECTRIC CO., 420 Lexington Ave., New York 17, N.Y.—A.M.
 Grayline Eng'g. Co., 12243 Ave. "O," Chicago 33, Ill.—Q
 Greene Co., L. Charlton, 314 Washington St., Newton 58, Mass.—A
 Greenleaf Mfg. Co., 7814 Maplewood Ind. Ct., St. Louis 17, Mo.—A.M.
 GULTON MFG. CORP., 212 Durham Ave., Metuchen, N.J.—A.P.

Hallen Corp., 3503 W. Olive Ave., Burbank, Calif.—A,N
 Hallicrafters Co., 4401 W. Fifth Ave., Chicago 24, Ill.—A
 Hamilton Electronics Corp., 2726 Pratt Ave., Chicago 45, Ill.—H,Q
 Hamlyn Electronics Corp., 32 Holman Blvd., Hicksville, N.Y.—A,C,H
 Hanover Devel., 401 E. 74 St., New York 21, N.Y.—P
 Harmon Electronics Co., 11431 Truman Rd., Independence, Mo.—F,N
 Hartley & Co., H. A., 521 E. 162nd St., Bronx 5, N.Y.—A,O,Q,R
 Heath Co., 305 Territorial, Benton Harbor, Mich.—A,Q
 Hedco Mfg. Corp., 161 W. Huron St., Chicago 10, Ill.—A,Q
 Hewlett-Packard Co., 395 Page Mill Rd., Palo Alto, Calif.—P
 HICKOK ELECTRICAL INSTRUMENT CO., 10514 Dupont Ave., Cleveland 8, Ohio—A
 IDEA, INC., 7900 Pendleton Pike, Indianapolis 26, Ind.—Q
 INDUSTRIAL TEST EQUIPMENT CO., 55 E. 11th St., New York 3, N.Y.—A,E
 Industrial TV, 369 Lexington Ave., Clifton, N.J.—A,F
 Insuling Corp. of America, 186 Granite St., Manchester, N.H.—A,H,K,M,Q
 Interelectronics Corp., 2432 Grand Concourse, New York 58, N.Y.—A,B,C,D,F,G,H,I,J,K,L,M,N,O,P,Q,R
 Int'l Electronics Corp., 147 Parkhouse St., Dallas 2, Texas—A
 Int'l Projector Corp., 55 LaFrance Ave., Bloomfield, N.J.—A
 Int'l Research Assoc., 2221 Warwick Ave., Santa Monica, Calif.—A,K,M,P
 Int'l Telemeter Corp., 2000 Stoner Ave., Los Angeles 25, Calif.—P
 Jiffy Clip Mfg. Co., 128 Clinton Ave., Huntington, N.Y.—Q
 Johnson Labs., Div. Aladdin Industries, Willard Rd., Norwalk, Conn.—P
 Kalbell Labs., Inc., 1090 Morena Blvd., San Diego 10, Calif.—P
 Keithley Instruments, 3868 Carnegie Ave., Cleveland 15, Ohio—A,E
 Key Electronics Corp., 20 W. 22nd St., New York 10, N.Y.—A,I
 Kinevox Inc., 116 N. Hollywood Way, Burbank, Calif.—J
 Kings Electronics Co., 40 Marbledale Rd., Tuckahoe, N.Y.—A
 Kirby Products Corp., 175 5th Ave., New York 10, N.Y.—A,P,Q
 Korb Engr. & Mfg. Co., 30 Ottawa Ave., Grandville, Mich.—M,O,P
 Krohn-Hite Instrument Co., 580 Mass. Ave., Cambridge 39, Mass.—A,D,K,M,P,Q
 Lane Electronics Co., 7254 Atoll Ave., N. Hollywood, Calif.—A
 LANGEVIN MFG. Corp., 37 W. 65th St., New York 23, N.Y.—A,C,D,E,F,G,H,I,J,K,M
 Lear, Inc., 11916 W. Pico Blvd., Los Angeles 64, Calif.—A,E
 Leonard Electric Products Co., Inc., 67 34th St., Brooklyn 32, N.Y.—A
 Loge Sound Engrs., J. M., 2171 W. Washington Blvd., Los Angeles 18, Calif.—A,D,Q
 Lowell Mfg. Co., 3030 Laclede Station Rd., St. Louis 17, Mo.—D
 Lynmar Engineers, 1432 N. Carlisle St., Phila. 21, Pa.—P
 Lyco Mfg. Co., 1401 Clinton St., Hoboken, N.J.—A
 McIntosh Lab. Inc., 320 Water St., Binghamton, N.Y.—A,G,I,J,K,M,P
 Magna Electronics Inc., 9810 Anza Blvd., Inglewood, Calif.—A,D,H,I,J,Q
 MAGNAVOX CO., Ft. Wayne 4, Ind.—A
 MAGNECORP. INC., 225 W. Ohio St., Chicago 10, Ill.—A,J,M,O
 Magnetic Instrument Co., 82 Main St., W. Orange, N.J.—A,D
 Magnex Corp., 90-28 Van Wyck Expressway, Jamaica 18, N.Y.—A
 Maico Co., 21 N. 3rd St., Minneapolis, Minn.—A
 Marine View Electronics, 744 E. 138 St., New York 54, N.Y.—A,I,Q
 Martin & Co., H. S., Electronics Div., 1916 Greenleaf St., Evanston, Ill.—Q
 Maryland Electronic Mfg. Corp., 5009 Calvert Rd., College Park, Md.—A,E,F
 Mattson-Cowley, 1487 Lincoln Ave., Pasadena 3, Calif.—A
 Maurer, Inc., J. A., 37-01 31 St., Long Island City 1, N.Y.—K,M
 Maxson Corp., W.L., 460 W. 34 St., New York 1, N.Y.—A
 McIntosh Lab. Inc., 320 Water St., Binghamton, N.Y.—A,D,M,P,Q,R
 Medcraft Electronic Corp., 41-41 24 St., Long Island City 1, N.Y.—N
 Melody Master Mfg. Co., 2842 N. Cicero Ave., Chicago 41, Ill.—A,D,I,Q
 Mercury Electronic Co., Box 450, Red Bank, N.J.—A
 Mercury Mfg. Corp., 45 Brown St., Buffalo 11, N.Y.—A
 Metal Products Co., Craighead St., Nashville 4, Tenn.—A,C,G,J,P
 Metrotype Corp., 525 W. 76th St., Chicago 20, Ill.—A,M
 Midwestern Geophysical Lab., 3401 S. Harvard, Tulsa, Okla.—P
 Miller Instruments, Inc., Wm., 325 N. Halstead Ave., Pasadena 8, Calif.—A,M,O,P
 Mohawk Business Machines Corp., 944 Halsey St., Brooklyn 37, N.Y.—A,D,H,I,J,K,M,O,Q,R
 Motiograph, Inc., 4431 W. Lake St., Chicago 24, Ill.—A

MP Engineering Co., Fairfield 3, Conn.—A,D,Q
 NATIONAL CO., 61 Sherman St., Malden, Mass.—Q
 National Electrical Machine Shops, 919 Jesup Blair Dr., Silver Spring, Md.—F
 National Sound Equip. Co., 1212 Farnam St., Omaha, Nebr.—Q
 Neptune Electronic Co., 433 Broadway, New York 13, N.Y.—A,D,K,Q
 Nestor Eng'g. Co., 24 Chestnut St., Rutherford, N.J.—N
 Networks Electronic Corp., 14806 Oxnard St., Van Nuys, Calif.—Q
 Newcomb Audio Products Co., 6824 Lexington Ave., Hollywood 38, Calif.—A,D,G,H,I,J,M,N,P,Q
 Northern Radio Co., 143 W. 22nd St., New York 11, N.Y.—G
 Oberline Ltd., 6411 Hollywood Blvd., Hollywood 28, Calif.—A,C,D,G,J,K,M,N,Q
 Ortho Filter Corp., 196 Albion Ave., Paterson 2, N.J.—A,G,H,I,L
 Otis Elevator Co., Electronic Div., 35 Ryerson St., Brooklyn 5, N.Y.—A,E,F,G,H,J,K,P
 Pacific Mercury TV Mfg., 5955 Van Nuys Blvd., Van Nuys, Calif.—A,Q
 Pedersen Electronics, P.O. Box 572, Lafayette, Calif.—A
 Pentron Corp., 755 S. Tripp St., Chicago, Ill.—M,O,Q
 Permutex Corp., 4900 W. Grand Ave., Chicago 39, Ill.—H
 Phebe, Inc., 900 Kingston Rd., Baltimore 12, Md.—A,P
 Philmore Mfg. Co., 113 University Pl., New York 3, N.Y.—Q
 Phoenix Precision Instrument Co., 3803-05 N. Fifth St., Philadelphia 40, Pa.—A,M
 Physical Research Associates, #1 Azurelee Dr., Malibu, Calif.—A,Q
 Pilot Radio Corp., 37-06 36 St., Long Island City 1, N.Y.—A,Q
 Plymouth Electronics Corp., 50 Kingsbury St., Worcester, Mass.—A,M
 Plastics & Electronics Corp., 272 Northland Ave., Buffalo 8, N.Y.—A,H,P
 POLYTECHNIC RESEARCH & DEVELOPMENT CO., 202 Tillary St., Brooklyn 1, N.Y.—A
 Pratt, Albert, 1939 N. 18 St., Milwaukee 5, Wisc.—A
 Precision Associates, 354 Cumberland St., Brooklyn 17, N.Y.—A
 Precision Electronics, Inc., 9101 King Ave., Franklin Park, Ill.—A,D,H,I,M,O,Q
 Press Wireless Labs., Inc., 25 Prospect Pl., W. Newton 65, Mass.—A,F,G,M,O
 PRFSTO RECORDING CORP., P. O. Box 500, Paramus, N.J.—A,F,G,H,I,J,K,M,O
 Radiation Counter Labs., 5122 W. Grove St., Skokie, Ill.—P
 RADIO CORP. OF AMERICA, RCA VICTOR DIV., Front & Cooper St., Camden 2, N.J.—A,D,F,G,H,J,K,L,M,N,O,P,Q
 Radio Craftsmen, Inc., 4401 N. Ravenswood Ave., Chicago 40, Ill.—Q
 Radio Kits, Inc., 120 Cedar St., New York 6, N.Y.—A
 Radio Mfg. Engineers, Inc., Div., Electro-Voice Buchanan, Mich.—A,P,Q
 Radio Music Corp., 84 S. Water St., Port Chester, N.Y.—A,D,Q
 Rauland-Borg Corp., 3515 W. Addison St., Chicago 18, Ill.—A,D,J,Q
 Rayovox Mfg. Co., 902 Albemarle, Brooklyn 18, N.Y.—A,D
 Rek-O-Kut Co., 38-01 Queens Blvd., Long Island City 1, N.Y.—M,Q
 Remco Mfg. Co., 545 N. LaSalle St., Chicago 10, Ill.—A,L
 Remler Co., 2101 Bryant St., San Francisco 10, Calif.—A,H
 Resdel Engr'g., 2351 Riverside Dr., Los Angeles 39, Calif.—A,L,N,P
 Ripley Co., 1 Factory St., Middletown, Conn.—A
 Roesch Co., D.J., 220 S. Figueroa St., Los Angeles 7, Calif.—A,P
 Rowe Industries, 1702 Wayne St., Toledo 9, Ohio—A,D,I,M,N,Q
 Sargent-Raymont Co., 1401 Middle Harbor Rd., Oakland 20, Calif.—Q,R
 Schuttig & Co., 9th & Kearny Sts., N.E. Washington 17, D.C.—F,I
 S/C Labs, Inc., 37 George St., Newark 5, N.J.—A
 Scott Inc., Hermon Hosmer, 385 Putnam Ave., Cambridge 39, Mass.—A,C,H,K,L,M,N,P,Q,R
 Sealtron Co., 9701 Reading Rd., Cincinnati 15, Ohio—A
 Selector Industries, 3100 Ocean Parkway, Brooklyn 35, N.Y.—A
 Shaw TV Corp., 195 Front St., Brooklyn 1, N.Y.—A
 Shrader Mfg. Co., 2803 M. St. N.W., Washington 7, D.C.—A
 Shura-tone Products Inc., 440 Adelphi St., Brooklyn 38, N.Y.—A
 Simonson Mfg. Co., Mark, 32-28 49th St., Long Island City 3, N.Y.—A,D,H,I,J,M,N,O,Q
 Slate & Associates, Claude C., 11370 W. Olympic Blvd., Los Angeles 64, Calif.—A,F,J,M
 Smith Assoc., Rawdon, 2217 M. St. N.W., Washington 1, D.C.—M
 Smuckler & Co., A.F., 202 Tillary St., Brooklyn 1, N.Y.—P
 Sonotone Corp., Elmsford, N.Y.—A
 S.O.S. Cinema Supply Corp., 602 W. 52 St., New York 19, N.Y.—H,J,M
 Spar Eng'g. & Devel., South & Paxton Ave., Wyncote, Pa.—A

Sparton Radio-TV, 2400 E. Ganson St., Jackson, Mich.—A,F
 Special Products Co., 9115 Brookville Rd., Silver Spring, Md.—A,L,Q
 Specialty Assembling, 79 Clifton Pl., Brooklyn 38, N.Y.—A
 Spencer-Kennedy Labs., 186 Mass Ave., Cambridge 39, Mass.—G,P
 Spera Electronics Labs., 37-10 30 St., Long Island City, N.Y.—A,L
 Square Root Mfg. Corp., 391 Saw Mill River Rd., Yonkers 2, N.Y.—A,H,I,Q
 STANDARD ELECTRONICS RESEARCH CORP., 2 East End Ave., New York 21, N.Y.—A
 Stephens Mfg. Corp., 8538 Warner Dr., Culver City, Calif.—A,H,Q
 Stratford Pen Corp., 44 W. 28 St., New York, N.Y.—A
 Streeter-Amet Co., 4101 N. Ravenswood Ave., Chicago 13, Ill.—M
 Stromberg-Carlson, 100 Carlson Rd., Rochester 3, N.Y.—A,D,G,H,I,J,K,N,Q,R
 Symphony Radio & TV Corp., 925 S. Western Ave., Los Angeles 6, Calif.—A
 Tech Labs., Bergen & Edsall, Blvds., Palisades Park, N.J.—A,F
 Tech-master Corp., 443 Broadway, New York 13, N.Y.—A,Q
 Technical Materiel Corp., 700 Fenimore Rd., Mamaroneck, N.Y.—G,J,N,P,Q,R
 TECHNOLOGY INSTRUMENT CORP., 50 Main St., Acton, Mass.—P
 Techno Instrument Co., 6656 Lexington Ave., Los Angeles 36, Calif.—M
 Teiner Co., Roland, 134 Tremont St., Everett, Mass.—L
 Tele-Broadcasters Inc., 158 E. 56th St., New York, N.Y.—A,C,D,G,J,N,Q
 Telephonics Corp., Park Ave., Huntington, N.Y.—A,H
 Television Co. of America, 1761 Lincoln Blvd., Santa Monica, Calif.—A,M
 Thompson Products, 2195 Clarkwood Rd., Cleveland 3, Ohio—A,O,Q
 Thordarson-Meissner Mfg., Mt. Carmel, Ill.—A
 Transatron Inc., 154 Spring St., New York 12, N.Y.—P
 Transmitter Equip. Mfg. Co., 35 Ryerson St., Brooklyn 5, N.Y.—A,E,F,G,H,J,K,P
 Triumph Mfg. Co., 913 W. Van Buren, Chicago 7, Ill.—A
 Trutone Electronics Inc., 812 N. Highland Ave., Los Angeles 38, Calif.—A,D,H,I,M,Q
 Union Spring & Mfg. Co., 1057 Summit Ave., Jersey City, N.J.—A,M,N,P
 Uni-Ventions Co., 303 5th Ave., New York 16, N.Y.—A
 Univox Corp., 102 Warren St., New York 7, N.Y.—A,P
 U. S. Recording Co., 1121 Vermont Ave., N. W. Washington 5, D. C.—A,J,K,M,N
 U. S. Testing Co., 1415 Park Ave., Hoboken, N.J.—A,D
 United Transformer Co., 150 Varick St., New York, N.Y.—Q
 VECTRON, INC., 400 Main St., Waltham 54, Mass.—A,F,J,P
 Vidair Electronics, 576 W. Merrick Rd., Lynbrook, L.I., N.Y.—A
 Videon Electronic Corp., 902 E. Michigan St., Indianapolis 2, Ind.—A
 V-M Corp., 280 Park St., Benton Harbor, Mich.—A
 Vokar Corp., Huron River Dr., Dexter, Mich.—O
 Walkirt Co., 145 W. Hazel St., Inglewood 3, Calif.—A
 Waveforms, Inc., 333 6th Ave., New York 14, N.Y.—A,P,Q,R
 Webster Electric, 1900 Clark St., Racine, Wisc.—A,D,J,Q
 Welch Electric Co., 1221 Wade St., Cincinnati 14, Ohio—A,J,M,P,Q
 West Coast Electronics, 5873 W. Jefferson Blvd., Los Angeles 16, Calif.—A,K,M,P
 Western Mfg. Co., 1400 W. 22 St., Kearney, Nebr.—N,P
 Western Sound & Electric Labs., 805 S. 5 St., Milwaukee 4, Wisc.—A,I
 WESTINGHOUSE ELECTRIC CORP., 2510 Wilkens Ave., Baltimore 3, Md.—A
 Westinghouse Electric Corp., Box 868, Pittsburgh 30, Pa.—A
 White Industries, Inc., 421 W. 54 St., New York 19, N.Y.—A,P
 White Rock Mfg. Co., White Rock, S.C.—A
 WICKES ENGG. & CONSTR., 12 St. & Ferry Ave., Camden 4, N.J.—E,G,J,K
 Wilcox Electric Co., 1400 Chestnut St., Kansas City 27, Mo.—F,G,H
 Wilmar Mfg. Co., 2715 E. 14th St., Kansas City 27, Mo.—F,G,H
 Wright Eng'g. Co., 180 E. California St., Pasadena 1, Calif.—A,D,P
 Wurliizer Co., R. N. Tonawanda, N.Y.—A
 Z & W Machine Products, 5100 St. Clair Ave., Cleveland 3, Ohio—A

2—AMPLIFIERS, RF-IF

Amplifiers, IF A
 Amplifiers, isolation B
 Amplifiers, keying C
 Amplifiers, limiting D
 Amplifiers, line E
 Amplifiers, microwave F
 Amplifiers, mixing G

Amplifiers, monitoring H
Amplifiers, noise-suppressing J
Amplifiers, radar J
Amplifiers, R-F K
Amplifiers, single-sideband M
Amplifiers, wideband L

Miller Communications Labs., 1 LeFevre Lane
 New Rochelle, N.Y.—K
 Morse Associates Inc., Teterboro, N.J.—A,C,D,K
 otronix Devel. Corp., 20 W. 22nd St., New
 York 10, N.Y.—G
 Allied Allegri Machine Co., 141 River Rd.,
 Nutley 10, N.J.—G
 Allied Radio Corp., 833 W. Jackson Blvd. Chi-
 cago 7, Ill.—G
 American Communications Corp., 306 Broad-
 way, New York 7, N.Y.—H
 American Electronic Labs., Inc., 641 Arch St.,
 Philadelphia 6, Pa.—L
 American Electroengineering Corp., 2040 Colo-
 ave., Santa Monica, Calif.—J
 Applied Science Corp. of Princeton, P.O. Box
 44, Princeton, N.J.—L
 Ardenberg Ultrasonic Lab., 94 Green St.,
 Jamaica Plain 30, Mass.—L
 Audio Products Corp., 2265 Westwood Blvd.,
 Los Angeles 64, Calif.—A,K
 Automatic Mfg. Corp., 65 Gouverneur St.,
 Newark 4, N.J.—A
 Bailey Corp., Arnold, Amoskeag Bank Bldg.,
 Manchester, N.H.—K,L
 Barker & Williamson, 237 Fairfield Ave., Upper
 Darby, Pa.—A,K
 Bassett, Inc., Rex, 1314 NE 17th Court, Ft.
 Lauderdale, Fla.—K
 Beam Instruments Corp., 350 5th Ave., New
 York 1, N.Y.—F,J
 Bendix Aviation Corp., Pacific Div., 11600
 Sherman Way, N. Hollywood, Calif.—J,K
 Berger Communications, 109-01 72 Rd., Forest
 Hills, L.I., N.Y.—K
 Boehme, Inc. H.O., 915 Broadway, New York
 10, N.Y.—C
 Bristol Eng'g. Corp., Lincoln & Pond Sts.,
 Bristol, Pa.—A,C,D,E,F,G,H,I,J,K
 Rudelman Radio Corp., 375 Fairfield Ave.,
 Stamford, Conn.—F,K
 Canoga Corp., 5955 Sepulveda Blvd., Van
 Nuys, Calif.—A,J
 Central Electronics Inc., 1247 W. Belmont
 Ave., Chicago 13, Ill.—M
 Century Electronics, 14844 Oxnard St., Van
 Nuys, Calif.—J
 COLLINS RADIO CO., 855 35 St., N.E., Cedar
 Rapids, Ia.—K
 Color Television Inc., 973 E. San Carlos Ave.,
 San Carlos, Calif.—J
 COMMUNICATION ACCESSORIES CO., 110
 St. & 71 Hi-way, Hickman Mills, Mo.—M
 Continental Electronic Mfg. Co., 4212 S. Buck-
 ner Blvd., Dallas 17, Texas—K,M
 Continental Electronics Ltd., 302 Oakland St.,
 Brooklyn 22, N.Y.—A
 Coronet Radio & T.V. Corp., 1451 E. 27th St.,
 Brooklyn 10, N.Y.—K
 Crosby Laboratories, Inc., Box 233, Hicksville,
 N.Y.—D,M
 Crown Eng'g., 3821 Commercial N. E., Albu-
 querque, N.M.—E,L
 Cubic Corp., 2841 Canon St., San Diego 6,
 Calif.—A,D,F,J
 Hade Bros. Inc., Eng'g. & Mfg. Div., Old Coun-
 try Rd., Mineola, L.I., N.Y.—L
 Dalton Inc., P.O. Box 192, Glenside, Pa.—L
 DeMornay-Bonardi, Inc., 780 Arroyo Pkwy.,
 Pasadena, Calif.—F
 Dental Products, Inc., 7643 Fay Ave., LaJolla,
 Calif.—I,F
 Douglas Microwave Co., 11 Beechwood Ave.,
 New Rochelle, N.Y.—F
 Hubrow Devel. Co., 235 Penn St., Burlington,
 N.J.—C,D,E,G,H,L
 Radio of N.Y., Inc., 70-72 E. Second St., Min-
 neola, L.I., N.Y.—A,C,F,I,K,M
 ELECTRICAL & PHYSICAL INSTRUMENT
 CORP., 25 W. 43rd St., New York 36, N.Y.
 L
 Electromatic Mfg. Corp., 88 University Pl.,
 New York 3, N.Y.—K
 Electro-Mechanical Products Corp., 603 Hallett
 Ave., Riverhead, L.I., N.Y.—J,K
 Electro-Mechanical Research, Inc., 64 Main
 St., Ridgefield, Conn.—K
 Electronic Central Systems, 2138 Westwood
 Blvd., Los Angeles 25, Calif.—A,J,L
 Electronic Research Co., 11550 39 St., N. E.,
 Seattle 55, Wash.—A,E,K,L
 Electron-Radar Products, 1041 N. Pulaski Rd.,
 Chicago 51, Ill.—F,J
 Electrotechnic Corp., 15601 Arrow Hwy.,
 Buena Vista, Calif.—J
 Electronic Labs., 333 W. 52 St., New
 York 19, N.Y.—A,J,L
 Electronics, Inc., 437 N. 5 St., Philadelphia
 1, Pa.—H,J,L
 Emerson Electric Mfg. Co., 8100 Florissant
 Ave., St. Louis 21, Mo.—A
 Empire State Labs., 2608 Merrick Rd., Bell-
 more, Long Island, N.Y.—A,L
 Erie Radio Labs., 637 Stewart Ave., Garden
 City, N.Y.—C
 FEDERAL TELEPHONE & RADIO CO.,
 (W. I.T. & T.), 100 Kingsland Rd., Clifton,
 N.J.—F
 Feed Electronics & Controls Corp., 200 Hudson
 St., New York 13, N.Y.—A,J,K,L
 GATES RADIO CO., 123 Hampshire St.,
 Quincy, Ill.—B,C,D,E,G,H,K,M

GENERAL ELECTRIC CO., Broadcast Equip.
 & Commercial Equip. Div., Electronics Park,
 Syracuse, N.Y.—F,J,K
 GENERAL RADIO CO., 275 Mass. Ave., Cam-
 bridge 39, Mass.—A
 G & M Equip. Co., 7315 Varna Ave., No. Holly-
 wood, Calif.—A,C,F
 Gonset Co., 801 S. Main St., Burbank, Calif.—
 A,M
 Greenleaf Mfg. Co., 7814 Maplewood Ind. Ct.,
 St. Louis 17, Mo.—H
 G. W. Associates, P. O. Box 2263 El Segundo,
 Calif.—F
 Hamlyn Electronics Corp., 32 Holman Blvd.,
 Hicksville, N.Y.—A,K
 Hanover Devel., 401 E. 74 St., New York 21,
 N.Y.—L
 Harmon Electronics Co., 11431 Truman Rd.,
 Independence, Mo.—D,K
 Hewlett-Packard Co., 395 Page Mill Rd., Paulo
 Alto, Calif.—F,L
 Hotel Radio Mfrs., 1040 W. Fort St., Detroit,
 Mich.—K
 Hycor Mfg. Co., 2961 E. Colorado St., Pasa-
 dena 8, Calif.—F
 Industrial T.V., 369 Lexington Ave., Clifton,
 N.J.—K,L
 Instruments for Industries, Old Country Rd.,
 Mineola, N.Y.—A,K,L
 INSULATED CIRCUITS, INC., 115 Roose-
 velt Ave., Belleville, N.J.—F,J
 Insuline Corp. of America, 186 Granite St.,
 Manchester, N.H.—A,B,E,J,K,L,M
 Interelectronics Corp., 2432 Grand Concourse,
 New York 58, N.Y.—A,G,P
 Intl Research Assoc., 2221 Warwick Ave.,
 Santa Monica, Calif.—A,H,L
 Intl Telemeter Corp., 2000 Stoner Ave., Los
 Angeles 25, Calif.—L
 Jefferson, Inc., Ray, 40 E. Merrick Rd., Free-
 port, N.Y.—K
 Jerrold Electronics Corp., 26th & Dickinson
 Sts., Philadelphia 46, Pa.—K
 Johnson Labs., Div. of Aladdin Industries, Inc.,
 Willard Rd., Norwalk, Conn.—K,L
 Kaar Eng'g. Corp., 2995 Middlefield Rd., Palo
 Alto, Calif.—K
 Kalbfell Labs., Inc., 1090 Morena Blvd., San
 Diego 10, Calif.—A,L
 Kings Electronics Co., 40 Marbledale Rd.,
 Tuckahoe, N.Y.—E,F,G,J,K
 Kirby Products Corp., 175 5th Ave., New York
 10, N.Y.—A,K,L
 Korb Engr. & Mfg. Co., 30 Ottawa Ave.,
 Grandville, Mich.—F,J
 Lane Electronics Co., 7254 Atoll Ave., N.
 Hollywood, Calif.—A
 Lear, Inc., 11916 W. Pico Blvd., Los Angeles
 64, Calif.—A,B,K
 Leonard Electric Products Co., Inc., 67 34th
 St., Brooklyn 32, N.Y.—A,F,K
 Linear Equip. Labs., Brightwater Pl., Mas-
 sapequa, N.Y.—L
 Lynch Carrier Systems, Inc., 95 Jessie St.,
 San Francisco 5, Calif.—F
 Lynmar Engineers, 1432 N. Carlisle St., Phil-
 adelphia 21, Pa.—B,K,L
 Lysox Mfg. Co., 1401 Clinton St., Hoboken,
 N.J.—K
 McIntosh Lab. Inc., 320 Water St., Bingham-
 ton, N.Y.—E,G,H,L
 Magna Electronics Inc., 9810 Anza Blvd.,
 Inglewood, Calif.—G
 Magnavox Co., Ft. Wayne 4, Ind.—A,F,J,L
 Magnex Corp., 90-28 VanWyck Expressway
 Jamaica 18, N.Y.—F,J
 Marine View Electronics, 744 E. 138 St., New
 York 64, N.Y.—D,G,H,K
 Maryland Electronic Mfg. Corp., 5009 Calvert
 Rd., College Park, Md.—J
 Mattson-Cowley Corp., 1487 Lincoln Ave.,
 Pasadena 3, Calif.—A,K
 Maxson Corp., W.L., 460 W. 34 St., New York
 1, N.Y.—A,F,J
 Mercury Electronic Co., Box 450 Red Bank,
 N.J.—K
 Mercury Mfg. Corp., 45 Brown St., Buffalo 11,
 N.Y.—K
 Metal Products Co., Craigshead St., Nashville
 4, Tenn.—E,G,L
 Midwest Eng'g. Devel. Co., 3648 State Line,
 Kansas City 3, Kans.—F,J
 Millen Mfg. Co., James, 150 Exchange St., Mal-
 den, Mass.—K
 Mohawk Electronic Research Labs., RD #4
 Box 126A, Amsterdam, N.Y.—K,L
 National Electrical Machine Shops, 919 Jesup
 Blair Dr., Silver Spring, Md.—D
 Neptune Electronic Co., 433 Broadway, New
 York 13, N.Y.—H
 Northern Radio Co., 143 W. 22nd St., New
 York 11, N.Y.—H
 Oberline Ltd., 6411 Hollywood Blvd., Holly-
 wood 28, Calif.—D,E,G,H
 Ortho Filter Corp., 196 Albion Ave., Paterson
 2, N.J.—I
 Orthon Corp., 196 Albion Ave., Paterson, N.J.
 —E,G,I
 Otis Elevator Co., Electronic Div., 35 Ryerson
 St., Brooklyn 5, N.Y.—A,B,D,F,J,K,L,M
 Pacific Mercury TV Mfg., 5955 Van Nuys
 Blvd., Van Nuys, Calif.—A,H,K,M
 Packard-Bell Co., 12333 W. Olympic Blvd., W.
 Los Angeles, Calif.—A
 Peters Co., O. S., 1353 N.Y. Ave., N.E., Wash-
 ington 2, D.C.—A,K
 Phebeo, Inc., 900 Kingston Rd., Baltimore 12,
 Md.—A,B,I,K
 Plymouth Electronics Corp., 50 Kingsbury St.,
 Worcester, Mass.—J
 Press Wireless Labs., Inc., 25 Prospect Pl.,
 W. Newton 65, Mass.—C,D,E,K,M

Radiation Counter Labs., Inc., 5122 W. Grove
 St., Skokie, Ill.—L
 Radio Eng'g. Labs., 36-40 37th St., Long Is-
 land City 1, N.Y.—F,K
 RADIO CORP. OF AMERICA, R.C.A. VIC-
 TOR DIV., Front & Cooper St., Camden 2,
 N.J.—D,E,F,G,H,I,J,K,L,M
 Radio Industries, Inc., 5225 N. Ravenswood
 Ave., Chicago 25, Ill.—A,K,L
 Radio Sonic Corp., 111 Bleeker St., New York
 12, N.Y.—C
 RAYTHEON T.V. & RADIO CORP., 5921 W.
 Dickens Ave., Chicago 39, Ill.—F,J
 Remco Mfg. Co., 545 N. LaSalle St., Chicago
 10, Ill.—J
 Resid Eng'g., 2351 Riverside Dr., Los Ange-
 les 39, Calif.—F,J,K,M
 Rich Electronics, Inc., 212 N. W. 8th Ave.,
 Miami 36, Fla.—K
 Roach Co., D.J., 2200 S. Figueroa St., Los
 Angeles 7, Calif.—A,K,L
 Sanders Associates, Inc., 137 Canal St.,
 Nashua, N.H.—E,F,J,K,L
 Sealtron Co., 9701 Reading Rd., Cincinnati 15,
 Ohio—A
 Selector Industries, 3100 Ocean Parkway,
 Brooklyn 35, N.Y.—A,K
 Shrader Mfg. Co., 2803 M. St., N.W. Washing-
 ton 7, D.C.—D,E,G,H
 Sickles, F.W., Div. General Instrument Corp.,
 P. O. Box 330, Chicopee, Mass.—A
 Sierra Electronic Corp., 1050 Brittan Ave.,
 San Carlos, Calif.—F,K,L
 Simpson Mfg. Co., Mark, 32-29 49th St.,
 Long Island City 3, N.Y.—G
 Slate & Assoc., Claude C., 11370 W. Olympic
 Blvd., Los Angeles 64, Calif.—A,D,K,M
 Smuckler & Co., A.F., 202 Tillary St., Brook-
 lyn 1, N.Y.—L
 Sparton Radio T. V., 2400 E. Ganson St., Jack-
 son, Mich.—A,D,J
 Specialty Assembling, 79 Clifton Pl., Brooklyn
 38, N.Y.—J
 Spencer-Kennedy Labs., 186 Mass. Ave., Cam-
 bridge 39, Mass.—D,E,L
 Spera Electronics Labs., 37-10 33 St., Long
 Island City, N.Y.—K
 Sperry Gyroscope Co., Great Neck, N.Y.—F
 Standard Coil Products Co., 2329 N. Pulaski
 Rd., Chicago 39, Ill.—A,K
 Stavid Eng'g. Inc., 312 Park Ave., Plainfield,
 N.J.—A,J
 Stephens Mfg. Corp., 8538 Warner Dr., Culver
 City, Calif.—E
 Superex Electronics Corp., 23 Atherton St.,
 Yonkers, N.Y.—A
 TECHNICAL APPLIANCE CORP., 1 Taco St.
 Sherburne, N.Y.—K,L
 Technical Materiel Corp., 700 Fenimore Rd.,
 Mamaroneck, N.Y.—D
 TECHNOLOGY INSTRUMENT CORP., 531
 Main St., Acton, Mass.—L
 Teiner Co., Roland, 134 Tremont St., Everett,
 Mass.—I
 Telemarine Communications Co., 3040 W. 21
 St., Brooklyn 24, N.Y.—K
 Telescreen Corp., 36 Grove St., New Canaan,
 Conn.—J
 TEXAS INSTRUMENTS INC., 6000 Lemmon
 Ave., Dallas 9, Texas—A,B,D,F,G,J,K,L,N
 Transitron, Inc., 154 Spring St., New York
 12, N.Y.—L
 Transmitter Equipment Mfg. Co., 35 Ryerson
 St., Brooklyn 5, N.Y.—A,B,D,F,J,K,L,M
 Ultrasonic Corp., 61 Rogers St., Cambridge 42,
 Mass.—F,J
 Union Spring & Mfg. Co., 1057 Summit Ave.,
 Jersey City, N.J.—J,L
 Univox Corp., 102 Warren St., New York 7,
 N.Y.—K
 U. S. Recording Co., 1121 Vermont Ave., N. W.,
 Washington 5, D. C.—G,H
 U.S. Testing Co., 1415 Park Ave., Hoboken,
 N.J.—A,B,D
 Varian Associates, 611 Hansen Way, Palo Alto,
 Calif.—F
 VECTRON, INC., 400 Main St., Waltham 54,
 Mass.—A,F,G,J,K,L
 Videon Electronic Corp., 902 E. Michigan St.,
 Indianapolis 2, Ind.—A,K
 West Coast Electronics Co., 5873 W. Jefferson
 Blvd., Los Angeles 16, Calif.—A,H,K,L
 Western Mfg. Co., 1400 W. 22 St., Kearney,
 Nebr.—K,L
 Weston Labs., Inc., Old Littleton Rd., Harvard,
 Mass.—F
 White Industries Inc., 421 W. 54 th St., New
 York 19, N.Y.—A,J,K,L
 Wilmar Mfg. Co., 2715 E. 14th St., Kansas
 City 27, Mo.—A
 Wunderlich Radio Co., 2 5th Ave., New York
 11, N.Y.—A,B,C,D,K

3—AMPLIFIERS, SPECIAL PURPOSE

Amplifiers, control A
Amplifiers, data recording T
Amplifiers, DC B
Amplifiers, decade C
Amplifiers, development D
Amplifiers, differential E
Amplifiers, facsimile G
Amplifiers, logarithmic I
Amplifiers, magnetic J
Amplifiers, medical V
Amplifiers, null K

Amplifiers, photocellL
Amplifiers, printed circuitM
Amplifiers, pulseW
Amplifiers, servoN
Amplifiers, strain gageO
Amplifiers, sweepP
Amplifiers, transistorU
Amplifiers, ultrasonicQ
Amplifiers, vibration pick-upR
Amplifiers, widebandS

Acme Electronics Inc., (Sub. Aerovox Corp.)
 2724 Peck Rd., Monrovia, Calif.—J
 Acme Telectronix, Div., NEA Service, 1200 W.
 3rd St., Cleveland 13, Ohio—G,L
 Advanced Electronics, Inc., 94 Silas Deane
 Hwy., Rocky Hill, Conn.—R
 Aero Electronics Co., 1512 N. Wells St., Chi-
 cago 10, Ill.—A,B,C,D,E,K,L,N,O,P,Q,R,S,T,
 U
AEROVOX CORP., 740 Belleville Ave., New
 Bedford, Mass.—J
 Ahrendt Instrument Co., 4910 Calvert Rd.,
 College Park, Md.—A,J,N,O,T
 Air Associates, Teterboro, N.J.—B,M,N,Q
 Airborne Instruments Laboratory, 160 Old
 Country Rd., Mineola, L.I., N.Y.—D
AIRCRAFT TRANSFORMER CORP., West &
 Willow Ave., Long Branch, N.J.—J
 Airpax Products Co., Middle River, Baltimore
 20, Md.—A,B,E,I,J,N
 Alcar Instruments Inc., 20-21 Wagaraw Rd.,
 Fair Lawn, N.J.—Q
 Allegany Instrument Co., 1000 Oldtown Rd.,
 Cumberland, Md.—B,O,T
 Allied Allegri Machine Co., 141 River Rd.,
 Nutley 10, N.J.—A
 Allied Eng'g. Div., Allied Int'l. Inc., 230 Park
 Ave., New York 17, N.Y.—N,O
 Allied Mfg. Corp., 605 61st St., W. New York,
 N.J.—J
ALTEC LANSING CORP., 9356 Santa Monica
 Blvd., Beverly Hills, Calif.—L
 American Electronic Labs., Inc., 641 Arch St.,
 Philadelphia 6, Pa.—B,E,V
 American Electronic Mfg., 9503 W. Jefferson
 Blvd., Culver City, Calif.—N
 American Electroning Corp., 2040 Colo.
 Ave., Santa Monica, Calif.—A,B,C,N
 American Machine & Foundry Co., Electron-
 ics Div., 1085 Commonwealth Ave., Boston,
 Mass.—J,Q,V
 Amplifier Corp. of America, 398 Broadway,
 New York 13, N.Y.—B
 Applegate & Co., C. J., 1816 Grove St., Boulder,
 Colo.—S
 Applied Science Corp. of Princeton, P.O. Box
 44, Princeton, N.J.—T
 Arenberg Ultrasonic Lab., 94 Green St., Ja-
 maica Plain 30, Mass.—Q,S
 A.R.F. Products, Inc., 7627 Lake St., River
 Forest, Ill.—S
 Askania Regulator Co., 240 E. Ontario St.,
 Chicago 11, Ill.—A,N
 Atlantic Electronics Corp., 4 Manhasset Ave.,
 Port Washington, N.Y.—A,J,N
 Atlantic Research Corp., 901 N. Columbus St.,
 Alexandria, Va.—D,Q,S
 Atlas Engineering Co., 3 Edgewood St., Rox-
 bury, Mass.—J
 Atlas Precision Products Co., 3801 Castor Ave.,
 Philadelphia 24, Pa.—A,E,N
 Atomic Instrument Co., 84 Mass Ave., Cam-
 bridge 39, Mass.—S
 Audio Instrument Co., 133 W. 14 St., New York
 11, N.Y.—C,D,I,M
 Audio Products Corp., 2265 Westwood Blvd.,
 Los Angeles 64, Calif.—O
 Audio-Tone Oscillator Co., 6511 Main St., Long
 Hill, Conn.—N
 Austin Co., Special Devices Div., 76 Ninth
 Ave., New York 11, N.Y.—A,D,N,T
 Authorized Mfrs. Service Co., 919 Wyckoff
 Ave., Brooklyn 27, N.Y.—A,K,T
 Automatic Temperature Control Co., 5212
 Pulaski Ave., Philadelphia 44, Pa.—N
 Autotron Co., 123 W. Main St., Danville, Ill.
 —L
 Avion Instrument Corp., 299 State Highway
 #17, Paramus, N.J.—A,B,D,I,J,L,M,N,T
 Bailey Corp., Arnold, Amoskeag Bank Bldg.,
 Manchester, N.H.—Q
 Baldwin-Lima Hamilton Corp., Philadelphia
 42, Pa.—O
 Ballantine Labs. Inc., Boonton, N.J.—C
 Barker & Williamson, 237 Fairfield Ave., Upper
 Darby, Pa.—B,C,E,K
 Ballantine Labs. Inc., Boonton, N.J.—C
 Barton Electronics, 955 Asylum Ave., Hart-
 ford 5, Conn.—E,L
Beam Instruments Corp., 350 Fifth Ave., New
 York 1, N.Y.—B,D
BENDIX AVIATION CORP., PACIFIC DIV.,
 11600 Sherman Way, N. Hollywood, Calif.
 —B,M,R
 Beta Electric Corp., 333 E. 103rd St., New
 York 29, N.Y.—B
 Boehme, Inc., H. O., 915 Broadway, New York
 10, N.Y.—F
 Boeing Airplane Co., P. O. Box 3107, Seattle
 14, Wash.—B,N
 Bozue Electric Mfg. Co., 52 Iowa Ave., Pater-
 son 3, N.J.—J
 Bristol Eng'g. Corp., Bristol, Pa.—D
 Brown Electro-Measurement Corp., 4635 S. D.
 Hawthorne Blvd., Portland 16, Ore.—K
 Browning Laboratories, Inc., 750 Main St.,
 Winchester, Mass.—S,W,R

BRUSH ELECTRONICS CO., 3405 Perkins
 Ave., Cleveland 14, Ohio—B,O,Q,R
 Buffalo Instrument Corp., 1780 Elmwood Ave.,
 Buffalo 7, N.Y.—O
 Bunnell & Co., J. H. 81 Prospect St., Brook-
 lyn 1, N.Y.—G
 Cadre Industries Corp., 19 Delaware Ave.,
 Endicott, N.Y.—N
CENTRALAB, Div. Globe-Union Inc., 900 E.
 Keefe Ave., Milwaukee 1, Wisc.—M,U,V
 Central Sales & Mfg. Corp., Denville, N.J.—B,Q
 Centronics Corp., 21-04 122 St., College Point
 36, N.Y.—M
 Century Geophysical Corp., 1333 N. Utica
 Tulsa, Okla.—O,R
C.G.S. Labs., Inc., 391 Ludlow St., Stamford,
 Conn.—D,J,P,R
 Circuitron, Inc., 115 E. Main St., Rockville,
 Conn.—M
 Clark Controller Co., 1146 E. 152 St., Cleveland
 10, Ohio—J
 Clegh Laboratories, Inc., 142 S. Livingston
 Ave., Livingston, N.J.—D,E,K
 Coast Coil Co., 5352 W. Washington Blvd., Los
 Angeles 16, Calif.—J
COLLINS RADIO CO., 855 35 St., N.E. Cu-
 dar Rapids, Ia.—N
 Color TV Inc., 973 E. San Carlos Ave., San
 Carlos, Calif.—I
COMMUNICATION ACCESSORIES CO., 110
 St. & 71 Hi-way, Hickman Mills, Mo.—J
 Computer Co. of America, Div. of Bruno N.Y.
 Industries Corp., 149 Church St., New York
 7, N.Y.—B,E,K,L
 Conn. Telephone & Electric Corp., 70 Brittan-
 nia St., Meriden, Conn.—U
 Consolidated Eng'g. Corp., 300 N. Sierra
 Madre Villa, Pasadena 15, Calif.—O,R,T
 Consolidated Productions, Inc., Building 9,
 Broward International Airport, Ft. Lauder-
 dale, Fla.—A,D,L,N
 Constantine Eng'g. Labs., 70 Island Ave., Mah-
 wah, N.J.—J
 Control Devices Inc., 9918 Charlevoix Ave.,
 Detroit 14, Mich.—A,B,D,E,K,O,R
 Control Eng'g. Corp., 560 Providence High-
 way, Norwood, Mass.—O
 Courier Electric Products, N. Lake St., Boyne
 City, Mich.—N
 Crown Eng'g., 3821 Commercial N.E., Albu-
 querque, N.M.—S
 Cubic Corp., 2841 Canon St., San Diego 6,
 Calif.—N
 Curtiss Wright Corp., Electronics Div., 631
 Central Ave., Carlstadt, N.J.—A,B
 Dade Bros., Old County Rd., Mineola, L.I., New
 York—S
 Davies Labs., Inc., 4705 Queensbury Rd., River-
 dale, Md.—D,T
 Decade Instrument Co., Box 153, Caldwell, N.J.
 —C,Q,S
 Deitz Co., S. J., 38 River Edge Rd., River
 Edge, N.J.—A
 Delaware Optical Labs., 36 William St., Lans-
 downe, Pa.—L
 Deltron Inc., P.O. Box 192, Glenside, Pa.—
 L,K,S
 Demco Products, P.O. Box 5042, Philadelphia
 11, Pa.—U,V
 Denrad Mfg. Co., 310 W. Woodard St., Deni-
 son, Texas—L
 Detectolab, Inc., 6544 Sheridan Rd., Chicago
 26, Ill.—B,I,J,S,V,W
 Devtronics, Inc., 221 N. Hermitage Ave.,
 Trenton, N.J.—A,B,D,K,I
 Diatron Co., 3327 Dixie Dr., Houston 21, Texas
 —A,B,C,D,T
 Digital Products, Inc., 7643 Fay Ave., LaJolla,
 Calif.—M
 Doelcam Corp., 1400 Soldiers Field Rd., Boston
 35, Mass.—B,J,K,L,N,O,T,V
 Douglas Labs., Inc., 373 1 Ave., New York 16,
 N.Y.—L
 D & R, Ltd., 402 E. Gutierrez St., Santa Bar-
 bara, Calif.—J
 Dressen-Barnes Corp., 250 N. Vinedo Ave.,
 Pasadena 8, Calif.—J
 Dresser Electric Co., 942 E. Larned St., Detroit
 7, Mich.—J
 Dubrow Devl. Co., 235 Penn St., Burlington,
 N.J.—A,B,C,D,E,I,K,R,S,T,U
 Dumont-Airplane & Marine Instruments, Inc.,
 Clearfield, Pa.—N
**ECIPISE-PIONEER DIV., BENDIX AVIA-
 TION CORP.**, Teterboro, N.J.—J,M,N
 Eder Engineering Co., 1568 S. First St., Mil-
 waukee 4, Wisc.—A,T
 Edin Co., 207 Main St., Worcester 8, Mass.—
 R,O,T,V
EDISON INC., THOMAS A. INSTRUMENT
 DIV., Lakeside Ave., W. Orange, N.J.—B
 Egan Laboratory, 107-56 113th St., Richmond
 Hill 19, N.Y.—V
 Electric Regulator Corp., Pearl St., Norwalk,
 Conn.—N
 Electro Measurements, Inc., 4312 S.E. Stark
 St., Portland 16, Ore.—K
 Electro-Medical Lab., #1 Hoof-print Trail, S.
 Woodstock 10, Vt.—E,V
 Electrodyne Co., Endicott St., Norwood, Mass.—
 E,K,L,O
 Electro-Mechanical Products Corp., 503
 Hallett Ave., Riverhead, L.I., N.Y.—N
 Electro Mechanical Research, Inc., 64 Main
 St., Ridgefield, Conn.—B,O,R
 Electronic Associates, Inc., Long Branch, N.J.
 —B,N
 Electronic Computers Corp., 265 Butler St.,
 Brooklyn 17, N.Y.—B
 Electronic Control Corp., 1673 E. Forest Ave.,
 Detroit 7, Mich.—L

Electronic Control Systems, 2138 Westwo-
 Blvd., Los Angeles 25, Calif.—A,B,D,J,S,T,
 Electronic Development Lab., 43-07 23 Ave.
 Long Island City 5, N.Y.—C,D,L,S,V
 Electronic Eng'g. Co. of California, 180 S.
 Alvarado St., Los Angeles 57, Calif.—B,N
 Electronic Research Co., 11550-39 N.E., Seattle
 56, Wash.—B,L,S
 Electronic Research Associates, 715 Main St.
 N. Caldwell, N.J.—U
ELECTRONIC TUBE CORP., 1200 E. Me-
 maid Lane, Philadelphia 18, Pa.—B,O,P
 Electron-Radar Products, 1041 N. Pulaski
 Rd., Chicago 51, Ill.—L
 Electro-Physics Co., 287 E. Broadway, New
 York 7, N.Y.—D
 Electrotech Corp., 15601 Arrow Hwy
 Azusa, Calif.—N
 Electro-Technics, Inc., 198 Albion Ave., Pat-
 erson, N.J.—J,N
 Electro-Vision Lab., 4227 Francis Lewis Blvd.
 Bayside 61, N.Y.—A,L
 Elk Electronic Labs., Inc., 333 W. 62 St., New
 York 19, N.Y.—D,Q,S
 Ellis Associates, Box 77 Pelham 65, N.Y.—O
 Elm Laboratories, 18 S. Broadway, Doble
 Ferry, N.Y.—D
 El-Tronics, Inc., 437 N. 5th St., Philadelphia
 23, Pa.—B,D,N,R
 Emerson Electric Mfg. Co., 8100 Florissant
 Ave., St. Louis 21, Mo.—N
 Empire State Labs., 2608 Merrick Rd., Bell-
 more, L.I., N.Y.—D,N,U
 Endeveco Corp., 689 S. Fair Oaks Ave., Pas-
 adena 2, Calif.—L,O,R,T
Eng'g. Research & Devel. Co., Addison, Ill.—
 A,B,L,M,Q,R
 Eng'g. Research Associates, Inc., Div. Reming-
 ton Rand Inc., 1902 W. Minnehaha Ave., St.
 Paul 4, Minn.—N,S,T,V
 Erwood, Inc., 1770 W. Berneau Ave., Chicago
 13, Ill.—R,T
 Espey Mfg. Co., 528 E. 72 St., New York 21,
 N.Y.—G,S
 Federal Electric Corp., 6446 Santa Monica
 Blvd., Los Angeles 38, Calif.—J,N
FEDERAL TELEPHONE & RADIO CO.
 DIV. I.T.&T., 100 Kingsland Rd., Clifton,
 N.J.—J,L,N,O,U
 Feiler Eng'g. & Mfg. Co., 8026 N. Monticello
 Ave., Skokie, Ill.—R
 Fielden Instrument Div., Robertshaw-Fulton
 Controls Co., 2920 N. 4th St., Philadelphia
 11, Pa.—A,B,K,N,O,R,T
 Fisher Radio Corp., 21-21 44th Dr., Long
 Island City, N.Y.—N
FORD INSTRUMENT CO., 31-10 Thomson
 Ave., Long Island City 1, N.Y.—A,D,J,K,N,T
 Franklin Electronics Inc., 415 W. Pike St.,
 Philadelphia 40, Pa.—B,C,N,O,P,R,S,T
 Freed Electronics & Controls, 200 Hudson St.,
 New York 13, N.Y.—A,L,M,Q,S
FREED TRANSFORMER CO., 1718 Weirfield
 St., Brooklyn 27, N.Y.—J,K,S
 Furst Electronics, 3322 W. Lawrence Ave.,
 Chicago 25, Ill.—B,C,D,E,O,R,S
 Garod Radio Corp., 70 Washington St., Brook-
 lyn 1, N.Y.—G
GATES RADIO CO., 123 Hampshire St.,
 Quincy, Ill.—M
 General Communications, P. O. Box 169, Fort
 Atkinson, Wisc.—J
 General Devices, Inc., P.O. Box 253, Prince-
 ton, N.J.—O,T
**GENERAL ELECTRIC CO. APPARATUS
 DIV.**, 1 River Rd., Schenectady 5, N.Y.—
 B,J,O
GENERAL ELECTRIC CO., Germanium Pro-
 ducts Div., Electronics Park, Syracuse, N.Y.
 —U
 General Electrosonics, Inc., 32 W. 22 St., New
 York 10, N.Y.—Q
 General Magnetics, Inc., 135 Bloomfield Ave.,
 Bloomfield, N.J.—A,B,J,L,N,O
GENERAL RADIO CO., 275 Mass. Ave., Cam-
 bridge 39, Mass.—B,K,R,S
 Geotronic Labs. Inc., 1314 Cedar Hill Ave.,
 Dallas 11, Texas—J,N
 Gilmore Industries, Inc., 5713 Euclid Ave.,
 Cleveland 3, Ohio—A,K,O,T
 Glenco Corp., Durham Ave., Metuchen, N.J.—M
 Gonsel Co., 801 S. Main St., Burbank, Calif.—S
 Goodyear Aircraft Corp., 1210 Massillon Rd.,
 Akron 15, Ohio—T
 Grason-Stadler Co., 106 Hampshire St., Cam-
 bridge 39, Mass.—B,V
 Grass Instrument Co., 101 Old Colony Ave.,
 Quincy 70, Mass.—V
 Greenleaf Mfg. Co., 7814 Maplewood Ind. Co.
 St. Louis 17, Mo.—R,D,E,L,N,O,Q,R,S,T,U
GULTON MFG. CORP., 212 Durham Ave.,
 Metuchen, N.J.—C,N,Q,R
 Hamlyn Electronics Corp., 32 Holman Blvd.,
 Hickville, N.Y.—N
 Hanover Developments, 401 E. 74th St., New
 York 21, N.Y.—B,S
 Hanson-Gorrill-Brian, Inc., 1 Continental Hill
 Glen Cove, N.Y.—J,L,N,O,U
 Harmon Electronics Co., 11431 Truman Rd.,
 Independence, Mo.—B
 Hathaway Instrument Co., 1315 S. Clark
 St., Denver 10, Colo.—O,R,V
 Heiland Research Corp., 130 E. 5 Ave., Den-
 ver 9, Colo.—O,R,T
 Herlec Corp., 6th & Beech St., Grafton,
 Wisc.—M
 Hewlett-Packard Co., 395 Page Mill Rd., Palo
 Alto, Calif.—C,S
 HI-Q Div., Aerovox Corp., Olean, N.Y.—J
 Hogan Labs. Inc., 155 Ferry St., New York 11,
 N.Y.—G,L

Lufford Machine Works, Electronics Division, 2201 Carmelina Ave., Los Angeles 64, Calif.—A,B,J,N

Lycan Mfg. Co., 2961 E. Colorado St., Pasadena 8, Calif.—D

Industrial Control Co., Straight Path & Arlington Ave., Wyandanch, N.Y.—B,J,N

Industrial Electronics Co., Hanover St., Hanover, Mass.—A

Industrial Electronics, Inc., 8060 Wheeler St., Detroit 10, Mich.—A,O,R

Industrial Television Inc., 369 Lexington Ave., Clifton, N.J.—S

INDUSTRIAL TEST EQUIPMENT CO., 55 E. 11th St., New York 3, N.Y.—D,K

Int. Inc., Div., Leach Corp., 4411 S. Santa Fe Ave., Los Angeles 68, Calif.—J

Int. Electronic Corp., Roseland, N.J.—N

Instruments for Industries, Old Country Rd., Mineola, N.Y.—D,S

INSULATED CIRCUITS, INC., 115 Roosevelt Ave., Belleville, N.J.—M

Insuline Corp. of America, 186 Granite St., Manchester, N.H.—J,P,U

Inter-electronics Corp., 2432 Grand Concourse, New York 58, N.Y.—D,K,I,M,Q,R,S,V

Int'l. Projector Corp., 65 LaFrance Ave., Bloomfield, N.J.—L

Int'l. Research Assoc., 2221 Warwick Ave., Santa Monica, Calif.—B,N,O,S

Int'l. Research & Devel. Corp., 168 E. Hosack St., Columbus 7, Ohio—R

Int'l. Telemeter Corp., 200 Stoner Ave., Los Angeles 25, Calif.—S

Int'l. Industries, 6110 Wilshire Blvd., Los Angeles 36, Calif.—A,L

Jack Scientific Instrument Co., Bill, Box C-4, Solana Beach, Calif.—D,J,L,N

Jefferson Inc., Ray, 40 E. Merrick Rd., Freeport, N.Y.—N

Johanns Electronic Enterprises, 500 Hamilton Ave., Menlo Park, Calif.—J

Johnson Labs, Div., of Aladdin Industries Inc., Willard Rd., Norwalk, Conn.—S

Kaiser Metal Products, Inc., Bristol, Pa.—A,N,U

Kalbfell Labs., Inc., 1090 Morena Blvd., San Diego 10, Calif.—R,C,N,O

Kearfott Co., 1378 Main Ave., Clifton, N.J.—J,N

Keithley Instruments, 3868 Carnegie Ave., Cleveland 15, Ohio—B,C,V

KETAY MFG. CORP., 555 Broadway, New York, N.Y.—A,J,N,U

Keystone Products, 904 23 St., Union City 6, N.J.—I,J

Kinetix Inst. Co., 902 Broadway, New York 10, N.Y.—N

Kings Electronics Co., 40 Marbledale Rd., Tuckershoe, N.Y.—C,D

Korb Engr. & Mfg. Co., 30 Ottawa Ave., Grandville, Mich.—T

Kybernetics Corp., 1100 Raymond Blvd., Newark 5, N.J.—A,R,T

LANGEVIN MFG. CORP., 37 W. 65th St., New York, N.Y.—N

Lear, Inc., 11916 W. Pico Blvd., Los Angeles 64, Calif.—J,M

Leeds Eng'g. Co., 34-40 79th St., Jackson Heights 72, N.Y.—J

Lee Electric & Mfg. Co., 2806 Clearwater St., Los Angeles 39, Calif.—J

Lektra Laboratories, Inc., 154 11th Ave., New York 11, N.Y.—L

Leonard Electronic Products Co., 67 34th St., Brooklyn 32, N.Y.—J

Librascope Inc., 1607 Flower St., Glendale 1, Calif.—J

Linear Equip. Labs., Brightwater Pl., Massapequa, N.Y.—S

Link Aviation, Inc., Binghamton, N.Y.—N

Liston-Becker Instrument Co., 649 Hope St., Springdale, Conn.—B

Loral Electronics Corp., 794 E. 140 St., New York 54, N.Y.—N

I&O Research & Devel. Corp., 134 N. Wayne Ave., Wayne, Pa.—A,E,K,L,N,O,T

Lumenite Electronic Co., 407 S. Dearborn St., Chicago 5, Ill.—L

Lynmar Engineers, 1432 N. Carlisle St., Phila 21, Pa.—S

McIntosh Lab. Inc., 320 Water St., Binghamton, N.Y.—S

MacDonald Co., W. S., 33 University Rd., Cambridge 38, Mass.—K,N

MacKenzie Products Co., 141 Brewery St., New Haven 11, Conn.—A,V

Mag Electric Products Inc., 14405 S. Crenshaw Blvd., Gardena, Calif.—A,B,J,K,L,N,O

MAGNAVOX CO., Ft. Wayne 4, Ind.—J

Magnetic Amplifiers, Inc., 632 Tinton Ave., New York 55, N.Y.—A,B,D,E,J,L,N,U

Magnetic Instrument Co., 82 Main St., W. Orange, N.J.—A,B,D,E,G,J,N,P,Q

MAGNETIC RESEARCH CORP., 318 Kansas St., El Segundo, Calif.—B,J,N,O

MAGNETICS, INC., Box 230, Butler, Pa.—J

Magnex Corp., 90-28 Van Wyck Expressway, Jamaica 18, N.Y.—A,B,E,J,K,L,M,N,R

Meco Co., 21 W. 3rd St., Minneapolis 1, Minn.—N,V

MANUFACTURERS ENGG. & EQUIP. CORP., York & Mill Rd., Hatboro, Pa.—N

Marine View Electronics, 744 E. 138 St., New York 54, N.Y.—A,R,Q

Martin & Co., H. S. Electronics Div., 1916 Greenleaf St., Evanston, Ill.—A

Maryland Electronic Mfg. Corp., 5009 Calvert Rd., College Park, Md.—N

Maxxon Corp., W. L., 460 W. 34 St., New York 1, N.Y.—J,N

Meadcraft Electronic Corp., 41-41 24 St., Long Island City 1, N.Y.—A,B,E,N

Metals Products Co., Craighead St., Nashville 4, Tenn.—S

Mercury Electronic Co., Box 450 Red Bank, N.J.—B,J

Mercury Mfg. Corp., 45 Brown St., Buffalo 11, N.Y.—A,V

Metrotype Corp., 6100 Archer Rd., Summit, Ill.—B,L,N,T

Micromax Co., 1964 Utica Ave., Brooklyn 34, N.Y.—N

Midwestern Geophysical Lab., 3401 S. Harvard, Tulsa, Okla.—N,O,R,S,T

Miller Instruments, Inc., Wm., 325 N. Halstead Ave., Pasadena 8, Calif.—A,B,E,J,O,R,S,T

MILLIVAC INSTRUMENT CORP., 444 Second St., Schenectady, N.Y.—B,K,S

Minnesota Electronics Corp., 1058 University Ave., St. Paul 4, Minn.—J

Mohawk Business Machines Corp., 944 Halsey St., Brooklyn 37, N.Y.—L,M,T

Mong Valve Co., East Aurora, N.Y.—R,N

Motograph, Inc., 4431 W. Lake St., Chicago 24, Ill.—L

Multi-Tron Lab., 4624 Washington Blvd., Chicago 44, Ill.—A,B

National Electrical Machine Shops, 919 Jesup Blair Dr., Silver Spring, Md.—O

Neptune Electronics Co., 433 Broadway, New York 13, N.Y.—A

Nestor Eng'g. Co., 24 Chestnut St., Rutherford, N.J.—B

NEW LONDON INSTRUMENT CO., P.O. Box 189, New London, Conn.—S

Non-Linear Systems, Del Mar Airport, Del Mar, Calif.—M

Nutone, Inc., Madison & Redbank Rd., Cincinnati 27, Ohio—N

Offner Electronics, Inc., 5320 N. Kedzie Ave., Chicago 25, Ill.—B,N,R,V

Olympic Development Co., Div., Olympic Radio & Television Corp., 30 Commerce Rd., Stamford, Conn.—D

Ortho Filter Corp., 196 Albion Ave., Paterson 2, N.J.—J

Otis Elevator Co., Electronic Div., 35 Ryerson St., Brooklyn 5, N.Y.—N,Q,T

Owen Labs., 412 Woodward Blvd., Pasadena 10, Calif.—E

Pacific Mercury T.V. Mfg. Corp., 5955 Van Nuys Blvd., Van Nuys, Calif.—A,M,N,O,R,U

Pembrex Theatre Supply Corp., 1969 S. Vermont Ave., Los Angeles 7, Calif.—J

Pentron Corp., 755 S. Tripp St., Chicago, Ill.—J

Permolux Corp., 4900 W. Grand Ave., Chicago 39, Ill.—U

Peters Co., O. S., 1353 N.Y. Ave., N.E., Washington 2, D.C.—N,O

Phebeo, Inc., 900 Kingston Rd., Baltimore 12, Md.—J,U

Philbrick Research, Inc., Geo. A., 230 Congress St., Roston 10, Mass.—A,B,E,K

Phoenix Precision Instrument Co., 3803-05 N. Fifth St., Phila. 40, Pa.—A,B,C,D,E,I,L,O,T

Photobell Co., 116 Nassau St., New York 38, N.Y.—L

Photoswitch Inc., 77 Broadway, Cambridge 42, Mass.—I

Photron Instrument Co., 6516 Detroit Ave., Cleveland 2, Ohio—B,L,O,V

Physical Research Associates, #1 Azurlee Dr., Malibu, Calif.—K,L,N,T

Pickard & Burns, 240 Highland Ave., Needham, Mass.—I

Plastics & Electronics Co., Inc., 272 Northland Ave., Buffalo 8, N.Y.—D,M,O

Plymouth Electronics Corp., 50 Kingsbury St., Worcester, Mass.—N

Polyphase Instrument Co., 705 Haverford Rd., Bryn Mawr, Pa.—O

POLYTECHNIC RESEARCH & DEVELOPMENT CO., 202 Tillary St., Brooklyn 1, N.Y.—A,B,J,N,O

Power Transformer Co., 532 Hulberry St., Newark 5, N.J.—J

Precise Measurements Co., 942 Kings Highway, Brooklyn 23, N.Y.—J

Precision Electronics, Inc., 9101 King Ave., Franklin Park, Ill.—L

Press Wireless Labs., Inc., 25 Prospect Pl., W. Newton 65, Mass.—G

Process & Instruments, 15 Stone Ave., Brooklyn 33, N.Y.—B,D,E,V

Radiophone Co., 600 E. Evergreen Ave., Monrovia, Calif.—A

Radiation Counter Labs., Inc., 5122 W. Grove St., Skokie, Ill.—I,S,V

Radiation, Inc., Drawer Q, Melbourne, Fla.—A,N,O

RADIO CORP. OF AMERICA, ENGG. PRODUCTS DIV., Camden, N.J.—L,P,S,U

Radio Kits, Inc., 120 Cedar St., New York 6, N.Y.—A,B,P

Radio Sonic Corp., 111 Bleeker St., New York 12, N.Y.—D,Q,R

RAYTHEON T. V. & RADIO CORP., 5921 W. Dickens Ave., Chicago 39, Ill.—M

Remco Mfg. Co., 545 N. LaSalle St., Chicago 10, Ill.—K

Remler Co., Ltd., 2101 Bryant St., San Francisco 10, Calif.—D,U

Readl Engr'g., 2351 Riverside Dr., Los Angeles 39, Calif.—Q,V

Research Electronics Labs., Roslyn, Pa.—B,D

Rich-Roth Labs., 1240 Main St., Hartford 8, Conn.—Q,S

Robinette Co., W. C., 802 Fair Oaks Ave., So. Pasadena, Calif.—A,N

Rockwell Eng'g. Co., 4043 N. New Jersey St., Indianapolis 5, Ind.—N

Roesch Co., D. J., 220 S. Figueroa St., Los Angeles 7, Calif.—A,B,P,S

Rowe Industries, 1702 Wayne St., Toledo 9, Ohio—A,D,N,R,T,V

Rubicon Co. Ridge Ave., at 35th St., Philadelphia 32, Pa.—L

Rutishauser Corp., 480 S. Fair Oaks Ave., Pasadena 1, Calif.—B

SAMPSON CHEMICAL & PIGMENT CORP., 2830 W. Lake St., Chicago 12, Ill.—M

Sanborn Co., Cambridge 39, Mass.—B,N,O

Sanders Associates Inc., 137 Canal St., Nashua, N.H.—M,N

Scantlin Electronics, J. R., 1-5 W. Hazel St., Los Angeles 24, Calif.—M

Schaeffers Eng'g., Crescent Blvd & Drexel Ave., Camden 1, N.J.—N

Scott, Inc., Hermon Hooper, 385 Putnam Ave., Cambridge 39, Mass.—C,E,I,K,R

Seay Instrument Co., 6521 N. Lamar Blvd., Austin 5, Texas—A,B,E,N

Seismograph Service Corp., 701 Kennedy Blvd., Tulsa, Okla.—R,T

Selectar Industries, Inc., 3100 Ocean Pkwy., Brooklyn 35, N.Y.—B,J

Servomechanisms, Inc., 500 Franklin Ave., Garden City, N.Y.—A,J,N,U

Servo Corp. of America, 4020 Jericho Turnpike, New Hyde Park, N.Y.—L,N,V

Servo-Tek Products Co., 1086 Guille Rd., Hawthorne, N.J.—R,E,N

Shepard Labs., 480 Morris Ave., Summit, N.J.—O

Shoup Eng'g. Co., 221 E. Cullerton St., Chicago 16, Ill.—A

Sierra Electronic Corp., 1050 Brittan Ave., San Carlos, Calif.—S

Signal Equipment Co., 2706 3 Ave., Seattle 1, Wash.—A,D,S

Slate & Associates, Claude C., 11370 W. Olympic Blvd., Los Angeles 64, Calif.—A,D,J,N

SONOTONE CORP., Elmsford, N.Y.—U

S.O.S. Cinema Supply Corp., 602 W. 52 St., New York 19, N.Y.—J

Snuecker & Co., A.F., 202 Tillary St., Brooklyn 1, N.Y.—S

Southwestern Industrial Electronics Co., 2831 Post Oak Rd., Houston, Texas—B,E,O,R,S,T,V

Spar Eng'g. & Devel., South & Paxson Aves., Wynote, Pa.—A,B,N

Sparton Radio T. V., 2400 E. Ganson St., Jackson, Mich.—M

Special Instruments Lab. Inc., 1003 Highland Ave., Knoxville, Tenn.—B

Specialty Assembling, 79 Clifton Pl., Brooklyn 38, N.Y.—A

Specialties Inc., Skunks Misery Rd., Syosset, L.I., N.Y.—E,I,J,N

Spencer-Kennedy Labs., 186 Mass. Ave., Cambridge 39, Mass.—A,S

Sperry Gyroscope Co., Great Neck, N.Y.—R

Square Root Mfg. Corp., 391 Saw Mill River Rd., Yonkers, N.Y.—D,J,I,M

Standard Coil Products Co., 2329 N. Pulaski Rd., Chicago 39, Ill.—J,M,N

STANDARD ELECTRONICS RESEARCH CORP., 2 East End Ave., New York 21, N.Y.—E,J,L,N,Q

Stavid Eng'g. Inc., 312 Park Ave., Plainfield, N.J.—D,M,Q,T

Sterling Instruments Co., 15310 W. McNichols, Detroit 35, Mich.—A,D,K,L,N,R,T

Streeter-Amet Co., 4101 N. Ravenswood Ave., Chicago 13, Ill.—A,K,L,N,O,T

Strong Electric Co., 87 City Park Ave., Toledo 2, Ohio—N

Summers Gyroscope Co., 2328 Broadway, Santa Monica, Calif.—J

Syntronic Instruments, Inc., 100 Industrial Rd., Addison, Ill.—P

Tech Laboratories Inc., Bergen & Edsall Blvd., Palisades Park, N.J.—C

Technical Material Corp., 700 Fenimore Rd., Mamaroneck, N.Y.—A,G

Technical Operations, Inc., 6 Schouler Court, Arlington 74, Mass.—B

Techno Instrument Co., 6666 Lexington Ave., Los Angeles 26, Calif.—O,R

TECHNOLOGY INSTRUMENT CORP., 531 Main St., Acton, Mass.—C,S

TEKTRONIX, INC., P.O. Box 831, Portland 7, Ore.—B,E,S,V

Tele-Beam Industries, 6th & Soscol Ave., Napa, Calif.—Q

Television Associates, E. Michigan St., Michigan City, Ind.—A

Television Co. of America, 1761 Lincoln Blvd., Santa Monica, Calif.—B,K,L,N,R

Telesco Corp., 1415 W. Golf Rd., Des Plaines, Ill.—R

TEL-INSTRUMENT CO., 728 Garden St., Carlstadt, N.J.—P

TEXAS INSTRUMENTS INC., 6000 Lemmon Ave., Dallas 9, Texas—D,E,I,J,M,N,P,S,U

Thompson Clock Co., H. C., 38 Federal St., Bristol, Conn.—L,M,R

TIMES FACSIMILE CORP., 540 W. 58th St., New York 19, N.Y.—G

Torwico Electronics Inc., 961 Frelinghuysen Ave., Newark 5, N.J.—J

Transformers, Inc., 532 North St., Endicott, N.Y.—J

Transformer Technicians Inc., 2608 N. Cicero Ave., Chicago 39, Ill.—A

TRANSISTOR PRODUCTS INC., Snow & Union Sts., Roston 35, Mass.—U

Transmitter Equipment Mfg. Co., 35 Ryerson St., Brooklyn 5, N.Y.—N,Q,T

Transcoil Corp., 107 Grand St., New York 13, N.Y.—N

Tri-Dex Co., P.O. Box 1207, Lindsay, Calif.—D,M

Triumph Mfg. Co., 913 Van Buren, Chicago 7, Ill.—B

TUNG-SOL ELECTRIC INC., 95 8th Ave., Newark 4, N.J.—U
 Ultrasonic Corp., 61 Rogers St., Cambridge 42, Mass.—J,K,N,Q
 Ultrasonic Eng'g. Co., P.O. Box 46, Maywood, Ill.—Q
 U. M. & F. MFG. CORP., 10929 Van Owen St., N. Hollywood, Calif.—U
 U.S. Testing Co., 1415 Park Ave., Hoboken, N.J.—A,D,O,R,S
 Union Spring & Mfg. Co., 1057 Summit Ave., Jersey City, N.J.—A,S
 Varo Mfg. Co., 1801 Walnut St., Garland, Tex.—J
 VECTRON, INC., 400 Main St., Waltham 54, Mass.—A,E,J,K,L,N,S
 Vibro-Ceramics Corp., Metuchen, N.J.—Q
 Vickers Electric Div., Vickers, Inc., 1835 Locust St., St. Louis 3, Mo.—A,B,J,L,N
 VICTOREEN INSTRUMENT CO., 3800 Perkins Ave., Cleveland 12, Ohio—B
 Video Corp. of America, 229 W. 28th St., New York, N.Y.—J
 Vinson Co., E. R., 1401 Middle Harbor Rd., Oakland 20, Calif.—A,L,U
 Waldorf Instrument Corp., Park Ave., Huntington, N.Y.—D,N
 Walkirt Co., 145 W. Hazel St., Inglewood 3, Calif.—B,E,M
 Waveforms, Inc., 333 6th Ave., New York 14, N.Y.—D
 Weinschel Eng'g. & Mfg., 10505 Metropolitan Ave., Kensington, Md.—T
 Welch Electric Co., 1221 Wade St., Cincinnati 14, Ohio—A,R,D,E,J,K,L,P,Q,T,U
 WELCH MFG. CO., W. M., 1515 Sedgwick St., Chicago 10, Ill.—L
 West Coast Electronics Co., 5873 W. Jefferson Blvd., Los Angeles 16, Calif.—A,L,S
 Western Mfg. Co., 1400 W. 22 St., Kearney 14, Nebr.—S
 Western Radiation Lab., 1107 W. 24th St., Los Angeles 7, Calif.—R
 Westinghouse Electric Corp., Box 868, Pittsburgh 30, Pa.—J
 Wilmar Mfg. Co., 2715 E. 14th St., Kansas City 27, Mo.—M
 Wright Eng'g. Co., 180 E. California St., Pasadena 1, Calif.—L,O,R,V
 Worner Electronic Devices, Rankin, Ill.—L
 Yellow Springs Instrument Co., P. O. Box 106, Yellow Springs, Ohio—O,R

4—AMPLIFIERS, TELEVISION

Amplifiers, booster K
Amplifiers, isolation A
Amplifiers, keying B
Amplifiers, limiting C
Amplifiers, line D
Amplifiers, mixing E
Amplifiers, monitoring F
Amplifiers, montage G
Amplifiers, remote H
Amplifiers, sweep I
Amplifiers, television J

Adler Communications Labs., 1 Le Fevre Lane, New Rochelle, N.Y.—D,E,H
 Airtronix Devel. Corp., 20 W. 22 St., New York 10, N.Y.—E
 ALLIANCE MFG. CO., Lake Park Blvd., Alliance, Ohio—K
 Allied Allegri Machine Co., 141 River Rd., Nutley 10, N.J.—E
 Allied Radio Corp., 833 W. Jackson Blvd., Chicago 7, Ill.—E
 American Communications Corp., 306 Broadway, New York 7, N.Y.—F,J
 Anchor Radio Corp., 2215 S. St. Louis Ave., Chicago 23, Ill.—K
 A.R.F. Products, Inc., 7627 Lake St., River Forest, Ill.—D
 Automatic Mfg. Corp., 65 Gouverneur St., Newark 4, N.J.—J
 Bell TV Inc., 254 W. 54th St., New York 19, N.Y.—A,J
 BLONDER-TONGUE LABS., INC., 526-536 North Ave., E. Westfield, N.J.—A,E,J,K
 Boken Co., David, 29 9th St., New York 14, N.Y.—K
 Brach Mfg. Co., Div. General Bronze Corp., 200 Central Ave., Newark 3, N.J.—K
 Carad Corp., 93 Leland Ave., San Francisco 28, Calif.—H
 Circuitron, Inc., 115 E. Main St., Rockville, Conn.—J
 Coronet Radio & TV Corp., 1451 E. 27th St., Brooklyn 10, N.Y.—J
 Crown Eng'g., 3821 Commercial N.E., Albuquerque, N.M.—D
 Digital Products, Inc., 7643 Fay Ave., LaJolla, Calif.—J
 Dubrow Devel. Co., 235 Penn. St., Burlington, N.J.—B,C,D,E,F,H
 DUMONT LABS., INC., ALLEN B., 2 Main Ave., Passaic, N.J.—J
 Eastern Precision Resistor Corp., 130-11 90 Ave., Richmond Hill 18, N.Y.—J
 Electronic Research Co., 11550 39 St., N.E., Seattle 55, Wash.—D
 Elk Electronic Labs., Inc., 333 W. 52nd St., New York 19, N.Y.—I
 El-Tronics, Inc., 5th & Noble Sts., Philadelphia 23, Pa.—C
 Freed Electronics & Controls Corp., 200 Hudson St., New York 13, N.Y.—H,J

Frutchey, M. P., P.O. Box 28, Hackettstown, N.J.—H
 Garod Radio Corp., 70 Washington St., Brooklyn 1, N.Y.—J
 GENERAL COMMUNICATION, P.O. Box 169, Fort Atkinson, Wis.—D,E,F,G,J
 GENERAL ELECTRIC CO., Broadcast Equip. & Commercial Equip. Div., Electronics Park, Syracuse, N.Y.—A,C,D,E,F,G,H,I
 GENERAL PRECISION LAB., INC., 63 Bedford Rd., Pleasantville, N.Y.—A,D,E,F,J
 Gonset Co., 801 S. Main St., Burbank, Calif.—H
 Hallen Corp., 3503 W. Olive Ave., Burbank, Calif.—H
 Harmon Electronics Co., 11431 Truman Rd., Independence, Mo.—C,H
 IDEA, Inc., 7900 Pendleton Pike, Indianapolis 26, Ind.—K
 Industrial TV, 369 Lexington Ave., Clifton, N.J.—J,K
 Interelectronics Corp., 2432 Grand Concourse, New York 58, N.Y.—C,D,F
 Int'l. Research Assoc., 2221 Warwick Ave., Santa Monica, Calif.—F,J
 Int'l Telemeter Corp., 2000 Stoner Ave., Los Angeles 25, Calif.—J
 Jerrold Electronics Corp., 26th & Dickinson Sts., Philadelphia 46, Pa.—J,K
 Johnson Labs., Div. of Aladdin Industries, Inc., Willard Rd., Norwalk, Conn.—J
 Kalbfell Labs., 1090 Morena Blvd., San Diego 10, Calif.—A,D,E,F,H,J
 Kane Electronics Corp., 81 Willoughby St., Brooklyn 1, N.Y.—J
 Kirby Products Corp., 175 5th Ave., New York 10, N.Y.—J
 Kybernetics Corp., 1100 Raymond Blvd., Newark 5, N.J.—D,F,G,H,I,J
 L. ANGEVIN MFG. CORP., 37 W. 65th St., New York, N.Y.—A,C,D,E,F,K
 Linear Equipment Labs., Brightwater Pl., Massepequa, L.I., N.Y.—D
 Lynmar Engineers, 1432 N. Carlisle St., Phila. 21, Pa.—A,J,K
 Magna Electronics, Inc., 9810 Anza Blvd., Inglewood, Calif.—E
 Marine View Electronics, 744 E. 138 St., New York 54, N.Y.—C,E,F,J
 Medcraft Electronic Corp., 41-41 24 St., Long Island City 1, N.Y.—H
 Metal Products Co., Craigshead St., Nashville 4, Tenn.—D,E
 Nester Eng'g. Co., 24 Chestnut St., Rutherford, N.J.—H
 Oberlin, Ltd., 6411 Hollywood Blvd., Hollywood 28, Calif.—C,D,E,F,H
 Oregon Corveck Co., 1005 N.W. 16 Ave., Portland, Ore.—J
 Orthon Corp.—196 Albion Ave., Paterson, N.J.—D,E,H
 Pacific Mercury TV Mfg., 5955 Van Nuys Blvd., Van Nuys, Calif.—J
 Philco Corporation—Accessory Div., "A" & Allegheny Ave., Philadelphia 34, Pa.—K
 RADIO CORP. OF AMERICA, RCA VICTOR DIV., Front & Cooper Sts., Camden 2, N.J.—A,C,D,E,F,G,H,I,J,K
 Radio Mfg. Engineers, Inc., Div. Electro-Voice, Buchanan, Mich.—K
 Resdel Eng'r., 2351 Riverside Dr., Los Angeles 39, Calif.—H
 Roesch Co., D. J., 2200 S. Figueroa St., Los Angeles 7, Calif.—L,J
 Shrader Mfg. Co., 2803 M. St., N.W., Washington 7, D.C.—C,D,E,F
 Siekles Div., F. W., General Instrument Corp., P.O. Box 330, Chicopee, Mass.—J
 Simpson Mfg. Co., Mark—32-28 19 St., Long Island City 3, N.Y.—K
 Spartan Radio TV, 2400 E. Ganson St., Jackson, Mich.—C,J
 Spencer-Kennedy Labs., 186 Mass. Ave., Cambridge 39, Mass.—A,C,D,J,K
 Sunerex Electronics Corp., 23 Atherton St., Yonkers, N.Y.—K
 Tech-Master Corp., 443 Broadway, New York 13, N.Y.—J,K
 TECHNICAL APPLIANCE CORP., 1 Taco St., Sherburne, N.Y.—H,J,K
 Tele-Beam Industries, 6th & Soscol Ave., Napa, Calif.—E,K
 Tele-Broadcasters Inc., 158 E. 56th St., New York, N.Y.—A,C,E,G,H,K
 TEL-INSTRUMENT CO., 728 Garden St., Carlstadt, N.J.—G,I
 TURNER CO., 909 17 St., N.E. Cedar Rapids, Iowa—K
 Union Spring & Mfg. Co., 1057 Summit Ave., Jersey City, N.J.—H
 U.S. Recording Co., 1121 Vermont Ave., N.W., Washington 5, D.C.—E,F,H
 Vileon Electronic Corp., 902 E. Michigan St., Indianapolis 2, Ind.—K
 Walmot Electronics, 4625 W. 53 St., Chicago 10, Ill.—J
 West Coast Electronics Co., 5873 W. Jefferson Blvd., Los Angeles 16, Calif.—F
 Western Mfg. Co., 1400 W. 22 St., Kearney, Nebr.—H,J
 WICKES ENGR. & CONST. CO., 12 St. & Ferry Ave., Camden, N.J.—A,B,D,E,F,J,K

5—ANALYZERS

Analyzers, audio-amplifier A
Analyzers, capacitor B
Analyzers, circuit C
Analyzers, coincidence D
Analyzers, color E
Analyzers, dimensional Z

Analyzers, electrochemical V
Analyzers, engine AA
Analyzers, frequency F
Analyzers, gas G
Analyzers, harmonic H
Analyzers, intermodulation I
Analyzers, internal combustion U
Analyzers, magnetic J
Analyzers, microwave K
Analyzers, noise L
Analyzers, radar M
Analyzers, servo N
Analyzers, spectrum O
Analyzers, stress W
Analyzers, surface P
Analyzers, transducer X
Analyzers, transistor Y
Analyzers, ultrasonic Q
Analyzers vibration R
Analyzers, video S
Analyzers, waveform T

Advanced Electronics, Inc., 94 Silas Deane Hwy., Rocky Hill, Conn.—R
 AEROVOX CORP., 740 Belleville Ave., New Bedford, Mass.—B
 Ahrendt Instrument Co., 4910 Calvert Rd., College Park, Md.—J,N
 Airborne Electronics Co., Hanger 6 Metropolitan Airport, Van Nuys, Calif.—O
 Airborne Instruments Laboratory, 160 Old Country Rd., Mineola, L.I., N.Y.—Y
 Alpar Mfg. Co., 2910 Spring St., Redwood City, Calif.—C,M
 American Electronics Corp., 2040 Colorado Santa Monica, Calif.—I
 American Electronic Mfg. Co., 9503 W. Jefferson Blvd., Culver City, Calif.—N
 American Electroengineering Corp., 2040 Colorado Ave., Santa Monica, Calif.—F,I
 American Instrument Co., 8050 Georgia Ave., Silver Spring, Md.—U
 American Optical Co., Instrument Div., Box A, Buffalo 15, N.Y.—E,O
 Ansley Electronics, Inc., 85 Tremont St., Meriden, Conn.—M,O
 Applied Physics Corp., 362 W. Colo. St., Pasadena 1, Calif.—O
 Arenberg Ultrasonic Lab., 94 Green St., Jamaica Plain 30, Mass.—Q
 Atomic Instrument Co., 84 Mass. Ave., Cambridge 39, Mass.—D
 Atomlab, Inc., 489 5 Ave., New York 17, N.Y.—D
 Audio Instrument Co., 133 W. 14th St., New York 11, N.Y.—I
 Audio-Tone Oscillator Co., 6511 Main St., Long Hill, Conn.—A,H,I
 Authorized Mfrs. Service Co., 919 Wyckoff Ave., Brooklyn 27, N.Y.—J
 Auto-Test Inc., 600 S. Michigan Ave., Chicago 5, Ill.—U
 Bailey Meter Co., 1050 Ivanhoe Rd., Cleveland 10, Ohio—G
 Baker & Co., 113 Astor St., Newark 5, N.J.—C
 Barker & Williamson, 237 Fairfield Ave., Upper Darby, Pa.—A,F,I,H,L
 Barry Electronics Corp., 136 Liberty St., New York 6, N.Y.—O
 Bassett Inc., Rex, 1314 NE 17th Court, Ft. Lauderdale, Fla.—F
 Berkshire Labs., 586 Beaver Pond Rd., Lincoln, Mass.—J
 Brach Mfg. Co., Div. General Bronze Corp., 200 Central Ave., Newark 3, N.J.—N
 Bristol Eng'g. Corp., Bristol, Pa.—G
 BRUSH ELECTRONICS CO., 3405 Perkins Ave., Cleveland 14, Ohio—F,O,P
 Cambridge Instrument Co., Grand Central Terminal, New York 17, N.Y.—G
 Canoga Corp., 5955 Sepulveda Blvd., Van Nuys, Calif.—K,O
 Century Electronics, div. Century Metals & Co., 14806 Oxnard St., Van Nuys, Calif.—O
 C.G.S. Laboratories, Inc., 391 Ludlow St., Stamford, Conn.—O
 Chicago Industrial Instrument Co., 536 W. Erie St., Chicago 10, Ill.—B
 Clegg Laboratories, Inc., 142 S. Livingston St., N.J.—B,C,J,M,S,T,X,Y
 Clough-Brenze Co., 6014 Broadway, Chicago 40, Ill.—A,B
 Color TV Inc., 973 E. San Carlos Ave., San Carlos, Calif.—C
 Colortone Electronics, 238 William St., New York 38, N.Y.—F,H
 Colorvision Plastics, Inc., 247 Atlantic Ave., Boston 10, Mass.—E
 Communication Measurements Lab., 350 Lehigh Ave., Plainfield, N.J.—C
 Conn. Ltd., C.G., Filkhart, Ind.—F
 Conn. Telephone & Electric Corp., 70 Brittain St., Meriden, Conn.—F,K
 Consolidated Eng'g. Corp., 300 N. Sierra Madre Villa, Pasadena 15, Calif.—G,R,W
 Cubic Corp., 2841 Canon St., San Diego 6, Calif.—K
 Davies Labs., Inc., 4705 Queensbury Rd., Rye Brook, Md.—F,H,L,O,R,T
 Defender Instrument & Regulator Co., 115 Clark Ave., St. Louis 2, Mo.—G
 Delaware Optical Labs., 36 Williams St., Lansdowne, Pa.—E,O,P

DeMornay-Bonardi, Inc., 780 S. Arroyo Pkway., Pasadena, Calif.—O
 Detectolab, Inc., 6544 Sheridan Rd., Chicago 26, Ill.—D.T
 DeAll Co., 264 N. Laurel Ave., Des Plaines, Ill.—P
 Doelcam Corp., 1400 Soldiers Field Rd., Boston 35, Mass.—N
 Donner Scientific Co., 2829 7th St., Berkeley 10, Calif.—A.H.O.T
 Drive-In-Theater Mfg. Co., 505 W. 9th, Kansas City, Mo.—C
 Dubrow Devel. Co., 235 Penn St., Burlington, N.J.—A
 Electrodyne Co., Endicott St., Norwood, Mass.—B
 Electro Impulse Lab., 62 White St., Red Bank, N.J.—K.O
 Electronic Control Corp., 1573 E. Forest Ave., Detroit 7, Mich.—E.R
 Electronic Control Systems, 2138 Westwood Blvd., Los Angeles 25, Calif.—D.M
 Electronic Instrument Co., 84 Withers St., Brooklyn 11, N.Y.—A.B
 Electronic Measurements Co., Lewis St. & Maple Ave., Eatontown, N.J.—R
 Electronic Research Associates, 715 Main St., N. Caldwell, N.J.—Y
 ELECTRONIC TUBE CORP., 1200 E. Mermaid Lane, Philadelphia 18, Pa.—W
 Electron-Radar Products, 1041 N. Pulaski Rd., Chicago 51, Ill.—K
 Electro-Physics Co., 287 E. Broadway, New York 7, N.Y.—E
 Electro-Tech Equip., 308 Canal St., New York, N.Y.—B.C
 Elk Electronic Labs. Inc., 333 W. 52 St., New York 19, N.Y.—A.C.I.L.T
 EL-Tronics, Inc., 437 N. 5th St., Philadelphia 24, Pa.—A.F.J.N.O.R.T
 Empire Devices, Inc., 38-25 Bell Blvd., Bayside 61, N.Y.—I.L.Q
 Endeavor Corp., 989 S. Fair Oaks Ave., Pasadena 2, Calif.—F.R
 Enkis Equip. Co., 431 S. Dearborn St., Chicago 5, Ill.—P
 Ellis Associates, Box 77, Pelham, N.Y.—W
 Epsoe, Inc., 126 Mass. Ave., Boston 15, Mass.—J
 FAIRCHILD CAMERA & INSTRUMENT CORP., Robbins Lane, Syosset, N.Y.—N
 FAIRCHILD ENGINE & AIRPLANE CORP., Wyandanch, L.I., N.Y.—Y
 Feiler Engineering & Mfg. Co., 8026 N. Monticello Ave., Skokie, Ill.—A.B.C
 Erwood, Inc., 1770 Berenau Ave., Chicago 13, Ill.—R
 Franklin Electronics Inc., 415 W. Pike St., Philadelphia 40, Pa.—A.M.R.W
 Fraser Development Lab., Box 73, Huntington Station, N.Y.—J
 F.R. Machine Works, Electronics & X-Ray Div., 44-14 Astoria Blvd., Long Island City 3, N.Y.—K.O
 Garod Radio Corp., 70 Washington St., Brooklyn 1, N.Y.—O
 GENERAL COMMUNICATION CO., 681 Beacon St., Boston 15, Mass.—M
 GENERAL ELECTRIC CO., Apparatus Div., 1 River Rd., Schenectady 5, N.Y.—R
 GENERAL ELECTRIC CO., Germanium Products Div., Electronics Park, Syracuse, N.Y.—X
 General Electronics, Inc., 32 W. 22 St., New York 10, N.Y.—A.O.Q
 GENERAL RADIO CO., 275 Massachusetts Ave., Cambridge 39, Mass.—A.F.H.I.I.R.T
 Gilmore Industries, Inc., 5713 Euclid Ave., Cleveland 3, Ohio—W.X
 G & M Equipment Co., 7315 Varna Ave., North Hollywood, Calif.—O
 Gow-Mac Instrument Co., 100 Kings Rd., Madison, N.J.—G
 GULTON MFG. CORP., 212 Durham Ave., Metuchen, N.J.—Q.R
 Hall Inc., F. Sumner, Amityville, N.Y.—C
 Hartman Eng. Co., 182 Oakland St., Springfield 8, Mass.—Y
 Hathaway Instrument Co., 1315 S. Clark St., Denver 10, Colo.—R.W
 Hazeltine Electronics Corp., 58-25 Little Neck Pkwy., Little Neck 62, N.Y.—O
 Hays Corp., East 8 St., Michigan City, Ind.—G
 Heath Co., 305 Territorial, Benton Harbor, Mich.—B.I
 Heyer Products Co., 471 Cortlandt St., Belleville 9, N.J.—G
 Hewlett-Packard Co., 395 Page Mill Rd., Palo Alto, Calif.—F.H
 HICKOK ELECTRICAL INSTRUMENT CO., 10514 Dupont Ave., Cleveland 8, Ohio—L
 Hufford Machine Works, Electronics Div., 2201 Carmelina Ave., Los Angeles 64, Calif.—D
 Hull & Co., R. O., 1300 Parsons Ct., Rocky River, Ohio—C.T
 Ivcon Mfg. Co., 2961 E. Colorado St., Pasadena 8, Calif.—K
 Industrial Control Co., Straight Path & Arlington Ave., Wyandanch, N.Y.—N
 INDUSTRIAL TEST EQUIPMENT CO., 55 E. 11 St., New York 3, N.Y.—F.H
 Instrument Development Labs., 163 Highland Ave., Needham Heights 94, Mass.—F
 INSULATED CIRCUITS, INC., 115 Roosevelt Ave., Belleville, N.J.—K
 Insuline Corp. of America, 186 Granite St., Manchester, N.H.—I.J.K.M.V
 Int'l. Research & Devel. Corp., 168 E. Hosack St., Columbus 7, Ohio—R
 Industries, 6110 Wilshire Blvd., Los Angeles 36, Calif.—E
 Jackson Electrical Instrument Co., 18 S. Patterson Blvd., Dayton 2, Ohio.—A.E.T

Jarrell-Ash Co., 165 Newbury St., Boston 16, Mass.—O
 Johnson-Williams, Ltd., 2625 Park Blvd., Palo Alto, Calif.—G
 Kalbfell Laboratories, Inc., 1090 Morena, San Diego 10, Calif.—B.I.T
 KAY ELECTRIC CO., 14 Maple Ave., Pine Brook, N.J.—F.L.O.R.S.T.Y
 Kearfott Co., 1378 Main Ave., Clifton, N.J.—N
 Kinetix Inst. Co., 902 Broadway, New York 10, N.Y.—N
 Kings Electronics Co., 40 Marbledale Rd., Tuckahoe, N.Y.—K.M.X
 Krohn-Hite Instrument Co., 580 Mass. Ave., Cambridge 39, Mass.—A.F.H.N.Q.R.T
 Kybernetes Corp., 1100 Raymond Blvd., Newark 5, N.J.—R
 Lab. for Electronics, Inc., 75 Pitts St., Boston, Mass.—J
 Lee Electronic Labs., Inc., 233 Dudley St., Boston 19, Mass.—B.C
 LIBRASCOPE INC., 1607 Flower St., Glendale 1, Calif.—E
 Link Aviation Inc., Binghamton, N.Y.—N
 Liston-Becker Instrument Co., 649 Hope St., Springdale, Conn.—G
 Loral Electronics Corp., 794 E. 140 St., New York 54, N.Y.—S.T
 L & O Research & Devel. Corp., 134 N. Wayne Ave., Wayne, Pa.—N
 Magna-Pulse Corp., 140 Nassau St., New York 38, N.Y.—J
 Magnetic Amplifiers, Inc., 632 Tinton Ave., New York 55, N.Y.—Y
 Magnex Corp., 90-28 Van Wyck Expressway, Jamaica, N.Y.—J.K.M.N
 MANUFACTURERS ENGG. & EQUIP. CORP., York & Mill Rds., Hatboro, Pa.—G
 Marine View Electronics, 744 E. 138 St., New York 54, N.Y.—A.Q
 McShan Development Corp., 71 Murray St., New York 7, N.Y.—C
 MEASUREMENTS CORP., Ronnton, N.J.—I
 Menlo Research Lab., P. O. Box 522, Menlo Park, Calif.—E.P
 MICROWAVE ASSOCIATES, INC., 22 Cumington St., Boston 15, Mass.—O
 Midwest Eng'g. Devel. Co., 3648 State Line, Kansas City 3, Kansas—K.M
 MILLIVAC INSTRUMENT CORP., 444 Second St., Schenectady, N.Y.—C
 Mine Safety Appliances Co., 201 N. Braddock Ave., Pittsburgh 8, Pa.—G
 Nassau Research & Development Associates, 66 Main St., Mineola, N.Y.—K
 National Capacitor Co., 585 Washington St., Quincy 69, Mass.—B
 National Research Corp., Equip. Div., 70 Memorial Dr., Cambridge 42, Mass.—G
 National Spectrographic Labs., 6300 Euclid Ave., Cleveland 8, Ohio—O
 Northeastern Eng'g., Inc., S. Bedford St., Manchester, N.H.—O
 Offner Electronics, Inc., 5320 N. Kedzie Ave., Chicago 25, Ill.—F
 OMCOTest Equip., Box 196, N. Las Vegas, Nev.—C
 Oregon Corvek Co., 1005 N.W. 16th Ave., Portland, Ore.—G
 Owen Labs., 412 Woodward Blvd., Pasadena 10, Calif.—Y
 Pacific Mercury TV Mfg., 5955 Van Nuys Blvd., Van Nuys, Calif.—M.N.R.W
 Panoramic Radio Prods., 10 S. 2nd Ave., Mt. Vernon, N.Y.—A.F.H.I.K.L.O.Q.R.T
 Phoenix Precision Instrument Co., 3803 N. 5th St., Phila. 40, Pa.—E.O.U.V.Z
 Photon Research Products, 421 N. Foothill Blvd., Pasadena 8, Calif.—Q
 Plymouth Electronics Corp., 50 Kingsbury St., Worcester, Mass.—A.M
 POLARAD ELECTRONICS CORP., 100 Metropolitan Ave., Brooklyn 11, N.Y.—K.M.O.T
 Polyphase Instrument Co., 701 Haverford Rd., Bryn Mawr, Pa.—Y
 Precision Apparatus Co., 92-27 Horace Harding Blvd., Elmhurst, N.Y.—C
 Precision Electronics Inc., 9101 King Ave., Franklin Park, Ill.—A.C
 Process & Instruments, 15 Stone Ave., Brooklyn 33, N.Y.—G
 PYRAMID ELECTRIC CO., 1445 Hudson Blvd., N. Bergen, N.J.—B
 Radio City Products Co., 101 W. 31st St., New York 1, N.Y.—C
 Radiation, Inc., P.O. Box Q, Melbourne, Fla.—M.O
 Radio Sonic Corp., 111 Bleeker St., New York 12, N.Y.—F.H.O.Q.T
 Rawson Electrical Instrument Co., 117 Potter St., Cambridge 42, Mass.—J
 Rockwell Eng'g. Co., 4063 N. New Jersey St., Indianapolis 6, Ind.—N
 Rubicon Co., Ride Ave., at 35th St., Philadelphia 32, Pa.—G.J
 Sanders Associates, Inc., 137 Canal St., Nashua, N.H.—O
 Schauer Mfg. Corp., 4500 Alpine Ave., Cincinnati 36, Ohio—R
 Scott, Inc., Hermon Hoamer, 385 Putnam Ave., Cambridge 39, Mass.—A.F.L.R
 Sensitive Research Instrument Corp., 9 Elm Ave., Mt. Vernon, N.Y.—C.F.J
 Servo Corp. of America 2020 Jericho Turnpike, New Hyde Pk., L.I., N.Y.—F.N.O
 SHALICROSS MFG. CO., 520 Pusey Ave., Colingdale, Pa.—B
 Sierra Electronic Corp., 1050 Brittan Ave., San Carlos, Calif.—H.O.T
 Sperry Gyroscope Co., Great Neck, N.Y.—F.K.M.O.R.A.A
 Sperry Products Inc., Shelter Rock Rd., Danbury, Conn.—Q

SPRAGUE ELECTRIC CO., 233 Marshall St., N. Adams, Mass.—H
 Sterling Instruments Co., 15310 W. McNichols, Detroit 35, Mich.—Z
 Stewart Instrument Co., 6507 Grand River Ave., Detroit 8, Mich.—P
 Sun Electric Corp., Harlem & Avondale Aves., Chicago 31, Ill.—G
 Supreme, Inc., Greenwood, Miss.—C
 Technical Products Co., 19 N. Dunlap, Medical Center, Memphis 1, Tenn.—E.P.Q.V.W
 Techno Instrument Co., 6666 Lexington Ave., Los Angeles 38, Calif.—F.L.R
 TECHNOLOGY INSTRUMENT CORP., 531 Main St., Acton, Mass.—C.N
 Tele-Beam Industries, 6th & Soscol Ave., Napa, Calif.—Q
 TELECHROME MFG. CORP., 88 Merrick Rd., Amityville, L.I., N.Y.—E
 Tele-Matic Industries, Inc., 1 Joralemon St., Brooklyn, N.Y.—S
 Television Zoomar Corp., 500 5th Ave., New York 38, N.Y.—S
 TEL-INSTRUMENT CO., 728 Garden St., Carlstadt, N.J.—S
 TEXAS INSTRUMENTS INC., 6000 Lemmon Ave., Dallas 9, Tex.—J.K.M
 Thompson Clock Co., H.C., 38 Federal St., Bristol, Conn.—B.C.F.T
 TRANSISTOR PRODUCTS INC., Snow & Union Sts., Boston 35, Mass.—Y
 Ultrasonic Corp., 61 Rogers St., Cambridge 42, Mass.—F.D.M.N.O.Q.R
 U.M. & F. MFG. CORP., 10929 Van Owen St., N. Hollywood, Calif.—E.V
 Union Spring & Mfg. Co., 1057 Summit Ave., Jersey City N.J.—A.M.N.S
 U.S. Testing Co., 1415 Park Ave., Hoboken, N.J.—A.B.C.T
 Universal Microwave, 380 Hillside Ave., Hillside, N.J.—K.O
 VECTRON, INC., 400 Main St., Waltham 54, Mass.—K.M.O
 Vibro-Ceramics Corp., Metuchen, N.J.—Q
 Vibroscope Co., 6 E. 39th St., New York 16, N.Y.—R
 VICTORY ENGG. CORP., Springfield Rd., Union, N.J.—G
 Vitro Corp. of America, 233 Broadway, New York 7, N.Y.—G
 Walkirt Co., 145 W. Hazel St., Inglewood 3, Calif.—F
 Welch Electric Co., 1221 Wade St., Cincinnati 14, Ohio—A.E.Q
 Westberg Mfg. Co., 144 S. Coombs St., Napa, Calif.—A.A
 Western Sound & Electric Labs., Inc., 805 S. 5th St., Milwaukee 4, Wis.—B
 WESTON ELECTRICAL INSTRUMENT CORP., 614 Frelinghuysen Ave., Newark 5, N.J.—C
 Weston Labs., Inc., Old Littleton Rd., Harvard, Mass.—K
 WICKES ENGG. & CONST. CO., 12th St. & Ferry Ave., Camden, N.Y.—E.S
 Wright Eng'g. Co., 180 E. California St., Pasadena 1, Calif.—F.H.O.R.X

6—ANTENNAS COMMERCIAL

Antennas, aircraft A
 Antennas, broadcasting, AM B
 Antennas, broadcasting, FM & TV C
 Antennas, fixed station D
 Antennas, loop F
 Antennas, marine G
 Antennas, microwave H
 Antennas, mobile I
 Antennas, radar J
 Antennas, railroad K
 Antennas, receiving, FM & TV L
 Antennas, rotary beam M
 Antennas, slotted line N
 Antennas, UHF O
 Antennas, VHF P
 Radiators, FM & TV Q
 Reflectors S
 Rotators T
 Towers & Supports, commercial R

Abel Mfg. Co., 32-20 37th Ave., Long Island City, 1, N.Y.—A.F.H.I.J.K.L.O.P.Q.T
 Aeronautical Electronics, Inc., Raleigh-Durham Airport, Raleigh, N.C.—A.F.P
 Aeronautical Radio Mfg. Co., 155 First St., Mineola, N.Y.—A
 Air Associates, Teterboro, N.J.—O.P
 AIRCRAFT RADIO CORP., P.O. Box 150, Ronnton, N.J.—A.F.O.P
 AIRTRON INC., 1103 W. Elizabeth Ave., Linden, N.J.—H
 Allison Steel Mfg. Co., P.O. Box 6067, Phoenix, Arizona—B
 Alpar Mfg. Co., 2910 Spring St., Redwood City, Calif.—B.D.R
 Alpha Erection Corp., Speer, Ill.—R
 American Communications Corp., 806 Broadway, New York 7, N.Y.—L
 American Electroengraving Corp., 2040 Colo. Ave., Santa Monica, Calif.—D.E.H.J
 American Electronics Corp., 2040 Colorado Ave., Santa Monica, Calif.—D.E

American Electronic Labs., Inc., 641 Arch St., Philadelphia 6, Pa.—C.P.

AMERICAN PHENOLIC CORP., 1830 South 54 Ave., Chicago 50, Ill.—D.I.K.L.O.P

American Screen Products Co., Miami, Fla.—C.L

American Tower Co., Box 29, Shelby, Ohio—R

Amy, Aceves & King, 11 W. 42 St., New York 36, N.Y.—L

ANDREW CORP., 363 E. 75 St., Chicago 19, Ill.—B.C.D.H.I.K.N.O.P.Q

Ansley Electronics, Inc., 86 Tremont St., Meriden, Conn.—H.J.N

Antenna Specialists Co., 12435 Euclid Ave., Cleveland 6, Ohio—A.D.I.J.K

Applied Electro Mechanics Inc., National Airport Hangar 9, Washington 1, D.C.—A.F

Applied Electronics Co., 1246 Folsom St., San Francisco 3, Calif.—G.I

Artted Co., 367 Worthington St., Springfield 3, Mass.—F.L

Atlas Metal Stamping Co., Castor & Kensington Aves., Philadelphia 24, Pa.—A.J.M.N.O

Atlas Precision Products Co., 3801 Castor Ave., Philadelphia 24, Pa.—J

Audio Products Corp., 2265 Westwood Blvd., Los Angeles 64, Calif.—A.O

Bailey Corp., Arnold, Amoskeag Bank Bldg., Manchester, N.H.—B.C.D.G.I

Barlow Electrical Mfg. Co., 155 E. 128 St., New York 35, N.Y.—G.H.O.P

Bassett, Inc., Rex, 1314 N. E. 17 Court, Fort Lauderdale, Fla.—A.D.G.I.L.M.R.S

Beacon Corp., 2846 Milwaukee Ave., Chicago 18, Ill.—L

Beam Instruments Corp., 350 5th Ave., New York 1, N.Y.—H.J.P

BENDIX RADIO DIV., BENDIX AVIATION CORP., E. Joppa Rd., Towson 4, Md.—A.D, F.I.K.P

Besteraft Products Co., 626 Broadway, New York 12, N.Y.—O.P

Blair Co., J.P., 89 Union St., Mineola, N.Y.—J.N

BLAW-KNOX CO., P.O. Box 1198, Pittsburgh 30, Pa.—R

BOGART MFG. CORP., 315 Seigel St., Brooklyn 6, N.Y.—H.J.N.S

Bone Eng'g. Corp., 701 W. Broadway, Glendale 4, Calif.—A.F.H.J.M.N.S.T

Brach Mfg. Corp., 200 Central Ave., Newark 4, N.J.—C.O.P.S

Brooks & Perkins, 1950 W. Fort St., Detroit 16, Mich.—J.T

Budd-Stanley Co., 43-01 22nd St., Long Island City 1, N.Y.—H.J.N

Budelman Radio Corp., 375 Fairfield Ave., Stamford, Conn.—D.H.O.P

Buggie & Co., H.H., 726 Stanton St., Toledo 1, Ohio—J

Canoga Corp., 5955 Sepulveda Blvd., Van Nuys, Calif.—H.J.T

Capehart-Farnsworth, Div. I.T.&T., Ft. Wayne, Ind.—J

Century Electronics, div. Century Metalcraft Corp., 14844 Oxnard St., Van Nuys, Calif.—H.J

Clearbeam TV Antenna Co., 100 Prospect Ave., Burbank, Calif.—L.O.P.R

COAXIAL CONNECTOR CO., 35 North 2nd Ave., Mt. Vernon, N.Y.—H.N

Collcraft, Inc., Jandus Rd., Cary, Ill.—F

COLLINS RADIO CO., 855 35 St., N.E., Cedar Rapids, Ia.—A.O.P

Colortone Electronics, 238 William St., New York 38, N.Y.—I

Colorvision Plastics, Inc., 247 Atlantic Ave., Boston 10, Mass.—J

Communications Co., P.O. Box 6250, Coral Gables, Fla.—D.I.P

Communication Devices Co., 2331 12 Ave., New York 27, N.Y.—D.G.P

Conn. Marine Instrument Co.—Essex, Conn.—G

Conn. Telephone & Electric Corp., 70 Britannia St., Meriden, Conn.—D.H.I.K.O

Creative Eng'g. Corp., 10816 Burbank Blvd., N. Hollywood, Calif.—A.H.I.J.N.Q.T

Crown Controls Co., 124 S. Washington St., New Bremen, Ohio—S

Cubic Corp., 2841 Canon St., San Diego 6, Calif.—A.H.J.O

Dalmo Victor Co., 1414 El Camino Real, San Carlos, Calif.—H.J.T

Danbury-Knudson, Inc., 15 Thorpe St., Danbury, Conn.—I.K

Davis Electronics, 4313 W. Magnolia Blvd., Burbank, Calif.—L

Dayton Aviation Radio & Equip. Corp., Dayton Municipal Airport, Vandalia, Ohio—A

DeMornay-Bonardi, Inc., 780 S. Arroyo Pkway, Pasadena, Calif.—H

Diatron Co., 3327 Dixie Drive, Houston 21, Texas—I

Douglas Microwave Co., 11 Beechwood Ave., New Rochelle, N.Y.—H.N

Dubrow Devel. Co., 235 Penn St., Burlington, N.J.—A.H.L.N.O.P

DUMONT LABS. INC., Allen R., TV Transmitter Div., Mobile Comm. Dept., 1500 Main Ave., Clifton, N.J.—H.I.O.P.R.T

Dynacorn Corp., 9823 Clinton, Cleveland, Ohio—A

Eldico of N.Y., Inc., 70-72 E. Second St., Mineola, L. I., N.Y.—F.G.I

ELECTRICAL TOWER SERVICE, INC., 206 S. Washington St. or P.O. Box 1205, Peoria 2, Ill.—R

Electro Craft Inc., 68 Jackson St., Stamford, Conn.—A.E

Electron-Radar Products, 1041 N. Pulaski Rd., Chicago 51, Ill.—A.H.J

Electrotech Corp., 15601 Arrow Hwy., Azusa, Calif.—A

Elk Electronic Labs. Inc., 333 W. 52 St., New York 19, N.Y.—F

Elm Laboratories, 18 S. Broadway, Dobbs Ferry, N.Y.—A.J.R

EL-RAD MFG. CO., 2800 W. Cullom, Chicago 18, Ill.—F

Emco Derrick Equip., P.O. Box 1289, Houston 1, Texas—R

Erico Radio Labs., 637 Stewart Ave., Garden City, N.Y.—D.O.P

Espey Mfg. Co., 528 E. 72 St., New York 21, N.Y.—P

FEDERAL TELECOMMUNICATION LABS., 500 Washington Pl., Nutley, N.J.—C.O.P

FEDERAL TELEPHONE & RADIO CO., Div. I.T.&T., 100 Kingsland Rd., Clifton, N.J.—D.I.K

Ferro Electric Products, Kirkland, Ill.—L.O.P

Fisher Research Lab., 1961 University Ave., Palo Alto, Calif.—F

Flader Inc., Fredric, 583 Division St., N. Tonawanda, N.Y.—A

G & M Equip. Co., 7815 Varna Ave., N. Hollywood, Calif.—D.F.I.J.O.P.R

GABRIEL ELECTRONICS DIV., Gabriel Co., Endicott St., Norwood, Mass.—A.C.D.G.H.I, J.K.O.P.Q.S.T

GATES RADIO CO., 123 Hampshire St., Quincy, Ill.—C

Gavitt Mfg. Co., Brookfield, Mass.—F

GEE-LAR MFG. CO., 819 Elm St., Rockford, Ill.—J

General Cement Mfg. Co., 919 Taylor Ave., Rockford, Ill.—C.L.O.P.R

GENERAL ELECTRIC CO., Broadcast Equip. & Commercial Equip. Div., Electronics Park, Syracuse, N.Y.—C.H.J

GENERAL ELECTRIC CO., Electronics Div., Syracuse, N.Y.—D.H.I.P.T

General Electrosonics, Inc., 32 W. 22 St., New York 10, N.Y.—J

General R-F Fittings Co., 702 Beacon St., Boston 15, Mass.—H

General Riveters, Inc., Elmwood & Hertel, Buffalo 7, N.Y.—S

Gonset Co., 801 S. Main St., Burbank, Calif.—L.M.O.P.T

Graf, R. F., 780 West End Ave., New York 25, N.Y.—L.O.P

GRAYBAR ELECTRIC CO., 420 Lexington Ave., New York 17, N.Y.—D.R

G. W. Associates, P.O. Box 2263 El Segundo, Calif.—H

Haydon Products Corp., 1801 5 Ave., Brooklyn 15, N.Y.—O.P.R

Hazeltine Electronics Corp., 58-25 Little Neck Pkwy., Little Neck 62, N.Y.—A.J

Heyer Products Co., 471 Cortlandt St., Belleville 9, N.J.—A.P

Hi-Lo TV Antenna Corp., 3540 N. Ravenswood Ave., Chicago 13, Ill.—L.O.P

HOUSTON FEARLESS CORP., 11801 W. Olympic Blvd., Los Angeles 64, Calif.—H

Hughes & Phillips, P.O. Box 686, Encino, Calif.—R

Hudson American Corp., 25 West 43 St., New York, N.Y.—G

Hycon Mfg. Co., 2961 E. Colorado St., Pasadena 8, Calif.—H

Hy-Lite Antennae, Inc., 242 E. 137 St., New York 51, N.Y.—L.M.O.P

IDECO Div., Dresser-Stacke Co., 875 Michigan Ave., Columbus 15, Ohio—R

I.E. Mfg. Co., 325 N. Hoyne Ave., Chicago 12, Ill.—O.P.R

INSULATED CIRCUITS, INC., 115 Roosevelt Ave., Belleville, N.J.—H

Insuline Corp. of America, 186 Granite St., Manchester, N.H.—A.F.I.K.L.O.P

Jefferson, Inc., Ray, 40 E. Merrick Rd., Freeport, N.Y.—G

JFD MFG. CO., 6101 16 Ave., B'klyn., N.Y.—L.O.P.S

JOHNSON CO., E. F. Waacna, Minn.—M.F

Kaiser Metal Products, Inc., Bristol, Pa.—H.J.T

Kaufell Labs., 1090 Morena Blvd., San Diego 10, Calif.—L

Kay-Townes Antenna Co., 1511 Dean Ave., Rome, Ga.—L.O.P

Kearfott Co., 1378 Main Ave., Clifton, N.J.—F

Keller Products, 41 Union St., Manchester, N.H.—J.H.T

Kennedy & Co., D. S., 432 S. Main St., Cohasset, Mass.—H.J.T

Kings Electronics Co., 40 Marbledale Rd., Tuckahoe, N.Y.—F.G.H.J.L.N.O.P.T

Kings Microwave Co., 719 Main St., New Rochelle, N.Y.—H

Kirby Products Corp., 175 Fifth Ave., New York 10, N.Y.—O.P

Kline Iron & Metal Co., 1225 Huger St., Columbia, S.C.—R

Kling Metal Spinning Co., 174 Centre St., New York 13, N.Y.—T

Land-Air, Inc., 201 N. Wells St., Chicago 6, Ill.—A

Lane Electronics Co., 7254 Atoll Ave., N. Hollywood, Calif.—A.F

Lavoie Labs., Morganville, N.J.—C.J.O.P.R

Lear, Inc., 11916 W. Plco Blvd., Los Angeles 64, Calif.—A.D.F.I.P

Lehigh Structural Steel Co., 17 Battery Pl., New York 4, N.Y.—R

Leader Electronics, Inc., 2925 E. 65th St., Cleveland 27, Ohio—S

Lerner Instrument & Electronics Mfg. Corp., GPO Box 620, Brooklyn 1, N.Y.—H.J.N

Lieco, Inc., 147 Ocean Ave., Lynbrook, N.Y.—H.J.N

Link Radio Corp., 125 W. 17th St., New York 11, N.Y.—D.I.K.L.O.P.Q

Lyman Electronic Corp., 12 Cass St., Springfield, Mass.—L.O.P

Lysco Mfg., Co., 1401 Clinton St., Hoboken, N.J.—E.G

Mackay Radio & Telegraph Co., 345 Hudson St., New York, N.Y.—G.J

Macon Electronics, Merchant St. Warrensburg, Ill.—O.P

MAGNAVOX CO., Fort Wayne 4, Ind.—J

Marine View Electronics, 744 E. 138 St., New York 54, N.Y.—L

Mark Products Co., 3547-49 Montrose Ave., Chicago, Ill.—A,B,C,D,G,H,I,J,K,L,M,N,O,P,T

Maryland Electronic Mfg. Corp., 5009 Calvert Rd., College Park, Md.—D.J.O.P

Maxson Corp., W.L., 460 W. 34 St., New York 1, N.Y.—A.H.J.T

MELPAR, 452 Swann Ave., Alexandria, Va.—A.H.I.J

Meridian Metal Craft Inc., 213 W. Whittier Blvd., Whittier, Calif.—H.J.T

Metal Products Co., Craighead St., Nashville 4, Tenn.—B.C

Microwave Devel. Labs., 22D Grove St., Waltham 54, Mass.—H

Miller TV Co., 2890 Naomi, Burbank, Calif.—L.O

Mitchell Industries, Mineral Wells, Tex.—A

Molded Insulation Co., 335 E. Price St., Philadelphia 44, Pa.—A.G.J

NAER Corp., 11777 Santa Monica Blvd., West Los Angeles 25, Calif.—C.O.P

Nassau Research & Development Associates, 68 Main St., Mineola, N.Y.—H

National Aeronautical Corp., 180 S. Main St., Ambler, Pa.—A

National Electronic Mfg. Corp., 42-08 Vernon Blvd., Long Island City 1, N.Y.—F.I.O.P

National Instrument Co., 23 E. 26 St., New York 10, N.Y.—A.H

Nichols Products Co., 325 W. Main St., Moorestown, N.J.—A.H.N

N.R.K. MFG. & ENG'G. CO., 4601 W. Addison St., Chicago 41, Ill.—H

Nutone, Inc., Madison & Redbank Rd., Cincinnati 27, Ohio—K

Oregon Corvek Co., 1005 N.W. 16 Ave., Portland, Ore.—D.L.O

Otis Radio & Electric Corp., 700 Central Ave., Hawarden, Iowa—F

Pearce-Simpson, Inc., 3023 Coral Way, Miami 34, Fla.—G

PHAOSTRON CO., 151 Pasadena Ave., S. Pasadena, Calif.—A

Philmore Mfg. Co., 113 University Pl., New York 3, N.Y.—F

Pioneer Mfg. Co., Huntley, Ill.—R

Portchester Instrument Corp., 114 Wilkins Ave., Portchester, N.Y.—H

Precision Associates 354 Cumberland St., Brooklyn 17, N.Y.—D.E

Premax Products Div., Chisholm-Ryder Co., Highland & College Aves., Niagara Falls, N.Y.—G.I.P

Premier Instrument Corp., 52 W. Houston St., New York 12, N.Y.—H

PRODELIN, INC., 307 Bergen Ave., Kearny, N.J.—H.P.R.T

PRODUCT DEVEL. CO., 307 Bergen Ave., Kearny, N.J.—H.O.P

Q-Line Mfg. Corp., 1562 61 St., Brooklyn 19, N.Y.—A.F.I.J.L.M.O.P.T

Q.L.C. Corp., 10 Aubrey St., Summit, N.J.—F

Radiart Corp., 3455 Vega Ave., Cleveland 18, Ohio—L.L.O.P

RADIO CORP. OF AMERICA, RCA Victor Div., Eng'g. Products Div., Camden 2, N.J.—R.C.D.H.I.J.K.N.O.P.Q.R

RADIO ENG'G. LABS., 36-40 37 St., Long Island City 1, N.Y.—D.H

Radion Corp., 1150 W. Wisconsin Ave., Chicago 14, Ill.—C.E.I.L.O.P

Railway Communications, Inc., Raytown, Mo.—I.K

Resdel Eng'r., 2351 Riverside Dr., Los Angeles 39, Calif.—H.J

Reynolds Radio & Equip. Lab., H.B., 219 Stone St., Onelda, N.Y.—L

Rich Electronics, 212 N.W. 8 Ave., Miami 36, Fla.—G.P

Robberson Marine, 44 Sintsink Dr. E., Pt. Washington, N.Y.—G

Roesch Co., D. J., 2200 S. Figueroa St., Los Angeles 7, Calif.—A.H

Roflan Co., Topsfield, Mass.—A

Rohn Mfg. Co., 116 Limestone, Peoria, Ill.—R

Rowe Industries, 1702 Wayne St., Toledo 9, Ohio—A.G

Rvtel Electronics Mfg. Co., 9820 Irwin Ave., Inglewood, Calif.—O

Sanders Associates, 137 Canal St., Nashua, N.H.—H.J

S/C Labs, Inc., 37 George St., Newark 6, N.J.—L.M.O.P

Schutter Mfg. Co., Carl W., 80 E. Montauk Highway, Lindenhurst, N.Y.—H

Scientific Associates, Inc., 580 Virginia Ave., N.E., Atlanta, Ga.—H.J

Selectar Industries, Inc., 3100 Ocean Parkway, Brooklyn 35, N.Y.—H

Servo Corp. of America, 20-20 Jericho Turnpike, New Hyde Park, N.Y.—F

Sightmaster of Calif., Gillespie Airport, Santee, Calif.—H.J.O

Silver Bay Equip. Co., 5004 20th N.W., Seattle 7, Wash.—G.O.P.T

Skyline Tower Co., 2436 W. 59th St., Chicago 29, Ill.—A,B,C.H.Q.R

Slate & Associates, Claude C., 11370 W. Olympic Blvd., Los Angeles 64, Calif.—A.L.O.P

Snyder Mfg. Co., 22 & Ontario St., Philadelphia 40, Pa.—L.O.P.R

South. Industries of Md., Baltimore 8, Md.—R

South River Metal Prod. Co., 377 Turnpike, South River, N.J.—R
 Specialty Assembling, 79 Clifton Pl., Brooklyn 38, N.Y.—H,J
 Spencer-Kennedy Labs., 186 Mass. Ave., Cambridge 39, Mass.—L
 Sperry Gyroscope Co., Great Neck, N.Y.—H
 Sperrcraft, Inc., 4122 W. State St., Milwaukee 8, Wis.—A
 Spiraling Products Co., P.O. Box 411, Hicksville, L.I., N.Y.—O,P
 STANDARD ELECTRONICS CORP., 285 Emmit St., Newark 6, N.J.—G
 STAINLESS INC., North Wales, Pa.—R
 Superex Electronics Corp., 23 Atherton St., Yonkers, N.Y.—B
 Tabet Mfg. Co., 1336 Ballentine Blvd., Norfolk, Va.—R
 TECHNICAL APPLIANCE CORP., 1 Taco St., Sherburne, N.Y.—A,D,G,I,J,K,L,M,O,P,Q,R,T
 Technical Material Corp., 700 Fenimore Rd., Mamaroneck, N.Y.—L,L
 Teiner Co., Roland 134 Tremont St., Everett, Mass.—A,D,J
 Tele-Beam Industries, 6th & Soscol Ave., Napa, Calif.—A,D,I,L,O,P
 Tele-Ex Prod Products, Berwick, Pa.—R
 Telerad Mfg. Corp., 1440 Broadway, New York 18, N.Y.—H,J
 Television Associates, E. Michigan St., Michigan City, Ind.—T
 Television Co. of America, 1761 Lincoln Blvd., Santa Monica, Calif.—M,O,P
 Telkor, Inc., Telegraph Rd., Elyria, Ohio—L,O,P,T
 Telrex, Inc., Neptune Hwy., Asbury Park, N.J.—D,I,L,M,O,P
 Tempo T-V Mfg. Corp., 100 Prospect Ave., Burbank, Calif.—L,O,P,R
 Tennesal, Quinc., Ill.—L,M,P
 Texas Instruments Inc., 6000 Lemmon Ave., Dallas 9, Texas—J
 Thompson Products Inc.—2196 Clarkwood Rd., Cleveland 3, Ohio—A,J
 T. J. Mfg. Corp., 1020 S. Josephine St., Martinsville, Ind.—F
 Torngren Co., C. W., 236 Pearl St., Somerville, Mass.—A,B,C,D,G,H,I,J,K,O,P,T
 Tower Construction Co., 1923 Geneva St., Sioux City 3, Iowa—H,R
 Towers Corp., 3332 E. 55th St., Cleveland 27 Ohio—R
 Tricraft Products Co., 1635 N. Ashland Ave., Chicago 22, Ill.—A,O,P
 Trilsch Co., John D., 1310 McKinney Ave., Houston, Tex.—R
 TRUSCON STEEL DIV., Republic Steel Corp., Youngstown 1, Ohio—B,R
 TV Labs, Inc., 5045 W. Lake St., Chicago 44, Ill.—A,L,O,P
 T-V Products Co., 145-68 228 St., Springfield Gardens 13, N.Y.—L,O,P
 Universal Products Eng'g. Co., 4100 Taylor Ave., Racine, Wis.—L,O,P,R
 Universal Microwave, 380 Hillside Ave., Hillside, N.J.—H,J
 Univox Corp., 102 Warren St., New York 7, N.Y.—A,J
 Upright, Inc., 1013 Pardee St., Berkeley 10, Calif.—R
 U.S. Testing Co., 1415 Park Ave., Hoboken, N.J.—A,G,H,L,O,P
 U. S. Tower Co., 219 Union Trust Bldg., Petersburg, Va.—H,R
 VECTRON, INC., 400 Main St., Waltham 54, Mass.—H,J
 Vesto Co., 1916 Clay St., North Kansas City, Mo.—R
 Video Industries Co., 42-46 Palmer Pl., Port Chester, N.Y.—L,O,P,T
 Ward Products Corp., div. Gabriel Co., 1148 Euclid Ave., Cleveland 15, Ohio—D,E,I,O,P
 WAVELINE, INC., Passaic Ave., Caldwell, N.J.—H
 West Coast Electronics Co., 5873 W. Jefferson Blvd., Los Angeles 16, Calif.—A,E,I,K,P
 Western Coil & Electrical Co., 215 State St., Racine, Wis.—R
 Western Electronic Enterprises, 3348 W. Compton Blvd., Gardena, Calif.—I
 Western Mfg. Co., 1400 W. 22 St., Kearney, Nebr.—A,D,E,F,G,H,I,L,M,N,O,P,S
 Weston Labs., Inc., Old Littleton Rd., Harvard, Mass.—H
 White Industries Inc., 421 W. 54th St., New York 19, N.Y.—A
 White & Son, J. L., 374 Verona Ave., Newark 4, N.J.—D,F,H,O
 Wilcox Electric Co., 1400 Chestnut St., Kansas City 27, Mo.—A,P
 WINCHARGER CORP., E. 7 at Division St., Sioux City 2, Iowa—B,R
 Wind Turbine Co., E. Market St. & Penn. R.R., West Chester, Pa.—B,D,M,R,S
 Wunderlich Radio Co., 2—5th Ave., New York 11, N.Y.—B,C,I,K,O,P,R
 Z & W Machine Products, 5100 St. Clair Ave.,

7—ANTENNAS, HOME

Antennas, Auto Radio I
 Antennas, home all-wave A
 Antennas, Indoor FM & TV J
 Antenna kits B
 Antennas, loop C
 Antennas, "Loopstick" K
 Antennas, master community L

Antennas, Outdoor FM & TV D
Antennas, UHF E
Antennas, VHF F
Rotators H
Towers & Supports, home G

Abel Mfg. Co., 32-20 37 Ave., Long Island City 1, N.Y.—A,B,C,D,E,F,I,J
 Acme Tool & Specialties Co., 224 N. Loomis St., Chicago 7, Ill.—E
 Admiral Corp., Equip. Div., 3800 W. Cortland St., Chicago 47, Ill.—B,E,F
 Advance Electronics Co., 8510 North End Ave., Oak Park 37, Mich.—B,D,E,F
 Aerolite Electronics, 507 26 St., Union City, N.J.—C,K
 Aeronautical Radio Mfg. Co., 155 1st St., Mineola, L.I., N.Y.—C,E,F
 All Channel Antenna Corp., 70-07 Queens Blvd., Woodside 77, N.Y.—D,E,F
 ALLIANCE MFG. CO., Alliance, Ohio—H
 Alpar Mfg. Co., Redwood City, Calif.—G
 Alproco, Inc., Mineral Wells, Texas—A,D,E,F,G
 Americ. Communications Corp., 306 Broadway, New York, N.Y.—D
 AMERICAN PHENOLIC CORP., 1830 S. 54 Ave., Chicago 50, Ill.—D,E,F
 American Tower Co., Box 29, Shelby, Ohio—G
 Amy, Aceves & King, 11 W. 42 St., New York, N.Y.—D
 Antenna Products, 3628 N. Lincoln Ave., Chicago 13, Ill.—D,E,F
 Antenna Specialists Co., 12435 Euclid Ave., Cleveland 6, Ohio—J
 Arnac Co., P.O. Box 1083, Macon, Ga.—G
 Arttel Co. Inc., 367 Worthington St., Springfield 3, Mass.—K
 Atlas Metal Stamping Co., Castor & Kensington Aves., Phila. 24, Pa.—E
 Audio Products Corp., 2265 Westwood Blvd., Los Angeles 64, Calif.—E
 Beacon Corp., 2846 Milwaukee Ave., Chicago 18, Ill.—D
 Bestcraft Products Co., 626 Broadway, New York 12, N.Y.—A,E,F,J
 Blonder-Tongue Labs. Inc., 526 North Ave., Westfield, N.J.—L
 Brach Mfg. Corp., 200 Central Ave., Newark 4, N.J.—E,F,H,J
 RUD RADIO INC., 2118 E. 55 St., Cleveland 3, Ohio—G
 Camburn Inc., 32-40 57th St., Woodside 77, N.Y.—B,D,E,F,I,J
 Camburn Sales & Mfg. Corp., P. O. Box 408, Battle Creek, Mich.—G
 CRC Electronics Co., 1310 Callowhill St., Philadelphia 23, Pa.—J
 Channel Master, Ellenville, N.Y.—D,E,F,G
 Clearbeam TV Antenna Co., 100 Prospect, Burbank, Calif.—B,D,E,F,G,J
 Cleveland Electronics, 6614 Euclid Ave., Cleveland 8, Ohio—E
 Communication Devices Co., 2331 12th Ave., New York 27, N.Y.—F
 Constad Laboratories, 214 W. 29 St., New York 1, N.Y.—G
 Control Electronics Co., 1925 New York Ave., Huntington Station, N.Y.—B,E,F,J
 Cornell-Dubilier Electric Corp., 333 Hamilton Blvd., S. Plainfield, N.J.—A,D,E,F,H,I,J
 Crowley & Co., Henry L., 1 Central Ave., W. Orange, N.J.—K
 Crown Controls Co., 124 S. Washington St., New Bremen, Ohio—H
 Danforth Mfg. Co., 831 S. 3 St., Monmouth, Ill.—E,F,G
 Davis Electronics, 4002 Burbank Blvd., Burbank, Calif.—E,F
 Deal Products, Inc., Hellertown Rd., Easton, Pa.—G
 Diatron Co., 3327 Dixie Dr., Houston 21, Texas—C
 Dubrow Devel. Co., 235 Penn St., Burlington, N. J.—D,E,F
 Elm Laboratories, 18 S. Broadway, Dobbs Ferry, N.Y.—G
 EL-RAD MFG. CO., 2800 W. Cullom, Chicago 18, Ill.—C,K
 Falmer Mfg. Co., 312 N. Walnut St., Youngstown 2, Ohio—A
 Ferro Electric Products, Kirkland, Ill.—B,D,E,F
 Fink Electronics Inc., 518 E. 95th St., Chicago 19, Ill.—D,E,F,J
 Finney Co., 4612 St. Clair Ave., Cleveland 3, Ohio—A,E,F
 FRETCO, INC., 406 N. Craig St., Pittsburgh 13, Pa.—A,B,D,E,F,G
 Gavitt Mfg. Co., Brookfield, Mass.—C
 GEE-LAR MFG. CO., 819 Elm St., Rockford, Ill.—E,F,G
 General Cement Mfg. Co., 919 Taylor Ave., Rockford, Ill.—A,B,C,D,E,F,G,I,J,K
 Gonset Co., 801 South Main St., Burbank, Calif.—B,D,E,F,G
 Graf, R. F., 780 West End Ave., New York 25, N.Y.—B,D,E,F,I,J
 Hansen Co., Wm., 165 Silverbrook, Niles, Mich.—G
 Haydon Products Corp., 1801 8th Ave., Brooklyn 15, N.Y.—E,F,G,J
 HEPPNER MFG. CO., P.O. Box 1207, Round Lake, Ill.—K
 Hi-Lo TV Antenna Corp., 3540 N. Ravenswood Ave., Chicago 13, Ill.—A,D,E,J
 Hy-Lite Antenna Co., 242 E. 137 St., New York 51, N.Y.—D,E,F
 I. E. Mfg. Co., 325 N. Hoyne Ave., Chicago 12, Ill.—B,E,F,G

Insuline Corp. of America, 186 Granite St., Manchester, N.H.—A,B,C,D,E,F,I,J
 JFD MFG. CO., 6101 16th Ave., Brooklyn 4, N.Y.—C,D,E,F,G,H,I,J,K
 JaMac Products Co., 4605 N.E. 118th Ave., Portland 20, Ore.—A,B,D,E,F,G,J
 Jerrold Electronics Corp., 26th & Dickinson Sts., Philadelphia 46, Pa.—L
 Jewell Inc., A. W., Elyria, Ohio—E,F
 JOHNSON CO., E. F., Waseca, Minn.—H
 Kalbfell Labs., 1090 Morena Blvd., San Diego 10, Calif.—D
 Kay-Towne Antenna, 1511 Dean Ave., Rome, Ga.—D,E,F
 Kenwood Eng'g. Co., 265 Colfax Ave., Kenilworth, N.J.—G
 K-G Electronics Corp., 2738 N. Sheffield Ave., Chicago 14, Ill.—D,E,F
 Kluge Co., Myron E., P.O. Box 26, Platte Center, Nebr.—D,J
 Land-Air, Inc., 201 N. Wells St., Chicago 6, Ill.—B
 La Pointe Electronics, 155 W. Main St. Rockville, Conn.—D,E,F,H,J
 Lavole, Labs., Morganville, N.J.—E,F
 Lender Electronics, Inc., 2925 E. 55th St., Cleveland 27, Ohio—H
 Lyman Electronic Corp., 12 Cass St., Springfield, Mass.—D,E,F
 Lynmar Engineers, 1432 N. Carlisle St., Philadelphia 21, Pa.—L
 Macon Electronics, Warrensburg, Ill.—D
 Mark Products Co., 3547-49 Montrose Ave., Chicago 18, Ill.—E,F
 Midwest Naturlite Co., 228 W. Kinzie St., Chicago 10, Ill.—E,F
 Miller Co., J. W., 5917 S. Main St., Los Angeles 3, Calif.—C
 Miller TV Co., 2890 Naomi, Burbank, Calif.—B,D,E
 Modern Wire Co., 39-30 Review Ave., Long Island City 1, N.Y.—B
 Morrow Radio Mfg. Co., 2794 Market St., Salem, Ore.—F
 NAER Corp., 11777 Santa Monica Blvd., West Los Angeles 25, Calif.—A,B,D
 National Electric Product Corp., 140 Stanwix St., Pittsburgh 22, Pa.—E,F,G
 National Electronic Mfg. Corp., 42-08 Vernon Blvd., Long Island City, N.Y.—A,B,C,D,E,F
 Neal Electronic Co., 215 S. Green St., Huntsville, Ala.—E,F
 Ohio Aerial Co., 4553 Lewis Ave., Toledo 12, Ohio—E,F
 Oregon Corvek Co., 1005 N.W. 16 Ave., Portland, Ore.—D,E
 Orthon, 196 Albion Ave., Paterson, N.J.—R
 Peerless Products Industries, 812 N. Pulaski Rd., Chicago 51, Ill.—J
 Petroff, Peter A., 127 Water St., New York 5, N.Y.—A,C,E,F,I,K
 PHILCO CORP., ACCESSORY DIV., "A" & Allegheny Aves., Philadelphia 34, Pa.—A,B,D,E,F,G,H,I,J
 Philmore Mfg. Co., 113 University Pl., New York 3, N.Y.—B
 Philson Mfg. Co., 60 Sackett St., Brooklyn 31, N.Y.—D,E,F,I
 Phoenix Electronics, Inc., 60 Island St., Lawrence, Mass.—B,D,E,F
 Pioneer Mfg. Co., Huntley, Ill.—G
 Pipestone Sales Co., P.O. Box 311, Pipestone, Minn.—G
 Plymouth Electronics Corp., 50 Kingsbury St., Worcester 3, Mass.—E,F
 Pratt, Albert, 1939 N. 18 St., Milwaukee 5, Wis.—H
 Precision Associates, 354 Cumberland St., Brooklyn 17, N.Y.—B
 Premax Products Div., Chisholm-Ryder Co., Highland & College Aves., Niagara Falls, N.Y.—F,I
 Q.L.C. Corp., 10 Aubrey St., Summit, N.J.—K
 Q-Line Mfg. Corp., 1562 61 St., Brooklyn 19, N.Y.—A,B,C,D,E,F,G,I,J
 Radiart Corp., 3455 Vega Ave., Cleveland 13, Ohio—D,E,F
 Radio Apparatus Corp., 55 N. N.J. St., Indianapolis, Ind.—F
 Radio Industries, Inc., 5225 N. Ravenswood Ave., Chicago 25, Ill.—K
 Radion Corp., 1130 W. Wisconsin Ave., Chicago 14, Ill.—E,F
 R-F Electronics, Inc., 201 N.E. 61 St., Miami, Fla.—E
 Radio Kits, Inc. 120 Cedar St., New York 6, N.Y.—B
 Radio Merchandise Sales, 2016 Bronxdale, New York 60, N.Y.—D,E,F,J
 Radlon Corp., 1130 W. Wisconsin Ave., Chicago 14, Ill.—A,D,E,F
 Reynolds Radio & Equip. Lab., H.B. 219 Stone St., Oneida, N.Y.—D
 Rich Electronics, 212 N.W. 8th Ave., Miami 36, Fla.—F
 Rohn Mfg. Co., 116 Limestone, Peoria, Ill.—G
 Ruckelshaus Labs. Inc., John G., 110 Pomeroy Rd., Madison, N.J.—H
 S/C Labs., Inc. 37 George St., Newark 5, N.J.—C,D,E,F
 Scala Radio Co., 2814 19 St., San Francisco 10, Calif.—F
 Sickles Div., F.W., General Instrument Corp., P.O. Box 330, Chicopee, Mass.—K
 Sierra Electronic Corp., 1050 Brittan Ave., San Carlos, Calif.—C,E,F
 Sightmaster of Calif., Gillespie Airport Santee, Calif.—E
 Skysweeper Inc., Johnsburgh, Ill.—E,F,J
 Slate & Associates, Claude C., 11370 W. Olympic Blvd., Los Angeles 64, Calif.—D,E,F

Snyder Mfg. Co., 22 & Ontario St., Philadelphia 10, Pa.—E,F,I,J
 Southern Industries of Md., 1401 Reisterstown Rd., Pikesville, Baltimore 8, Md.—G
 South River Metal Prod. Co., 377 Turnpike, South River, N.J.—G
 Special Instruments Lab., Inc., 312 W. Vine St., Knoxville, Tenn.—E
 Spencer-Kennedy Labs., 186 Mass. Ave., Cambridge 39, Mass.—F
 Spiraling Products Co., P.O. Box 411, Hicksville, L.I., N.Y.—E,F
 Superex Electronics Corp., 23 Atherton St., Yonkers, N.Y.—K
 Tabet Mfg. Co., 1336 Ballentine Blvd., Norfolk, Va.—G
TECHNICAL APPLIANCE CORP., 1 Taco St., Sherburne, N.Y.—A,B,D,E,F,G,J,L
 Tel-A-Ray Enterprises Inc., 3rd & Water, Henderson, Ky.—A,D,G,L
 Tele-Beam Industries, 6th & Soscol Ave., Napa, Calif.—D,E,F
 Tele Matic Industries, 1 Joralemon St., Brooklyn 2, N.Y.—A,B,D,E,F
 Tele-Ex-Pand Corp., 4th & Pine Sts., Berwick, Pa.—G
 Television Co. of America, 1 Azurelee Dr., Malibu, Calif.—D
 Telkor, Inc., Telegraph Rd., Elyria, Ohio—D,E,F,J
 Telrex, Inc., Neptune Hwy., Asbury Park, N.J.—D,E,F,J
 Tempo T-V Mfg. Corp., 100 Prospect Ave., Burbank, Calif.—B,D,E,F,G,J
 Tennalab, Quincy, Ill.—D,F,L
 T. J. Mfg. Corp., 1020 S. Josephine St., Martinsville, Ind.—K
 Towers Corp., 3332 E. 55th St., Cleveland 27, Ohio—G
 Tricraft Products Co., 1535 N. Ashland Ave., Chicago 22, Ill.—A,B,D,E,F,J
 Trio Mfg. Co., Griggsville, Ill.—E,F,H
 T. V. Devel. Corp., 2024 McDonald Ave., Brooklyn 23, N.Y.—D
TV Labs., 5045 W. Lake St., Chicago 44, Ill.—D,E,F
T-V Products Co., 152 Sanford St., Brooklyn 5, N.Y.—D,E
 Universal Products Eng'g., 4100 Taylor Ave., Racine, Wis.—D,E,F,G
 U.S. Testing Co., 1415 Park Ave., Hoboken, N.J.—D,J
 Video Accessory Mfg. Co., P. O. Box 223, Tulsa 1, Okla.—G
 Video Electronic Lab., 304 Rogers Rd., Des Moines 15, Iowa—D,E,F
Video Industries Co., 42-46 Palmer Pl., Port Chester, N.Y.—A,B,D,E,F,J
 Walco Electronics Corp., 3225 Exposition Pl., Los Angeles 18, Calif.—D,E,F,K
 Welco Mfg. Co., 802 Washington St., Burlington, Iowa—E,F
West Coast Electronics Co., 5873 W. Jefferson Blvd., Los Angeles 16, Calif.—F
 Western Coil & Electrical Co., 215 State St., Racine, Wis.—G
 Western Mfg. Co., 1400 W. 22 St., Kearney, Neb.—H
 Wheatland Tube Co., Bankers Securities Bldg., Philadelphia 7, Pa.—G
White & Sons, J.L., 374 Verona Ave., Newark 4, N.J.—E
 Winegard Co., 3000 Scotten Blvd., Burlington, Iowa—E,F
 Winecharger Corp., E. 7 at Division St., Sioux City 2, Iowa—G
Wind Turbine Co., E. Market St. & Penn. R.R., West Chester, Pa.—A,G

8—ANTENNA ACCESSORIES

Assemblies, HF A
Clamps, ground B
Coupling & phasing units C
Diplexers D
Dummy loads E
Duplexers W
Feed systems F
Hardware G
Housings H
Insulators I
Isolation units J
Lenses, R-F K
Lightning arresters L
Links M
Masts N
Monitors O
Monitors, R-F power P
Outlets Q
Spreaders, feeders R
Springs, grounding S
Switching equipment T
Tower lighting U
Tuning units V

Abalon Precision Mfg. Corp., 540 Casanova St., New York 59, N.Y.—G,H
 Abel Mfg. Co., 32-20 37th Ave., Long Island City 1, N.Y.—B,G
 Advance Electronics Co., 8510 N. End Ave., Oak Park 37, Mich.—G,N
 Aerolite Electronics Corp., 507 26 St., Union City, N.J.—L
 Aeronautical Communications Equip., 3090 Douglas Rd., Miami 33, Fla.—R,X

Aeronautical Radio Mfg. Co., 155 First St., Mineola, N.Y.—G,I,M,N,S
AIRTRON, INC., 1103 W. Elizabeth Ave., Linden, E. N.J.—E,F,T,W
ALDEN PRODUCTS CO., 117 N. Main St., Brockton 64, Mass.—Q
 Allied Intl. Inc., 230 Park Ave., New York 17, N.Y.—C,F,M,V
 Allied Research & Eng'g. Inc., 1041 N. Las Palms Ave., Hollywood 38, Calif.—E
 Allmetal Screw Products Co., Garden City, N.Y.—G
 American Electronics Co., 1203 Bryant Ave., New York 59, N.Y.—C,D,F,G,J,W
 American Electroengineering Corp., 2040 Colo Ave., Santa Monica, Calif.—A
AMERICAN LAVA CORP., Cherokee Blvd. & Mfrs. Rd., Chattanooga 5, Tenn.—I
AMERICAN PHENOLIC CORP., 1830 S. 54 Ave., Chicago 50, Ill.—F,G,I,L,R
 American Tower Co., Box 29, Shelby, Ohio—N
 American Wood Working Co., 1682 N. Lowell Ave., Chicago 39, Ill.—N
ANDREW CORP., 363 E. 75 St., Chicago 19, Ill.—B,C,F,G,T,U,V
 Antenna Products, 3628 N. Lincoln Ave., Chicago 13, Ill.—N
 Antenna Specialists Co., 12435 Euclid Ave., Cleveland 6, Ohio—N
 A.R.F. Products, Inc., 7627 Lake St., River Forest, Ill.—E
Argyle Electronics Co., 8 W. 18 St., New York 11, N.Y.—I,L
 Atlas Precision Products Co., 3801 Castor Ave., Philadelphia 24, Pa.—V
Audio Products Corp., 2265 Westwood Blvd., Los Angeles 64 Calif.—L
 Babcock Radio Eng'g., Inc., 7942 Woodley Ave., Van Nuys, Calif.—V
 Bailey Corp., Arnold, Amoskeag Bank Bldg., Manchester, N.H.—K,O
 Barker & Williamson, 237 Fairfiled Ave., Upper Darby, Pa.—C,E,F,V
 Barlow Electrical Mfg. Co., 155 E. 128 St., New York 35, N.Y.—C,E,V
BENDIX AVIATION CORP., 11600 Sherman Way, North Hollywood, Calif.—D
 Bestcraft Products Co., 626 Broadway, New York 12, N.Y.—L
 Birchbach Radio Co., 145 Hudson St., New York 13, N.Y.—B,G,I,L,R,S
Black Mfg. Co., 6541 Euclid Ave., Cleveland 3, Ohio—B,G
 Blonder-Tongue Labs., Inc., 526 North Ave., Westfield, N.J.—J
BOGART MFG. CORP., 315 Seigel St., Brooklyn 6, N.Y.—A,C,D,E,F,T,V,W
 Bowen Co., David, 29 9th St., New York 14, N.Y.—F
 Bone Eng'g. Corp., 701 W. Broadway Glendale 1, Calif.—C,F,K,V,W
Brach Mfg. Corp., 200 Central Ave., Newark 3, N.J.—E,I,L
 British Electronic Sales Co., 23-03 45th Rd., Long Island City 1, N.Y.—Q
 Brooks & Perkins, 1950 W. Fort St., Detroit 16, Mich.—A,K
 Rudd-Stanley Co., 43-01 22nd St., Long Island City 1, N.Y.—D,E,F,W
BUD RADIO INC., 2118 E. 55th St., Cleveland 3, Ohio—R
 Camburn Sales & Mfg. Corp., 134 Orchard Ave., Battle Creek, Mich.—N
 Camburn Inc., 32-40 57 St., Woodside 77, N.Y.—B,C,G,I,L,N,T,V
 Cascade Research Corp., 53 Victory Lane, Los Gatos, Calif.—C,T,W
CENTRALAB Div., Globe Union, Inc., 900 E. Kofe Ave., Milwaukee 1, Wis.—I,R,T
 Century Electronics, 14844 Oxnard St., Van Nuys, Calif.—E,W
 C. G. S. Laboratories, Inc., 391 Ludlow St., Stamford, Conn.—C,P,V
 Channel Master Corp., Ellenville, N.Y.—C,G,N
 Chicago Expansion Bolt, 1338 N. Concord Pl., Chicago 22, Ill.—G
CITATION PRODUCTS CO., 233 E. 146 St., New York 51, N.Y.—G,I
 Clear Beam Antenna Corp., 100 Prospect Ave., Burbank Calif.—C,D,I,N
 Cleveland Electronics, Inc., 6611 Euclid Ave., Cleveland 3, Ohio—L
Communication Devices Co., 2331 12 Ave., New York 27, N.Y.—E,V
 Consolidated Wire & Associated Companies, 1635 S. Clinton St., Chicago 16, Ill.—B,G,I,L
 Continental Electronic Mfg. Co., 4212 S. Buckner Blvd., Dallas 17, Texas—E,J,V
 Control Electronics Co., 1925 New York Ave., Huntington Station, N.Y.—F
 Co-Operative Industries, Inc., Chester, N.J.—W
Cornell-Dubiler Electric Corp., 333 Hamilton Blvd., South Plainfield, N.J.—L
 Curry-Jamestown Mfg. Co., 44 N. Center St., Curry, Pa.—H
 Crowley & Co., Henry L., 1 Central Ave., W. Orange, N.J.—E
 Cubic Corp., 2841 Cannon St., San Diego 6, Calif.—C,D,E,F,W
DALE PRODUCTS, INC., Box 1, Columbus, Neb.—N
 Dalmo Victor Co., 1414 El Camino Real San Carlos, Calif.—W
 Dave Electronic Labs., 316 Stuart St., Boston 16, Mass.—C
 Dew Products, Inc., Hellertown Rd. MR37 Easton, Pa.—N
 Delta Electronics, Inc., Div. of Electronic Indicator Corp., 259 Green St., Brooklyn 22, N.Y.—G
 DeMornay-Bonardi, 780 S. Arroyo Pkwy., Pasadena, Calif.—E,F,K,W

DIAMOND MICROWAVE CORP., 7 North Ave. Wakefield, Mass.—W
Dorne & Margolin, 30 Sylvester St., Westbury, N.Y.—C,F
 Douglas Microwave Co., 11 Beechwood Ave., New Rochelle, N.Y.—E,F,W
 Duala Co., Box 78, Coal Fork, W. Va.—L
Dubrow Devel. Co., 235 Penn St., Burlington, N.J.—C,E,V
Du-Co Ceramics Co., Box 587 Butler, Pa.—I
DU MONT LABS., INC., ALLEN B., TV Transmitter Dept., Mobile Comm. Dept. 1500 Main St., Clifton, N.J.—D,E,F
 Dynakon, 9623 Clinton, Cleveland, Ohio—I
EBY CO., HUGH H., 4704 Stenton Ave., Philadelphia 44, Pa.—G,T
 Elicco of N.Y., Inc., 70-72 E. Second St., Mineola, L. I., N.Y.—E
ELECTHALAB, INC., 105 1st St., Cambridge 41, Mass.—C,I
ELECTRICAL TOWER SERVICE, 206 S. Washington St., Peoria 2, Ill.—U
 Electro Impulse Lab., 62 White St., Red Bank, N.J.—E
 Electronic Mechanics, Inc., 101 Clifton Blvd., Clifton, N.J.—I
 Electro Precision Products Inc., 139-30 34th Rd., Flushing 54, N.Y.—A,E
 Elk Electronics Labs., Inc., 333 W. 52 St., New York 19, N.Y.—V
 Elm Laboratories, 18 S. Broadway, Dobbs Ferry, N.Y.—N
Emerson Electric Mfg. Co., 8100 Florissant Ave., St. Louis 21, Mo.—F,K
Eng'g. Research Assoc., Div. Remington Rand Inc., 1902 W. Minnehaha Ave., St. Paul 4, Minn.—V
 Epo Electronics, Inc., 140 Liberty St., New York 6, N.Y.—C
 Federal Screw Products Inc., 224 W. Huron St., Chicago 10, Ill.—G
FEDERAL TELECOMMUNICATION LABS., 500 Washington Place, Nutley, N.J.—D,E
Ferro Electric Products, Kirkland, Ill.—L,G
 Flader, Inc., Fredric, 583 Division St., Tonawanda, N.Y.—I,N
 Freed Electronics & Controls Corp., 200 Hudson St., New York 13, N.Y.—V
FRETCO, INC., 406 N. Craig St., Pittsburgh 13, Pa.—F,I,N
 F-R Machine Works, 44-14 Astoria Blvd., Long Island City 3, N.Y.—E,T,W
GABRIEL ELECTRONICS DIV., GABRIEL CO., Endicott St., Norwood, Mass.—F,H,I
 Gadgets, Inc., 3629 N. Dixie Dr., Dayton 5, Ohio.—M
GATES RADIO CO., 123 Hampshire St., Quincy, Ill.—C,E,F,H,J,T,U,V
GEE-LAR MFG. CO., 819 Elm St., Rockford, Ill.—B,C,G,I,L,N,Q
General Cement Mfg. Co., 919 Taylor Ave., Rockford, Ill.—B,C,G,I,L,N,Q
GENERAL CERAMICS CORP., Keasbey, N.J.—I
GENERAL ELECTRIC CO., Apparatus Div., 1 River Rd., Schenectady 5, N.Y.—L
GENERAL R-F FITTINGS CO., 702 Beacon St., Boston 15, Mass.—C,E
 Gunset Co., 601 S. Main St., Burbank, Calif.—F,G,L,N,R
 Graf, R. F., 780 West End Ave., New York 25, N.Y.—C,D,L
 Gries Reproducer Corp., 5 Second St., New Rochelle, N.Y.—G
Grigaby-Allison Co., 407 N. Salem Ave., Arlington Heights, Ill.—T
 G. W. Assoc., Box 2263, El Segundo, Calif.—E
 Hartman Eng'g. Co., 182 Oakland St., Springfield 8, Mass.—N
Haydon Products Corp., 1801 8 Ave., Brooklyn 15, N.Y.—B,C,G,I,L,N,T
 Hewlett-Packard Co., Palo Alto, Calif.—E
 Hi-Lo TV Antenna Corp., 3540 N. Ravenswood, Chicago, Ill.—I,L
Hotel Radio Corp., 1040 W. Fort St., Detroit 26, Mich.—J,Q
 Huzhey & Phillips, 3300 N. San Fernando Blvd., Burbank, Calif.—U
 Hy-Lite Antennae Inc., 242 E. 137th St., New York 51, N.Y.—G,I
 I.E. Mfg. Co., 325 N. Hoyne Ave., Chicago 12, Ill.—R,F,I,L,M
 Illinois Electric Porcelain Company, 510 N. Pearl St., Macomb, Ill.—I
 Imperial Radar & Wire Corp., 820 E. 233rd St., New York 66, N.Y.—B,G,I
 Independent Mfg. Co., 5 Bellevue Ave., E. Riverport, N.J.—G
 Industrial TV, 359 Lexington Ave., Clifton, N.J.—D,F,G,J,Q
INSULATED CIRCUITS, INC., 115 Roosevelt Ave., Belleville, N.J.—A,C,F,J,L,T
 Insulating Fabricators of N.E., 69 Grove St., Wastertown 72, Mass.—I
 Insuline Corp., of America, 186 Granite St., Manchester, N.H.—A,B,G,I,L,N,R
 Int'l Research Associates, 2221 Warwick Ave., Santa Monica, Calif.—F,V
Isolantite Mfg. Corp., Warren Ave., Stirling, N.J.—I,L,R
I-T-E Circuit Breaker Co., 19 & Hamilton Sts., Philadelphia 30, Pa.—M
 JaMac Products Co., 4605 N.E. 118th Ave., Portland 20, Ore.—B,G,N
 Javex, Box 646, Redlands, Calif.—C,Q,T
JFD MFG. CO., 6101 16 Ave., Brooklyn 4, N.Y.—B,C,G,H,I,L,N,T
JOHNSON CO., E. F., Waeca, Minn.—A,C,I,J,T,U,V
 Jones Electronics Co., M.C., 185 N. Main St., Bristol, Conn.—E

Jones & Laughlin Steel Corp., 3 Gateway Center, Pittsburgh 30, Pa.—N
 ontz Mfg. Co., 1101 McKinley St., Mishawaka, Ind.—N
 Kennedy & Co., D. S., 422 S. Main St., Cohasset, Mass.—H.K
 Kenwood Eng'g. Co., 265 Colfax Ave., Kenilworth, N.J.—G.N
 Kings Electronics Co., 40 Marbledale Rd., Tucka-
 hoe, N.Y.—A.C.E.H.N.V.V
 King Metal Spinning Co., 174 Centre St., New
 York 13, N.Y.—H.L
 Kueger & Hudepohl, 3rd & Vine Sts., Cin-
 cinnati 2, Ohio—B
 Lane Electronics Co., 7254 Atoll Ave., N.
 Hollywood, Calif.—A.V
 La Pointe Electronics, Inc., 155 W. Main St.,
 Rockville, Conn.—L
 Lapp Insulator Co., Radio Specialties Div., 24
 Sumner St., LeRoy, N.Y.—E.I.R
 Larson Co., Chas. O., Sterling, Ill.—G
 Lear, Inc., 11916 W. Pico Blvd., Los Angeles
 61, Calif.—E
 Lerner Instrument & Electronics Mfg., GPO
 Box 620, Brooklyn 1, N.Y.—E.F
 Lettine Radio Mfg. Co., 62 Berkley St., Valley
 Stream, N.Y.—V
 Lieco, Inc., 147 Ocean Ave., Lynbrook, N.Y.—
 C.D.E.F.W
 Linear Equip. Labs., 1 Brightwater Pl., Mas-
 sapequa, N.Y.—C
 Link Radio Corp., 125 W. 17th St., New York
 11, N.Y.—A
 Lord Mfg. Co., 1635 W. 12th St., Erie, Pa.—J
 Luhrs, Co. C. H., 297 Hudson St., Hackensack,
 N.J.—T
 Luxor Lighting Products, Empire State Bldg.,
 1350 5th Ave., New York 1, N.Y.—U
 Lynmar Engineers, 1432 N. Carlisle St., Phila.
 21, Pa.—E.Q
 Macon Electronics, Warrensburg, Ill.—T
 Mark Products Co., 3547 Montrose Ave., Chi-
 cago 18, Ill.—C.D.E.F.I.K.M.T.W
 Meridian Metal Craft Inc., 213 W. Whittier
 Blvd., Whittier, Calif.—E.W
 Metal Products Co., Craighead St., Nashville 4,
 Tenn.—E
 Mica Insulator Co., P.O. Box 1076, Schenectady
 1, N.Y.—I
 Microlab, Inc., 71 Okner Pkway, Livingston,
 N.J.—E
 Miller Co., J. W., 5917 S. Main St., Los Angeles
 3, Calif.—U
 Minn. Rubber & Gasket Co., 3630 Wooddale
 Ave., Minneapolis 16, Minn.—I
 Modern-Aire Mfg. Corp., 4436 W. Roosevelt Rd.,
 Chicago 24, Ill.—B.G.I.N
 Modern Wire Co., 39-30 Review Ave., Long Is-
 land City 1, N.Y.—B.I.G.L.N
 Moseley Electronics, Inc., 8622 St. Charles
 Rock Rd., St. Louis 14, Mo.—F.Q.R.T
 MUELLER ELECTRIC CO., 1583 E. 31 St.,
 Cleveland 14, Ohio—B
 NAER Corp., 11777 Santa Monica Blvd., West
 Los Angeles 25, Calif.—I.R
 NATIONAL CO., 61 Sherman St., Malden, Mass.
 1, R
 National Electric Products Corp., P. O. Box
 897, Pittsburgh 30, Pa.—G.N
 National Electronic Mfg. Corp., 42-08 Vernon
 Blvd., Long Island City 1, N.Y.—B.C.I.L.N
 National Instrument Co., 23 E. 26 St., New
 York 10, N.Y.—T
 Newcomb Spring Corp., 3902 7th Ave., Brook-
 lyn, N.Y.—S
 Nichols Products Co., 325 W. Main St., Moores-
 town, N.J.—G.I
 Northeastern Eng'g, Bedford St., Manchester,
 N.H.—N
 N.R.K. MFG. & ENG'G. CO., 4601 W. Addison
 St., Chicago 41, Ill.—E
 Ohmite Mfg. Co., 3601 Howard St., Skokie, Ill.
 —E
 Orthon, 196 Albion Ave., Paterson, N.J.—E
 Penn TV Prods., Ally & Trenton Aves.,
 Philadelphia 34, Pa.—C.T
 Petroff, Peter A., 127 Water St., New York 5,
 N.Y.—A.B.C.E.G.H.I.J.L.M.N.Q.S.T.V
 PHAOSTRON CO., 151 Pasadena Ave., S.
 Pasadena, Calif.—G
 Philmore Mfg. Co., 113 University Pl., New
 York 3, N.Y.—I.L
 Phoenix Electronics, Inc., 50 Island St., Law-
 rence, Mass.—G
 PHOTOCIRCUITS CORP., New St., Glen Cove,
 N.Y.—A.C.D.L.V.W
 Plymouth Electronics Corp., 50 Kingsbury St.,
 Worcester, Mass.—B.G
 Portchester Instrument Corp., 114 Wilkins Ave.,
 Portchester, N.Y.—F.W
 Pratt, Albert., 1939 N. 18 St., Milwaukee 5,
 Wisc.—N
 Precision Associates, 354 Cumberland St.,
 Brooklyn 17, N.Y.—E.N.V
 Remax Products Div. Chisholm-Ryder Co.,
 Highland & College Aves., Niagara Falls,
 N.Y.—I
 Remier Instrument Corp., 52 W. Houston St.,
 New York 12, N.Y.—C.E.W
 RODELIN, 307 Bergen Ave., Kearny, N.J.
 —D.F
 Line Mfg. Co., 1562 61st St., Brooklyn 19,
 N.Y.—B.C.D.G.H.I.J.L.W
 Rada Products Co., 2911 W. Carroll Ave.,
 Chicago 12, Ill.—G
 Radiart Corp., 3455 Vega Ave., Cleveland 13,
 Ohio—L.N
 RADIO CORP. OF AMERICA, RCA VICTOR
 DIV., Eng'g Products Div., Camden 2, N.J.
 —C.F.N.W
 RADIO MERCHANDISE SALES, 2016 Bronx-
 dale Ave., New York 60, N.Y.—G.I.L.N.T

Radion Corp., 1130 W. Wisconsin Ave., Chicago
 14, Ill.—L.N.S
 Resistoflex Corp., 30 Plansoen St., Belleville 9,
 N.J.—I
 Rich Electronics, Inc., 212 N.W. 8 St., Miami
 36, Fla.—T.V
 Robberson Marine, 44 Sintsink Dr. E., Pt.
 Washington, L.I., N.Y.—L
 Rohn Mfg. Co., 116 Limestone, Bellevue,
 Peoria 5, Ill.—N
 Rostan Corp., 5660 59 St., Maspeth 78, Long
 Island, N.Y.—N
 Ruckelshaus Labs., John G., 110 Pomeroy Rd.,
 Madison, N.J.—T
 Seismograph Service Corp., 701 Kennedy Bldg.,
 Tulsa 1, Okla.—C.E.J.V
 Scientific Assembly Co., 65 Hope St., Brooklyn
 11, N.Y.—N
 Scientific Associates, 580 Virginia Ave., N.E.,
 Atlanta, Ga. A.F.G.K.T
 Screw Corp. of America, 103 Park Ave., New
 York 17, N.Y.—G
 Selectar Industries, Inc., 3100 Ocean Parkway,
 Brooklyn 35, N.Y.—E.W
 Sherman Mfg. Co., H. B., 22 Barney St., Battle
 Creek, Mich.—B
 Sierra Electronic Corp., 1050 Brittan Ave.,
 San Carlos, Calif.—E.P.V
 Skyline Tower Co., 2436 W. 59th St., Chicago
 29, Ill.—I.N.U
 Smith Inc., Herman H., 436 18 St., Brooklyn
 15, N.Y.—B.G.J
 Snyder Mfg. Co., 22 & Ontario Sts., Philadel-
 phia 40, Pa.—N
 Southern Industries of Md., 1401 Reistertown
 Rd., Pikesville, Baltimore 8, Md.—N
 South River Metal Products Co., 377 Old
 Bridge Turnpike, South River, N.J.—B.G.I.N
 Square Root Mfg. Corp., 391 Saw Mill River
 Rd., Yonkers, N.Y.—E.V
 STANDARD ELECTRONICS CORP., 285 Em-
 met St., Newark 5, N.J.—D.E
 Star Expansion Products Co., 147 Cedar St.,
 New York 6, N.Y.—G
 States Co., 19 New Park Ave., Hartford, Conn.
 —E
 Stone City Machine & Tool Co., 1206 7 St.,
 Bedford, Ind.—G
 STUPAKOFF CERAMIC & MFG. CO., Latrobe,
 Pa.—I
 Synco Products Co., 26 Irving Ct., Malden
 48, Mass.—I
 Suporex Electronics Corp., 23 Atherton St.,
 Yonkers, N.Y.—J
 Taylor Fibre Co., Norristown, Pa.—I
 Tech Laboratories Inc., Bergen & Edsall Bldgs.,
 Palisades Park, N.J.—T
 TECHNICAL APPLIANCE CORP., 1 Taco St.,
 Sherburne, N.Y.—A.R.C.D.F.G.H.I.J.L.N.Q.T.
 V.W
 Technical Materiel Corp., 700 Fenimore Rd.,
 Mamronck, N.Y.—A.C.V
 Technicraft Laboratories, 1200 Main St., Thom-
 aston, Conn.—E.W
 Tele-Beam Industries, 6th & Soquel Ave., Napa,
 Calif.—C.D.F
 Telectro Industries Corp., 35-16 37 St., Long
 Island City 1, N.Y.—A.E.T.V
 Tele-Ex-Pand Corp., 4th & Pine Sts., Berwick,
 Pa.—N
 Tele-Matic Industries Inc., 1 Joralemon St.,
 Brooklyn 2, N.Y.—C.T
 Telerad Mfg. Corp., 1440 Broadway, New
 York 18, N.Y.—E.V
 Television Co. of America, 1761 Lincoln Blvd.,
 Santa Monica, Calif.—N
 Television Specialty Co., 350 W. 31 St., New
 York 1, N.Y.—T
 Telewave Labs., 100 Metropolitan Ave., Brook-
 lyn 11, N.Y.—E
 Telkor, Inc., Telegraph Rd., Elyria, Ohio—G
 Telrex, Inc., Neptune Highway, Asbury Park,
 N.J.—A.G
 Tempo T-V Mfg. Corp., 100 Prospect Ave.,
 Burbank, Calif.—C.D.I.N
 TEXAS INSTRUMENTS INC. 6000 Lemmon
 Ave., Dallas 9, Texas—W
 Thomas Mold and Die Co., Henry & Grant St.,
 Wooster 126, Ohio—N
 Thomas & Sons, R. Co., Lisbon, Ohio—I
 THOR CERAMICS, 225 Belleville Ave., Bloom-
 field 1, N.J.—I
 TINNEMAN PRODUCTS, INC., P.O. Box
 6688, Dent, 16 Cleveland 1, Ohio—G
 Torngren Co., C.M., 236 Pearl St., Somerville
 45, Mass.—H
 Towers Corp., 3332 E. 55 St., Cleveland 27,
 Ohio—N
 Transformer Metal Prod. Inc., 343 W. 26th St.,
 New York, N.Y.—B.G.H
 Tricraft Products Co., 1535 N. Ashland Ave.,
 Chicago 22, Ill.—G.I.L
 Trilach Co., John D., 1310 McKinney Ave.,
 Houston, Tex.—U
 Tru-Connector Corp., 416 Union St., Lynn,
 Mass.—A.E.F
 T.V. Devel. Corp., 2024 McDonald Ave., Brook-
 lyn 23, N.Y.—G.L.T
 T-V Products Co., 145-68 228 St., Springfield
 Gardens 13, N.Y.—G
 Universal Products Eng'g. Co., 4100 Taylor
 Ave., Racine, Wisc.—N
 U. S. Gasket Co., 602 N. 10 St., Camden 1,
 N.J.—E.I
 U. S. Tower Co., 219 Union Trust Bldg., Pe-
 tersburg, Va.—U.V
 Victor Insulators, Inc., Maple Ave., Victor,
 N.Y.—I
 Video Accessory Mfg. Co., P.O. Box 2237 Tulsa
 10, Okla.—N
 Vidaire Electronics Mfg. Co., 576 W. Merrick
 Rd., Lynbrook, L.I., N.Y.—C

Video Electronic Lab., 304 Rodgers Rd., Des
 Moines 15, Iowa.—G
 Video Industries Co., 42-46 Palmer Pl., Port
 Chester, N.Y.—E.N.V
 Walsco Electronics Corp., 3225 Exposition Pl.,
 Los Angeles 18, Calif.—G
 Ward Products Corp., div. Gabriel Co., 1148
 Euclid Ave., Cleveland 15, Ohio.—D.L
 WAVELINE, INC., Passaic Ave., Caldwell,
 N.J.—D.E.F.W
 West Coast Electronics Co., 5873 W. Jefferson
 Blvd., Los Angeles 16, Calif.—V
 Western Coil & Electrical Co., 215 State St.,
 Racine, Wisc.—G.L.N
 Western Mfg. Co., 1400 W. 22 St., Kearney,
 Nebr.—F.L.N.T
 Weston Labs., Inc., Old Littleton Rd., Harvard,
 Mass.—E.W
 Willson Camera Co., 1401 Lawrence Rd., Ha-
 vertown, Pa.—H
 WINCHARGER CORP., E. 7 at Division St.,
 Sioux City 2, Iowa—U
 Wind Turbine Co., E. Market St., & Penn. R.R.,
 West Chester, Pa.—N.T.U
 WHITE & SON, JAMES L., 374 Verona Ave.,
 Newark 4, N.J.—G
 Wilmar Mfg. Co., 2715 E. 14th St., Kansas City
 27, Mo.—C
 Z & W Machine Products, 5100 St. Clair Ave.,
 Cleveland 3, Ohio—C.D.F.N.W

9-AVIATION

AUXILIARY ELECTRONIC EQUIPMENT

Antenna accessories	A
Antennas, aviation	B
Controls, aircraft	S
Emergency equipment	C
Gyroscopes	Y
Power supplies	D
Power supplies, emergency	E
Power supplies, 400 CPS	F
Recorders, airborne film	G
Recorders, airborne magnetic	H
Recorders, airport controller	I
Vibration mountings	J

COMMUNICATIONS NAVIGATION EQUIPMENT

Airborne landing systems	K
Altimeters, radio	L
Computers	T
Controls, aircraft navigation	U
Controls, guided missile	V
Ground landing systems	M
Guided Missile telemetering	W
Intercommunication systems	N
Navigation equipment, airborne	O
Navigation equipment, ground	P
Radar	Q
Receivers	X
Transmitters	R

Accurate Eng'g Co., 2005 Blue Island Ave.,
 Chicago 8, Ill.—D.D
 Acme Electronics Inc. (Sub. Aerovex Corp.),
 2724 Peck Rd., Monrovia, Calif.—D
 Acme Telectronic, Div., NEA Service, 1200
 W. 3 St., Cleveland 13, Ohio—G
 Aero Electronics Co., 1512 N. Wells St., Chi-
 cago 10, Ill.—O.S.T.U.V
 Aeronautical Communications Equipment, 3090
 Douglas Rd., Miami 33, Fla.—A.R.X
 Aeronautical Electronics, P. O. Box 6043,
 Raleigh, N.C.—A.B.O.R.S.X
 Aeronautical Radio Mfg. Co., 155 1st St., Min-
 neola, N.Y.—A.B.D.F.J.K.L.N.O.Q.R.X
 Air Associates, Teterboro, N.J.—O.Q
 Airborne Electronics Co., Metropolitan Air-
 port, Van Nuys, Calif.—R
 Aircraft Armaments, 4415 Reistertown Rd.,
 Baltimore 15, Md.—O.P
 AIRCRAFT RADIO CORP., P.O. Box 150,
 Boonton, N.J.—B.J.O.R.S.X
 Airpax Products Co., P.O. Box 137 Middle
 River, Baltimore 2, Md.—D.E.F
 Allied Allegri Machine Co., 141 River Rd., Nut-
 ley 10, N.J.—D.F
 Allied Electronic Equip. Co., 425 Brannan St.,
 San Francisco 7, Calif.—U
 Allied Intl. Inc., 230 Park Ave., New York
 17, N.Y.—D.F.R.S.X
 American Electroneering Corp., 2040 Colo.
 Ave., Santa Monica, Calif.—D.F.K.M.P
 American Machine & Foundry Co., 1085 Com-
 monwealth Ave., Boston, Mass.—L.Q.T.X
 American Radio Co., 445 Park Ave., New York
 22, N.Y.—M.O.P.Q.R.X
 American Radio Hdq. Co., 152 S. MacQueston
 Pkwy., Mt. Vernon, N.Y.—B
 AMERICAN TV & RADIO CO., 300 E. 4th
 St., St. Paul 1, Minn.—D.E
 American Vacuum Products Corp., 11779
 Santa Monica Blvd., W. Los Angeles 25,
 Calif.—S.V.Y
 Ansley Electronics, Inc.—85 Tremont St.,
 Meriden, Conn.—A.B.Q
 Antenna Specialists Co., 12435 Euclid Ave.,
 Cleveland 6, Ohio—B

Applegate & Co., C. J., 1816 Grove St., Boulder, Colo.—D,F
 Applied Electro Mechanics Inc., Natl. Airport—Hankar 9, Washington 1, D.C.—A,B,E,S,X
 Applied Science Corp., P. O. Box 44, Princeton, N. J.—H,W
 Arma Corp., Roosevelt Field, Garden City, N.Y.—O,S
 Art-Lloyd Metal Products Corp., 2973 Cropsey Ave., Brooklyn 14, N.Y.—J
 Associated Engineering Corp., 65 Kent St., Brookline 46, Mass.—D
 Atlas Engineering Co., 3 Edgewood St., Roxbury, Mass.—F
 Atlas Metal Stamping, Caster & Kensington Aves., Phila. 24, Pa.—K,M,O,P,Q
 Atlas Precision Products Co., 3801 Castor Ave., Philadelphia 24, Pa.—O,P,Q,S,T,U,V,W,Y
 Audio Products Corp., 2265 Westwood Blvd., Los Angeles 64, Calif.—B,D,F,L,O,R
 Austin Co., 76 9th Ave., New York 11, N.Y.—G,H
 Avion Instrument Co., Paramus, N.J.—F,H,Q,T,U,V,W
 Avionics Electronics Corp., 2838 N. Naomi St., Burbank, Calif.—A,L,Q,R,X
 Bassett Inc., Rex, 1314 NE 17 Court, Ft. Lauderdale, Fla.—A,R,X
 Beam Instruments Corp., 350 5th Ave., New York 1, N.Y.—P,Q,R,X
 Bell Aircraft Corp., P. O. Box 1, Buffalo 5, N.Y.—S
 BENDIX AVIATION CORP., PACIFIC DIV., 11600 Sherman Way, N. Hollywood, Calif.—O,Q
 BENDIX AVIATION CORP., Red Bank Div., Eatontown, N. J.—D,F
 BENDIX RADIO DIV., BENDIX AVIATION CORP., Baltimore 4, Md.—A,B,J,K,M,N,O,P,Q,S,U
 Blair Co., J.P., 89 Union St., Mineola, N.Y.—Q
 Boehme Inc., H. O., 915 Broadway, New York 10, N.Y.—P
 Boeing Airplane Co., 7755 E. Marginal Way, Seattle, Wash.—A,S
 Bozue Electric Mfg. Co., 62 Iowa Ave., Paterson 3, N.J.—D,F
 Balsey Corp. of America, 118 E. 25 St., New York 10, N.Y.—G
 Bone Eng'g. Corp., 701 W. Broadway, Glendale 4, Calif.—A,B,S
 BORG EQUIP. DIV., GEORGE W. BORG CORP., 120 S. Main St., Janesville, Wisc.—O
 BOURNS LABORATORIES, 6135 Magnolia Ave., Riverside, Calif.—L,V
 Brach Mfg. Co., 200 Central Ave., Newark 3, N. J.—Q,T
 Bristol Eng'g. Corp., Bristol, Pa.—D,F
 Brushker Mfg. Co., 9151 Exposition Dr., Los Angeles 34, Calif.—O,P,Q,W
 Budd-Stanley Co., 43-01 22nd St., Long Island City 1, N. Y.—B
 Buffalo Instrument Corp., 1780 Elmwood Ave., Buffalo 7, N. Y.—G
 Bunnell & Co., J. H., 81 Prospect St., Brooklyn 1, N.Y.—R
 Capoharri-Farnsworth Div. I.T.&T., Ft. Wayne, Ind.—Q,U,V
 Carter Parts Co., 213 Institute Pl., Chicago 10, Ill.—S
 CENTRALAB Div., Globe Union Inc., 900 E. Keefe Ave., Milwaukee 1, Wis.—A
 Century Geophysical Corp., 1333 N. Utica Tulsa, Okla.—G
 C.G.S. Labs., Inc. 391 Ludlow St., Stamford, Conn.—O,U,V
 Clifford Mfg. Co., 152 Grove St., Waltham 54, Mass.—S
 Coldtuner Laboratories, 550 5 Ave., New York 19, N.Y.—N
 COLLINS RADIO CO., 855 35th St., N.E., Cedar Rapids, Ia.—H,O,R,X
 Color TV Inc., 978 E. San Carlos Ave., San Carlos, Calif.—Q
 Colortone Electronics, 288 William St., New York 38, N. Y.—N
 Communication Devices Co., 2331 12 Ave., New York City 27, N.Y.—D,E,R
 Computer Co. of America, Div. Bruno N. Y. Industries Corp., 149 Church St., New York 7, N. Y.—T
 Conn. Telephone & Electric Co., 70 Britannia St., Meriden, Conn.—Q,X
 Consolidated Productions, Bldg 9, Broward Int'l Airport, Ft. Lauderdale, Fla.—D,E,F,N,R,S,V,W,X
 Consolidated Vultee Aircraft, 3302 Pacific Highway, San Diego, Calif.—S
 Continental Electronics Ltd., 302 Oakland St., Brooklyn 22, N. Y.—U
 Control Electronics Co., 1935 New York Ave., Huntington Station, N.Y.—V
 Cook Electric, 2700 Southport Ave., Chicago 14, Ill.—H
 Counter Electric Products, Boyne City, Mich.—S
 Creative Eng'g. Corp., 10816 Burbank Blvd., N. Hollywood, Calif.—A,R
 Crown Eng'g., 3821 Commercial, N. E., Albuquerque, N.M.—D
 Cubic Corp., 2841 Canon St., San Diego 6, Calif.—O,P,Q,R,T,U,V,W,X
 Curtis-Wright Aircraft, Carlstadt, N.J.—S
 Cutler-Hammer, Inc., 436 N. 12 St., Milwaukee 1, Wisc.—S,U
 DALE PRODUCTS, 1350 28 Ave., Columbus, Nehr.—A
 Dalmo Victor Co., 1414 El Camino Real San Carlos, Calif.—A,R,Q
 Davies Labs., 4705 Queensbury Rd., Riverdale, Md.—H

Dayton Aviation Radio & Equip. Corp., Dayton Municipal Airport, Vandalia, Ohio—B,K
 Delaware Optical Labs., Lansdowne, Pa.—G
 Digital Products, Inc., 7643 Fay Ave., LaJolla, Calif.—T
 Doelcam Corp., 1400 Soldiers Field Rd., Boston 35, Mass.—D,S,V,Y
 Dorne & Margolin, 30 Sylvester St., Westbury, N.Y.—B
 Dubrow Development Co., 235 Penn St., Burlington, N.J.—D
 ECLIPSE-PIONEER DIV., BENDIX AVIATION CORP., Teterboro, N.J.—D,F,K,O,S
 EDISON INC., THOMAS A., INSTRUMENT DIV., Lakeside Ave., W. Orange, N.J.—C,S
 Eicor, Inc., 1501 W. Congress St., Chicago 7, Ill.—D
 Eldico of N. Y., Inc., 70 E. 2 St., Mineola, L. I., N. Y.—D,E,F,K,M,O,P,R,U,X
 Electro Mechanical Research, Ridgefield, Conn.—W
 Electronic Control Systems, 2138 Westwood Blvd., Los Angeles 25, Calif.—H,O,P,Q,T,U,V
 Electronic Measurements Co., Lewis St. & Maple Ave., Eatontown, N.J.—D,F
 Electron-Radar Products, 1041 N. Pulaski Rd., Chicago 51, Ill.—B
 Electro-Seal Corp., 946 North Ave., Desplaines, Ill.—V
 Electrotechnic Corp., 15601 Arrow Hwy., Azusa, Calif.—L,N,R,Q
 Elk Electronic Labs., Inc., 333 W. 52nd St., New York 19, N.Y.—X
 El-Tronics, Inc., 437 N. 5 St., Philadelphia 23, Pa.—H,K,M,N,O,P,R,V,W,X
 Emerson Electric Mfg. Co., 8100 Florissant Ave., St. Louis 21, Mo.—B,O,Q,T,V
 Engineering Associates, 434 Patterson Rd., Dayton 9, Ohio—R,W,X
 Engineering Research Associates, Div. of Remington Rand Inc., 1902 W. Minnehaha Ave., St. Paul 4, Minn.—A,H,Y
 Erco Radio Labs., 637 Stewart Ave., Garden City, N.Y.—M,P,R
 Esney Mfg. Co., 528 E. 72 St., New York 21, N.Y.—N,Q,R,V,W,X
 FAIRCHILD CAMERA & INSTRUMENT CORP., Robbins Lane, Syosset, N.Y.—O,P
 Federal Electric Corp., 6446 Santa Monica Blvd., Los Angeles 38, Calif.—D
 Federal Shock Mount Corp., 1077 Intervale Ave., New York 59, N. Y.—J
 FEDERAL TELECOMMUNICATION LABS., 500 Washington Place, Nutley, N.J.—O
 FEDERAL TELEPHONE & RADIO CO., DIV. I.T.&T., 100 Kingsland Rd., Clifton, N.J.—D,M,N,P
 Feiler Eng'g. & Mfg. Co., 8026 N. Monticello Ave., Skokie, Ill.—N
 FINN & CO., T.R., 333 Jackson Ave., Bronx 64, N.Y.—J
 Flader Inc., Frederic, 583 Division St., N. Tonawanda, N.Y.—B
 Flett Lab., 3711 Marshall, Drexel Hill, Pa.—M
 FORD INSTRUMENT CO. DIV., THE SPERRY CORP., 31-10 Thomson Ave., Long Island City 1, N.Y.—O,T,U,V
 Freed Electronics & Controls Corp., 200 Hudson St., New York 13, N.Y.—D,E,F,L,N,O,P,Q,R
 GABRIEL ELECTRONICS DIV., GABRIEL CO., Endicott St., Norwood, Mass.—A,B,V,W
 Gadgets, Inc., 3629 N. Dixie Dr., Dayton 6, Ohio.—A
 Gaertner Radio Co., 3612 Maple Ave., Los Angeles 11, Calif.—D,Q
 GATBRAITH & SON, 450 6th Ave., New York 11, N.Y.—N
 Galetronics Inc., 2607 E. Foothill Blvd., Pasadena 8, Calif.—G
 Gates Electric Co., 65 W. Broadway, New York, N. Y.—D,E,F
 General Devices, Inc., P.O. Box 253, Princeton, N.J.—W
 General Hermetic Sealing Corp., 99 E. Hawthorne Ave., Valley Stream, N.Y.—N
 General Magnetics, Inc., 185 Bloomfield Ave., Bloomfield, N.J.—D,F
 GENERAL PRECISION LAB., INC., 63 Bedford Rd., Pleasantville, N.Y.—O,T
 General Riveters Inc., Elmwood & Hertel, Buffalo 7, N. Y.—A,S,U,V
 Genisco, Inc., 2233 Federal Ave., Los Angeles 64, Calif.—W
 Georator Corp., Manassas, Va.—D,E,F
 GIANNINI & CO., G. M., 914 E. Green St., Pasadena 1, Calif.—V,W,Y
 Gibbs Mfg. & Research Corp., 450 N. Main St., Janesville, Wisc.—O,R
 Gillfillan Bros., 1815 Venice Blvd., Los Angeles, Calif.—Q,R
 Globe Industries, Inc., 1784 Stanley Ave., Dayton 4, Ohio—S
 G & M Equip. Co., 7815 Varma Ave., N. Hollywood, Calif.—C,E,I,L,N,O,P,Q,R,X
 Gosnet Co., 801 S. Main St., Burbank, Calif.—N,R,X
 Graf, R. F., 780 West End Ave., New York 25, N.Y.—A
 Greenleaf Mfg. Co., 7814 Maplewood Ind. Ct., St. Louis 17, Mo.—D,F,I,L,O,R,S,T,U,V,W,X,Y
 Gulton Mfg. Corp., 212 Durham Ave., Metuchen, N. J.—H
 Gyromechanisms, Inc., Halesite, L. I., N.Y.—Y
 Hamilton Kent Mfg. Co., Kent, Ohio—J
 Hamlyn Electronics Corp., 32 Holman Blvd., Hicksville, N. Y.—A,R,D,E,F,O,Q,R,S,T,U,X
 Hanson-Gorrill-Brian, 1 Continental Hill, Glen Cove, N. Y.—D,S,V
 Hastings Instrument Co., Superhighway at Pine Ave., Hampton, Va.—O,P

Hathaway Instrument Co., 1315 S. Clarkson St., Denver 10, Colo.—G
 Hazeltine Electronics Corp., 58-25 Little Neck Pkwy., Little Neck 62, N. Y.—B,K,L,O,P,Q,R,T,W,X
 HEPNER MFG. CO., P. O. Box 1207, Round Lake, Ill.—J
 Heyer Products Co., 471 Cortlandt St., Belleville 9, N.J.—B,D
 Hufford Machine Works, 2201 Carmelina Ave., Los Angeles 64, Calif.—D,F,M,S,U,V
 HUGHES AIRCRAFT CORP., Culver City Calif.—S
 I.D.E.A. Inc., Regency Div., 7900 Pendleton Pike, Indianapolis 26, Ind.—X
 Industrial Rectifier Co., 161 Washington St., New York 6, N.Y.—D
 Industrial Test Equipment Co., 55 E. 11 St., New York 3, N. Y.—T
 Inet Div., Leach Corp., 4411 S. Santa Fe Ave., Los Angeles 58, Calif.—D
 iq industries, 6110 Wilshire Blvd., Los Angeles 36, Calif.—C
 Instrument Devel. Labs. Inc., 163 Highland Ave., Needham Heights 94, Mass.—F
 INSULATED CIRCUITS, INC., 115 Roosevelt Ave., Belleville, N.J.—S,V
 Insuline Corp. of America, 175 Granite St., Manchester, N. H.—A,B,H,J,X
 INT'L RESEARCH ASSOCIATES, 2221 Warwick Ave., Santa Monica, Calif.—D,G,N
 Jacobs Instrument Co., 4718 Bethesda Ave., Bethesda 14, Md.—T
 Janco Corp., 3111 Winona Ave., Burbank, Calif.—A
 Jarvis Electronics Corp., 6058 Fullerton Ave., Chicago 39, Ill.—B,D
 JFD MFG. CO., 6101 16 Ave., Brooklyn 4, N. Y.—J
 Johns-Manville, 22 E. 40 St., New York 16, N. Y.—J
 JOHNSON CO., E. F., Waseca, Minn.—R
 Kaar Eng'g. Corp., 2995 Middlefield Rd., Palo Alto, Calif.—R
 Kaiser Metal Products, Inc., Bristol, Pa.—T
 Kalbfell Labs., 1090 Morena Blvd., San Diego 10, Calif.—D
 Kane Electronics Corp., 81 Willoughby St., Brooklyn 1, N.Y.—Q,R,X
 Kearfoot Co., 1378 Main Ave., Clifton, N.J.—R,O,S,T,U,V,Y
 Kellogg Switchboard & Supply Co., 79 W. Monroe St., Chicago 3, Ill.—N
 Kennedy & Co., D. S., 432 S. Main St., Cohasset, Mass.—Q
 Kepco Labs., 131-38 Sanford Ave., Flushing 66, N.Y.—D,E,F
 Ketay Mfg. Corp., 555 Broadway, New York 12, N. Y.—N,O,U,V
 Kidde & Co., Walter, 1056 Main St., Belleville 9, N.J.—C
 Kilken Aircraft Div., Kilgen Organ Co., 4632 W. Florissant Ave., St. Louis, Mo.—M
 Kinetex Inst. Co., 902 Broadway New York 10, N.Y.—K,Q
 Kings Electronics Co., 40 Marbledale Rd., Tuckahoe, N. Y.—A,B,J
 Kirby Products Corp., 175 5 Ave., New York 10, N. Y.—D,N
 Kling Metal Spinning Co., 174 Centre St., New York 13, N. Y.—A
 Korb Engr. & Mfg. Co., 30 Ottawa Ave., Grandville, Mich.—H,Q
 Lab. for Electronics, Inc., 75 Pitts St., Boston, Mass.—K,M,O,P,Q,R,T,V,X
 Land-Air Inc., 201 N. Wells St., Chicago 6, Ill.—A,R,H
 Lane Electronics Co., 7254 Atoll Ave., N. Hollywood, Calif.—A,R,K,L,N,O,R,S,X
 La Pointe Electronics, Inc., 156 W. Main St., Rockville, Conn.—A
 Lavole Labs., Inc., Morganville, N.J.—P,Q
 Lear, Inc., 11916 W. Pico Blvd., Los Angeles 64, Calif.—A,B,C,D,E,F,J,K,M,N,O,P,R,S,T,U,V,W,X,Y
 Lee Electric & Mfg. Co., 2806 Clearwater St., Los Angeles 39, Calif.—D,E,F
 LIBRASCOPE INC., 1607 Flower St., Glendale 1, Calif.—T
 Lindly & Co., 248 Herricks Rd., Mineola, L. I., N. Y.—O,P,Q
 Link Aviation, Inc., Binghamton, N. Y.—T
 LOCKHEED AIRCRAFT, Burbank, Calif.
 Loral Electronics Corp., 794 E. 140th St., New York 64, N.Y.—O,Q
 Lord Mfg. Co., 1686 W. 12th St., Erie, Pa.—J
 L. & O Research & Devel. Corp., 134 N. Wayne Ave., Wayne, Pa.—O,T,V
 McColepin-Christie Corp., 8410 W. 67 St., Los Angeles 48, Calif.—D
 Max-Electric Products, Inc., 14405 Grenshaw Ave., Gardiner, Calif.—D,F
 Magnecord, Inc., 225 W. Ohio St., Chicago 10, Ill.—E
 Magnetic Instrument Co., 82 Main St., W. Orange, N. J.—D,E,F,R,U,V,X
 MAGNAVOX CO., Fort Wayne 4, Ind.—O,Q
 Magnetic Amplifiers, Inc., 632 Tinton Ave., New York 65, N.Y.—D,F
 Magnetic Research Corp., 318 Kansas St., I Segundo, Calif.—D,F
 Magnex Corp., 90-28 Van Weck Expressway Jamaica 18, N.Y.—D,H,F,P,M,Q
 MALLORY & CO., Indianapolis 6, Ind.—D
 Marine View Electronics, 744 E. 138 St., New York 64, N.Y.—D,N,R
 Marion Electrical Instrument Co., Manchester, N. H.—K,S
 Mark Products Co., 3547 Montrose Ave., Chicago 18, Ill.—A,B
 Martin Co., Glenn L., Baltimore 8, Md.—S
 Maryland Electronic Mfg. Corp., College Park 24, Md.—P,Q,R,V,X

Asco Products Co., 2119 S. Sepulveda Blvd., Los Angeles 25, Calif.—V,W
 Aurier Inc., J. A., 37-01 31 St., Long Island City 1, N. Y.—G
 Axson Corp., W. L., 460 W. 34 St., New York 1, N. Y.—B,D,F,O,P,Q,R,S,T,U,V,W,X,Y
 B Mfg. Co., 1060 State St., New Haven 11, Conn.—J
 ELPAK, INC., 452 Swann Ave., Alexandria, Va.—A,B,D,H,L,M,O,P,Q,R,T,U,V,W,X
 Mercury Mfg. Corp., 45 Brown St., Buffalo 11, N. Y.—D
 Miller Instruments Inc., Wm., 325 N. Halstead Ave., Pasadena 8, Calif.—F,G,H
 Minneapolis-Honeywell Regulator Co., Minneapolis, Minn.—S,Y
 Penn. Rubber & Gasket Co., 3630 Wooddale Ave., Minneapolis 16, Minn.—J
 Mitchell Industries, Box 17, Mineral Wells, Tex.—A,B,O,R,X
 Chawhuk Business Machines Corp., 944 Halsey St., Brooklyn 37, N. Y.—H,I
 Insulation Co., 335 E. Price St., Philadelphia 43, Pa.—B,N,R,S,X
 Johnson Electric Co., 5390 Bircher Blvd., St. Louis 20, Mo.—F
 Motor Generator Corp., Hobart Sq., Troy, Ohio—D,F
 Munson Mfg. & Service Inc., Beech St., Islip, N. Y.—D,K,M,N,R,S,U,X
 NYCALEX CORP. of America, 125 Clifton Blvd., Clifton, N.J.—W
 NAER Corp., 11777 Santa Monica Blvd., W. Los Angeles 26, Calif.—V,Y
 National Aeronautical Corp., 180 S. Main St., Ambler, Pa.—B,D,K,O,R,X
 National Electrical Machine Shops, 919 Jesup Blair Dr., Silver Springs, Md.—R,X
 National Instrument Co., 23 E. 26th St., New York 10, N.Y.—O
 Nichols Products Co., 325 W. Main St., Moores-town, N. J.—A,B
 Northeastern Eng'g Inc., S. Bedford St., Manchester, N.H.—V,W
 South Electric Mfg. Co., S. Market St., Galion, Ohio—N,S,T,U,V,W
 Northrop Aircraft Inc., Hawthorne, Calif.—S
 Nutone, Inc., Madison & Redbank Rd., Cincinnati 27, Ohio—O
 Offner Electronics Inc., 5320 N. Kedzie Ave., Chicago 25, Ill.—S
 Olympic Radio & Television Inc., 34-01 38th Ave., Long Island City 1, N.Y.—B,O,Q,R,X
 Opad-Green Co., 71 Warren St., New York 7, N.Y.—D,E,F
 Ortho Filter Corp., 196 Albion Ave., Paterson 2, N.J.—D,E,F
 Ortho Corp., 196 Albion Ave., Paterson, N.J.—D,E,F
 Otis Elevator Co., Electronic Div., 35 Ryerson St., Brooklyn 5, N.Y.—K,M,N,O,Q,R,T,U,V,W,X
 Pacific Mercury TV Mfg. Corp., 5955 Van Nuys Blvd., Van Nuys, Calif.—D,K,O,P,Q,R,T,V,W,X
 Pacific Scientific Co., 25 Stillman St., San Francisco 7, Calif.—S,V,W,Y
 Packard-Bell Co., 12333 W. Olympic Blvd., Los Angeles 64, Calif.—Q,R,X
 Panoramic Radio Products, Inc., 10 S 2nd Ave., Mt. Vernon, N. Y.—W
 Par Products Corp., 926 N. Citrus Ave., Hollywood 38, Calif.—O
 Pierce Wire Recorder Corp., 5900 N. Northwest Hwy., Chicago 31, Ill.—H
 Parkin Eng'g. Corp., 345 Kansas St., El Segundo, Calif.—A,P
 Permflux Corp., 4900 W. Grand Ave., Chicago 39, Ill.—H,I,N
 Raschel Electronics Inc., 13 Garden St., New Rochelle, N.Y.—D
 Peters Co., O.S., 1353 N.Y. Ave., N.E. Washington 2, D.C.—R,X
 Petroff, Peter A., 127 Water Ct., New York 3, N. Y.—J,K,M
PHASTRON CO., 151 Pasadena Ave., S. Pasadena, Calif.—A,B,S
 Puhco, Inc., 900 Kingston Rd., Baltimore 12, Md.—L,N,O,Q,R,V,W,X
 Physical Research Associates, 1 Azurelle Dr., Malibu, Calif.—O
 Pico Instruments & Controls Corp., 3593 Haven Ave., Culver City, Calif.—S,T,U,V,W
 Plastics & Electronics Corp., 272 Northland Ave., Buffalo 8, N. Y.—V,W
 Plymouth Electronics Corp., 50 Kingsbury St., Worcester, Mass.—D,F,M
 P. M. Industries Inc., 280 Fairfield Ave., Stamford, Conn.—A
 Portable Electric Tools, 200 W. 83 St., Chicago 20, Ill.—D,F
HYTECHNIC RESEARCH & DEVELOP., 202 Tillary St., Brooklyn 1, N. Y.—D,O,U,V
 Premier Instrument Corp., 52 W. Houston St., New York 12, N.Y.—A
 Press Wireless Labs., Inc., 25 Prospect Pl., W. Newton 65, Mass.—P,R,X
 Line Mfg. Corp., 1562 61 St., Brooklyn 19, N. Y.—A,B
 Plex Corp., 2076 Elston Ave., Chicago 14, Ill.—A
 Plination, Inc., Drawer Q, Melbourne, Fla.—W
 Radio Apparatus Corp., 55 N. New Jersey St., Indianapolis, Ind.—X
RADIO CORP. OF AMERICA, ENG'G. PRODUCTS DIV., Camden, N.J.—K,L
 Radio Eng'g. Labs., 36-40 37 St., Long Island City 1, N.Y.—V,W
 Radio Sonic Corp., 111 Bleeker St., New York 3, N. Y.—D
RAYTHEON TV & RADIO CORP., 5921 W. Dickens Ave., Chicago 39, Ill.—O,P,Q

Redmond Co., Owosso, Mich.—F
Remler Co., 2101 Bryant St., San Francisco 10, Calif.—N,R,X
 Republic Aviation Corp., Farmingdale, L. I., N. Y.—S
 Reddel Eng'g., 2351 Riverside Dr., Los Angeles 39, Calif.—D,F,Q,V,W
Rich Electronics, Inc., 212 N.W. 8th St., Miami 36, Fla.—N
 Ripley Co., Middletown, Conn.—N
 Robinette Co., W.C., 802 Fair Oaks Ave., S. Pasadena, Calif.—S
ROBINSON AVIATION, Teterboro Air Terminal, Teterboro, N.J.—J
 Robuck Labs., 1431 S. Labrae Ave., Los Angeles 19, Calif.—V,W
 Roesch Co., D. J., 2200 S. Figueroa St., Los Angeles 7, Calif.—B,J,N
Rofan Co., Topsfield, Mass.—B
 Rowe Industries, 1702 Wayne St., Toledo 9, Ohio—R,L,V,W
 Ryan Aeronautical Lindberg Field, San Diego, Calif.
Safe Flight Instrument Corp., 4 Water St., White Plains, N.Y.—H
 Sanders Associates, 137 Canal St., Nashua, N.H.—L,O,U,V,Y
 Schutter Mfg. Co., Carl W., 80 E. Montauk Highway, Lindenhurst, N.Y.—Q
 Schwien Eng'g. Co., 16217 Lindbergh St., Van Nuys, Calif.—S,U,V,X
 Seismograph Service Corp., 701 Kennedy Bldg., Tulsa, Okla.—O,P
 Selector Industries, Inc., 3100 Ocean Parkway, Brooklyn 35, N. Y.—V
 Senn Corp., New Augusta, Ind.—F
 Servo Corp. of Amer., New Hyde Park, N.Y.—M,O,P
 Servomechanisms, Inc., 500 Franklin Ave., Garden City, N. Y.—F,S,T,V
 Sierra Electronic Corp., 1050 Brittan Ave., San Carlos 2, Calif.—R
Sightmaster of Calif., Gillespie Airport, Santee, Calif.—Q
 Simmonds Accessories, 105 White Plains Rd., Tarrytown, N.Y.—C
 Simpson Mfg. Co., Mark, 32-28 49 St., Long Island City 3, N. Y.—N
 Slate & Assoc., Claude C., 11370 W. Olympic Blvd., Los Angeles 64, Calif.—B,C,Q,R,S,V
 Sonar Radio, 3050 W. 21st, B'klyn., N.Y.—R,X
 Sorensen & Co., 375 Fairfield Ave., Stamford, Conn.—D,F
 Sparton Radio TV, 2400 E. Ganson St., Jackson, Mich.—D,N,R
 Specialties, Inc., Skunks Misery Rd., Syosset, L.I., N.Y.—K
 Specialty Assembling Co., 79 Clifton Pl., Brooklyn 38, N.Y.—Q,T
 Spira Electronics Labs., 37-10 33 St., Long Island City 1, N.Y.—R,X
 Sperry Gyroscope, Great Neck, N.Y.—K,O,Q,U,Y
 Spincraft, Inc., 4122 W. State St., Milwaukee 8, Wisc.—Q
 Square Root Mfg. Corp., 391 Saw Mill River Rd., Yonkers, N.Y.—D,F,S
 Stavid Eng'g. Inc., 312 Park Ave., Plainfield, N. J.—O,Q,R,U,V,W,X
 Sterling Mfg. Co., 7201 Wentworth Ave., Cleveland 2, Ohio—S
Stratford Pen Corp., 44 W. 28th St., New York, N.Y.—N,O,S,U,V
 Strong Electric Co., 87 City Park Ave., Toledo 2, Ohio—D
 Summers Gyroscope Co., 2328 Broadway Santa Monica, Calif.—V,W,X,Y
 Tech Laboratories Inc., Bergen & Edsall Bldgs., Palisades Park, N. J.—D,E
TECHNICAL APPLIANCE CORP., 1 Taco St., Sherbourne, N.Y.—A,B
 Technical Material Corp., 700 Fenimore Rd., Miamisconck, N.Y.—P,R,X
 Teiner Co., Roland, 134 Tremont St., Everett, Mass.—J,Q
 Tele-Penn Industries, 6th & Soscol Ave., Napa, Calif.—A,B,R,X
 Tele-Broadcasters Inc., 158 E. 56 St., New York, N. Y.—D,E,N,R,Y,W,X
Telemarine Communications Co., 3040 W. 21 St., Brooklyn 24, N.Y.—D,E,R,X
 Telemetering Associates, 4940 Pine Forest Dr., Marietta, Ga.—W
 Telephonics Corp., Park Ave., Huntington, N.Y.—B,F,R,S,X
 Telscreen Corp., 36 Grove St., New Canaan, Conn.—Q
TEXAS INSTRUMENTS INC., 6000 Lemmon Ave., Dallas 9, Tex.—B,L,O,P,Q,R,T,V,W,X
 TV Labs, 5045 W. Lake, Chicago 44, Ill.—B
THOR CERAMICS, INC., 225 Belleville Ave., Bloomfield, N.J.—A
 Transformer Technicians Inc., 2608 N. Cicero Ave., Chicago 39, Ill.—D,F
 Transmitter Equipment Mfg. Co., 35 Ryerson St., Brooklyn 5, N. Y.—K,M,N,O,Q,R,T,U,V,W,X
T.V. Products Co., 152 Sandford St., Brooklyn 6, N.Y.—A,B
 Ultrasonic Corp., 61 Rogers St., Cambridge 42, Mass.—F,Q
 Union Spring & Mfg. Co., 1057 Summit Ave., Jersey City, N.J.—D,E,F,N,Q,R
 U. S. Recording Co., 1121 Vermont Ave., N.W., Washington 5 D.C.—D
 Univox Corp., 102 Warren St., N.Y. 7, N.Y.—A,B,I,O,S,V
 Vapor Heating Corp., 6420 W. Howard St., Chicago 31, Ill.—S
Varo Mfg. Co., 1801 Walnut St., Garland, Tex.—D,F
VICTRON INC., 400 Main St., Waltham 54, Mass.—G,K,M,O,Q,T,U,Y

VICTOREEN INSTRUMENT CO., 3800 Perkins Ave., Cleveland 12, Ohio—D
 Videon Electronic Corp., 902 E. Michigan St., Indianapolis 2, Ind.—R,X
 Waldorf Instrument Corp., Park Ave., Huntington, N.Y.—O,Q,T,V
WARREN PLASTICS CORP., Warren, Pa.—J
 Washington Institute of Technology Inc., 4810 Calvert Rd., College Park, Md.—B
WAVELINE INC., Passaic Ave., Caldwell, N.J.—Q
 Welch Electric Co., 1221 Wade St., Cincinnati 14, Ohio—D,F,S,U
West Coast Electronics Co., 5873 W. Jefferson Blvd., Los Angeles 16, Calif.—B
 Western Sound & Electric Lab., 805 S. 5th St., Milwaukee 4, Wisc.—N
WESTINGHOUSE ELECTRIC CORP., P.O. Box 868, Pittsburgh 30, Pa.—Q,V
WESTINGHOUSE ELECTRIC CORP., 2519 Wilkens Ave., Baltimore 3, Md.—Q,V
WESTON ELECTRICAL INSTRUMENT CORP., 614 Frelinghuysen Ave., Newark 5, N.J.—K,O
WHITE DENTAL MFG. CO., S.S., 10 E. 40 St., New York 16, N.Y.—S
 White Industries Inc., 421 W. 54th St., New York 19, N.Y.—B,D,F
WICKES ENG'G. & CONST. CO., 12th St. & Ferry Ave., Camden, N.J.—K,M,U
 Wilcox Electric Co., 1400 Chestnut St., Kansas City 27, Mo.—R,D,K,M,O,P,Q,R,S,T,U,X
 Wilmar Mfg. Co., 2715 E. 14 St., Kansas City 27, Mo.—A
 Wincharger Corp., E. 7th & Division Sts., Sioux City 2, Iowa—D,E,F
 Wright Eng'g. Co., 180 E. Calif. St., Pasadena 1, Calif.—G,H,T
 Wunderlich Radio Co., 2 Fifth Ave., New York 11, N. Y.—D,N,R,X
 Z & W Machine Products, 5100 St. Clair St., Cleveland 3, Ohio—A,B,S,V,W

10—BATTERIES, CHARGERS & ACCESSORIES

- Adapters, battery A
- Batteries, cadmium B
- Batteries, dry cell D
- Batteries, hearing aid E
- Batteries, mercury F
- Batteries, nickel alkaline G
- Batteries, silver V
- Batteries, standard cell H
- Batteries, storage, fixed I
- Batteries, storage, non-spill J
- Batteries, storage, portable K
- Batteries, transistor W
- Battery chargers, electronic tube rectified L
- Battery chargers, gas engine driven M
- Battery chargers, hand cranked N
- Battery chargers, metallic rectified O
- Battery chargers, motor generator P
- Battery chargers, portable Q
- Battery chargers, vibrator rectified R
- Battery chargers, wind-driven S
- Testers U

Accurate Electronics Corp., 1312 Ontario St., N.W., Cleveland 13, Ohio—A
 Accurate Eng'g. Co., 2005 Blue Island Ave., Chicago 8, Ill.—L,O,Q
 Acme Electric Corp., Cuba, N.Y.—O,Q
 Acme Electronics, Inc., 300 N. Lake Ave., Pasadena 4, Calif.—O
Aeronautical Radio Mfg. Co., 155 First St., Mineola, N.Y.—J,S
 Airmax Products Co., Middle River, Baltimore 20, Md.—O,R
 Allied Int'l Inc., 230 Park Ave., New York 17, N.Y.—D,F,M,O
 American Electronic Labs., Inc., 641 Arch St., Philadelphia 6, Pa.—O
AMERICAN TELEVISION & RADIO CO., 300 E. 4 St., St. Paul 1, Minn.—O,Q,R
 Amplex Corp., 2037 W. Division St., Chicago 22, Ill.—O
 Automatic Electric Co., 1033 W. Van Buren St., Chicago 7, Ill.—O
 Auto-Test, Inc., 600 S. Michigan Ave., Chicago 5, Ill.—U
 Barry Electronics Corp., 136 Liberty St., New York 6, N.Y.—O
 Bart-Messing Corp., 229 Main St., Belleville 9, N.J.—L,O
BERNDT-RACH, INC., Auricon Div., 6916 Romaine St., Hollywood 38, Calif.—O,Q
Bogue Electric Mfg. Co., 52 Iowa Ave., Paterson 3, N.J.—O,P,Q
 Booth Co., Arthur E., 265 S. Alexandria Ave., Los Angeles 4, Calif.—L,O,Q
 Bright Star Industries, 600 Getty Ave., Clifton, N.J.—D
 Burgess Battery Co., Freeport, Ill.—D,E,W
 Century Electric Co., 1806 Pine St., St. Louis 3, Mo.—P
 Control Corp., 718 Central Ave., Minneapolis 14, Minn.—O
 Cornell-Dubilier Electric Corp., 333 Hamilton Blvd., S. Plainfield, N.J.—O,Q

Delco-Remy Div., General Motors Corp., P. O. Box 640, Anderson, Ind.—K
 Dressen-Barnes Corp., 250 N. Vinedo Ave., Pasadena 8, Calif.—L,O,R
 Dresser Electric Co., 942 E. Larned St., Detroit 7, Mich.—L,O,Q
 Eagle-Picher Co., American Bldg., Cincinnati 1, Ohio—D,I,J,K
 Eastern Smelting & Refining Corp., 109 W. Brookline St., Boston, Mass.—F,V
 EBY INC., Hugh H., 4700 Stenton Ave., Philadelphia 44, Pa.—A
 Ectro, Inc., 425 S. Sandusky St., Delaware, Ohio—J,K,Q
 Elcon Mfg. Co., 436 E. Manchester Ave., Los Angeles 3, Calif.—A
 Electric Storage Battery Co., 42 S 15 St., Phila. 2, Pa.—L,K,O
 Electronic Batteries, Inc., 34 35th St., Brooklyn 32, N.Y.—J,K
 Electronic Control Corp., 1573 E. Forest Ave., Detroit 7, Mich.—L,O
 Electronic Instrument Co., 84 Withers St., Brooklyn 11, N.Y.—L
 Electronic Measurements Co., Lewis St. & Maple Ave., Eatontown, N.J.—L
 Electronic Rectifier Co., 1462 E. Main St., Rochester 2, N.Y.—L,O
 Electronic Research Associates, 715 Main St., W. Caldwell, N.J.—W
 Electro Products Laboratories, 4501 N. Ravenswood Ave., Chicago 40, Ill.—O
 Electro-Tech Equipment Co., 308 Canal St., New York, N.Y.—U
 Epeo Products Inc., 2500 Atlantic Ave., Brooklyn 7, N.Y.—L,O,Q
 Fansteel Metallurgical Corp., 2200 Sheridan Rd., N. Chicago, Ill.—O
 Federal Electric Corp., 6446 Santa Monica Blvd., Los Angeles 38, Calif.—O
 FEDERAL TELEPHONE & RADIO CO., DIV. I.T. & T., 100 Kingsland Rd., Clifton, N.J.—O,Q
 Galvanic Products Corp., 110 E. Hawthorne Ave., Valley Stream, N.Y.—J,K,O
 Gates Electric Co., 65 W. Broadway, New York, N.Y.—O,Q,U
 GENERAL ELECTRIC CO., APPARATUS DIV., 1 River Rd., Schenectady 5, N.Y.—L,O,P,Q
 GENERAL ELECTRIC CO., Germanium Products Div., Electronics Park, Syracuse, N.Y.—W
 Georator Corp., Manassas, Va.—M,P,Q
 Hastings Instrument Co., Hampton, Va.—H
 Heath Co., 305 Territorial, Benton Harbor, Mich.—O
 Hercules Elec. Mach'y & Equip. Co., 1442 E. Wash. Blvd., Los Angeles 21, Calif.—M,P
 Hertner Electric Co., 1290 Elmwood Ave., Cleveland 1, Ohio—M,P
 Heyer Products Co., 471 Cortlandt St., Belleville 9, N.J.—L,O,Q,U
 H&H Products Mfg. Co., P. O. Box 2333, Terminal Annex, Los Angeles 54, Calif.—M,P,Q
 Hickok Electrical Instrument Co., 10514 Dupont Ave., Cleveland 8, Ohio—U
 Howard Industries, Inc., Electric Motor Corp. Div., Racine, Wis.—M
 Hufford Machine Works, Electronics Division, 2201 Carmelina Ave., Los Angeles 64, Calif.—O,Q
 Hull & Co., R. O., 1300 Parsons St., Rocky River, Ohio—O
 Industrial Television 369 Lexington Ave., Clifton, N.J.—O,R
 Inet Div., Leach Corp., 4441 S. Santa Fe Ave., Los Angeles 58, Calif.—M,O,P,Q
 Interelectronics Corp., 2432 Grand Concourse, New York 58, N.Y.—D,E,I,J,K,V,W
 INTERNATIONAL RECTIFIER CORP., 1521 E. Grand Ave., El Segundo, Calif.—O
 JFD MFG. CO., 6101 16th Ave., Brooklyn 4, N.Y.—A,U
 Kane Electronics Corp., 81 Willoughby St., Brooklyn 1, N.Y.—O,Q
 Kato Eng'g. Co., 1415 1st Ave., Mankato, Minn.—M,P,Q
 KELLOGG SWITCHBOARD & SUPPLY CO., 79 W. Monroe St., Chicago 3, Ill.—D,I,O
 Kirby Products Corp., 175 5th Ave., New York 10, N.Y.—U
 Lee Electric & Mfg. Co., 2806 Clearwater St., Los Angeles 39, Calif.—G,H,I,J,K,O
 LEE ELECTRONIC LABS., INC., 233 Dudley St., Boston 19, Mass.—U
 Lorain Products Corp., 1122 F St., Lorain, Ohio—O
 Lyseo, 1401 Clinton St., Hoboken, N.J.—O
 Mackay Radio and Telegraph Co., 345 Hudson St., New York, N.Y.—G,L,O
 MAGNAVOX CO., Fort Wayne 4, Ind.—F
 Magnetic Instrument Co., 82 Main St., W. Orange, N.J.—L,O,P
 Magnex Corp., 90-28 Van Wyck Expressway, Jamaica 18, N.Y.—L
 Mallinckrodt Chemical Works, 2nd & Mallinckrodt Sts., St. Louis 7, Mo.—B,F,G,V
 MALLORY & CO., Indianapolis 6, Ind.—E,F,O,Q
 Marathon Battery Co., Henrietta St., Wausau, Wis.—D,E
 Marine View Electronics, 744 E. 138 St., New York 54, N.Y.—O
 McCoolpin-Christie Corp., 3410 W. 67 St., Los Angeles 43, Calif.—L,O,Q,U
 Miller Co., Sanford, 691 Bedford Ave., Brooklyn 6, N.Y.—O
 Model Rectifier Corp., 557 Rogers Ave., Brooklyn 25, N.Y.—O
 Motor Generator Corp., Hobart Sq., Troy, Ohio—M,P

Motorresearch Co., 1600 Junction Ave., Racine, Wis.—M,P
 National Carbon Co., 30 E. 42 St., New York 17, N.Y.—D,E,H,W
 Nickel Cadmium Battery Corp., Pleasant St., Easthampton, Mass.—B,G,I,J,K
 OGDEN COIL & TRANSFORMER CO., 2124 W. Carroll Ave., Chicago 12, Ill.—Q
 Olin Industries, 275 Winchester Ave., New Haven, Conn.—D,E
 Onan & Sons Inc., D. W., University Ave., S.E. at 25, Minneapolis 14, Minn.—M
 Opad-Green Co., 71 Warren St., New York 7, N.Y.—O,Q,U
 Perkins Eng'g. Corp., 345 Kansas St., El Segundo, Calif.—O
 Perma-Power Co., 4727 N. Damen Ave., Chicago 25, Ill.—O
 Pioneer Gen-E-Motor Corp., 5841 W. Dickens Ave., Chicago 39, Ill.—M,P,Q
 Plymouth Electronics Corp., 50 Kingsbury St., Worcester, Mass.—A,M
 Power Equipment Co., 5740 Nevada, E. Detroit 34, Mich.—L,O
 Power Transformer Co., 532 Hulberry St., Newark 5, N.J.—L,O,Q,R
 Pratt, Albert, 1939 N. 18 St., Milwaukee 5, Wis.—U
 Precision Associates, 354 Cumberland St., Brooklyn 17, N.Y.—U
 Radiart Corp., 3455 Vega Ave., Cleveland 13, Ohio—R
 Radio City Products Co., 101 W. 31st, New York 1, N.Y.—U
 RADIO CORP. OF AMERICA, RCA Tube Dept., 415 S. 5 St., Harrison, N.J.—D
 Radio Kits, Inc., 120 Cedar St., New York 6, N.Y.—U
 Rapid Electric Co., 2881 Middletown Rd., Bronx 61, N.Y.—O,Q
 Ray-O-Vac Co., 212 E. Washington Ave., Madison 10, Wis.—D,E
 RAYTHEON MFG. CO., Waltham 54, Mass.—L,O
 Regulator Eng'g. & Devel. Co., 11545 W. Jefferson Blvd., Culver City, Calif.—O
 Rowe Industries, 1702 Wayne St., Toledo 9, Ohio—L
 Rubicon Co., Ridge Ave. at 35th St., Philadelphia 32, Pa.—H
 Schauer Mfg. Co., 4500 Alpine Ave., Cincinnati 36, Ohio—O,Q
 Sensitive Research Instrument Corp., 9 Elm Ave., Mt. Vernon, N.Y.—H,V
 SONOTONE CORP., Elmsford, N.Y.—B,G,I,J,K
 Sorenson & Co., 375 Fairfield Ave., Stamford, Conn.—L
 Specialty Battery Co., 212 E. Washington Ave., Madison 10, Wis.—D,K,H,I,J
 Standard Electric Time Co., 119 Logan St., Springfield, Mass.—B,G
 Sun Electric Corp., Harlem & Avondale Ave., Chicago 31, Ill.—M,O,Q,U
 Technical Apparatus Builders, 109 Liberty St., New York 5, N.Y.—L,O,Q
 TEXAS INSTRUMENTS INC., 6000 Lemmon Ave., Dallas 9, Texas—W
 Ther Electric & Machine Works, 17 S. Jefferson St., Chicago 6, Ill.—L,O,Q
 Thompson Clock Co., H. C., 38 Federal St., Bristol, Conn.—A,D,E,F,G,H,I,J,K,O
 Transformer Technicians, 2608 N. Cicero Ave., Chicago 39, Ill.—L,O,R
 Transite Electronics Corp., 5720 W. Armitage Ave., Chicago 39, Ill.—O
 Union Spring & Mfg., 1057 Summit Ave., Jersey City 7, N.J.—L,O
 Universal Motor Co., 465 Universal Dr., Oshkosh, Wis.—M
 U.S. Motors Corp., 420 Nebraska St., Oshkosh, Wis.—N,Q
 U.S. Testing Co., 1415 Park Ave., Hoboken, N.J.—U
 Vacolite Co., 3003 N. Henderson St., Dallas 6, Texas—E,F
 WELCH MFG. CO., W. M., 1515 Sedgwick St., Chicago 10, Ill.—O
 Westberg Mfg. Co., 144 S. Coombs St., Napa, Calif.—U
 Western Mfg. Co., 1400 W. 22 St., Kearney, Nebr.—O,Q
 Wilcox Research Corp., 340 N. La Brea Ave., Los Angeles 36, Calif.—O
 Willard Storage Battery Co., 1220 Huron Rd., Cleveland, Ohio—D,J,K,O,Q,U
 WINCHARGER CORP., E. 7 at Division St., Sioux City 2, Iowa—M,S
 Yardney Electric Corp., 105 Chambers St., New York 7, N.Y.—I,J,K,O,Q,V

II—BOOKS AND DATA SERVICE

Manuals, engineering A
 Manuals, maintenance B
 Manuals, test equipment C
 Manuals, tube D
 Reference books E
 Reports & digests F
 Text Books, electronic G

Adelphi Co., 33 Key St., Eastport, Me.—E,F
 American Electronics Co., 1203 Bryant Ave., New York 59, N.Y.—A,E,G
 American Machine & Foundry Co., Electronics Div., 1085 Commonwealth Ave., Boston 15, Mass.—A

Audel Publishers, 49 W. 23rd St., New York, N.Y.—E
 Booth Co., Arthur E., 265 S. Alexandria Ave., Los Angeles 4, Calif.—A,C,F
 BRUNING CO., CHARLES, 4700 Montrose Ave., Chicago 41, Ill.—A,E
 Burgess Battery Co., Freeport, Ill.—A
 Caldwell-Clements Manuals Corp., 480 Lexington Ave., New York 17, N.Y.—A,B,C,D,E
 CENTRAL LAB DIV., GLOBE UNION, INC., 900 E. Keefe Ave., Milwaukee 1, Wis.—E
 Cook Laboratories Inc., 114 Manhattan St., Stamford, Conn.—C
 Delaware Optical Labs., 36 Williams St., Lansdowne, Pa.—A
 Delco-Remy Div., General Motors Corp., P. O. Box 640, Anderson, Ind.—B
 Dover Publications Inc., 1780 Broadway, New York, N.Y.—E
 Dubrow Devel. Co., 235 Penn St., Burlington, N.J.—A,B,C
 EITEL-McCULLOUGH, INC., 798 San Mateo Ave., San Bruno, Calif.—D
 Electrofilm Inc., 7116 Laurel Canyon Blvd., N. Hollywood, Calif.—A,C
 Electronic Control Corp., 1573 E. Forest Ave., Detroit 7, Mich.—A,F
 FORD INSTRUMENT CO., Div., The Sperry Corp., 31-10 Thomson Ave., Long Island City 1, N.Y.—A,B,C
 GENERAL ELECTRIC CO., Tube Dept., 1 River Rd., Schenectady 5, N.Y.—D
 GENERAL ELECTRIC CO., ELECTRONICS DIV., Comm. Equip. Dept., Electronics Park, Syracuse, N.Y.—B
 Goldsmith Bros. Smelting & Refining Co., 111 N. Wabash Ave., Chicago 2, Ill.—E
 Graf, R. F., 780 West End Ave., New York 25, N.Y.—A,B,C,F
 Harper & Bros., 49 E. 33 St., New York, N.Y.—A,E
 Kane Electronics Corp., 81 Willoughby St., Brooklyn 1, N.Y.—A,B,C
 Kann-Ellert Electronics, 9 S. Howard St., Baltimore 1, Md.—E
 Lytle Engineering & Mfg. Co., 105 W. Monroe St., Chicago 3, Ill.—A,B,C,E,F,G
 Macmillan Co., 60 5th Ave., New York 11, N.Y.—A,B,C,E
 MAGNECORP. INC., 225 W. Ohio St., Chicago 10, Ill.—B
 Magnetic Instrument Co., 82 Main St., W. Orange, N.J.—A,B,C
 MALLORY & CO., P. R., Indianapolis 6, Ind.—A,B,E,F
 Maryland Electronic Mfg. Corp., 5009 Calvert Rd., College Park, Md.—A,B
 McGraw-Hill Book Co., 330 W. 42 St., New York 36, N.Y.—A,E
 Opto Eng'g. Co., 3406 W. Washington Blvd., Los Angeles 18, Calif.—A,B
 Pellegrini & Cudahy, 41 E. 5th St., New York 22, N.Y.—E
 PHILCO CORP., ACCESSORY DIV., "A" & Allegheny Ave., Philadelphia 34, Pa.
 Physical Research Associates, #1 Azurelee Dr., Malibu, Calif.—A,B,C,F
 Pitman Publishing Corp., 2 W. 45th St., New York, N.Y.—E
 Prentice-Hall Inc., 70 Fifth Ave., New York, N.Y.—A,E
 RADIO CORP. OF AMERICA, RCA Tube Dept., 415 S. 5 St., Harrison, N.J.—D
 Recker Co., Joseph, 140 Nassau St., New York 38, N.Y.—A,B,C
 Rider Inc., John F., 480 Canal St., New York 13, N.Y.—B
 Rinehart Books Inc., 232 Madison Ave., New York, N.Y.—E
 Roesch Co., D. J., 2200 S. Figueroa St., Los Angeles 7, Calif.—A,C
 Sams & Co., Howard W., 2201 E. 46 St., Indianapolis 5, Ind.—B,F
 Scientific Book Publishing Co., Vincennes, Ind.—A,E
 Sightmaster of Calif., Gillespie Airport Santee, Calif.—F
 Special Effects & Equip. Inc., 418 W. 54th St., N.Y. 19, N.Y.—F
 Stavix Eng'g. Inc., 312 Park Ave., Plainfield, N.J.—A,B
 Supreme Publications, 3727 W. 13th St., Chicago 23, Ill.—E
 SYLVANIA ELECTRIC PRODUCTS INC., 1740 Broadway, New York 19, N.Y.—D
 Technical Associates, 129 W. 52nd St., New York 19, N.Y.—A,B,C,F
 Technicraft Supply Co., 1156 Commonwealth Ave., Boston 34, Mass.—A,F
 Television Co. of America, 1761 Lincoln Blvd., Santa Monica, Calif.—A,B,C,F
 Thompson Clock Co., H.C., 38 Federal St., Bristol, Conn.—A,B,C,D,E,F
 TUNG-SOL ELECTRIC INC., 95 8th Ave., Newark 4, N.J.—D
 United-Carr Fastener Corp., 31 Ames St., Cambridge 42, Mass.—A
 United Catalog Publishers, 110 Lafayette St., New York 13, N.Y.—E
 Universal Scientific Co., 1102 Shelby St., Vincennes, Ind.—G
 U.S. Testing Co., 1415 Park Ave., Hoboken, N.J.—A,B,C,F
 Van Nostrand Co., 250 4th Ave., New York, N.Y.—E
 Varo Mfg. Co., 1801 Walnut St., Garland, Tex.—A,B,O
 WELCH SCIENTIFIC CO., W. M., 1515 Sedgwick St., Chicago 10, Ill.—E
 WICKES ENGR. & CONST. CO., 12th St. & Ferry Ave., Camden, N.J.—A,C
 Wiley & Sons, Inc., John, 440 Fourth Ave., New York 16, N.Y.—A,E

12—CABINETS, RACKS & PANELS

Bins	A
Boxes	Q
Boxes, storage	R
Cabinets, metal	B
Cabinets, plastic	C
Cabinets, wood	D
Cases, portable	E
Chassis	F
Felt	G
Film finishes	H
Housings, metal	S
Instrument housings	I
Leather handles	J
Leatherette	K
Mounting accessories	L
Panels, fiber	T
Panels, metal	M
Panels, plastic	V
Racks	N
Slides, equipment	U
Transformer Cases	P
Trays	O

Abalon Precision Mfg. Corp., 540 Casanova St., Bronx 59, N.Y.—B.E.F.I.M.N.Q.R.S.
 Ackerman Engravers, 458 Broadway, New York 13, N.Y.—C.F.I.M.S.T.
 Acme Telectronic, Div. NEA Service, 1200 W. 3rd St., Cleveland 13, Ohio—B.F.I.M.N.S.
 AEROVOX CORP., 740 Belleville Ave., New Bedford, Mass.—M.N.
 Ainalie Electronic Products, Inc., 312 Quincy Ave., Quincy, Mass.—B.F.
 Airborne Electronics Co., Hangar 6 Metropolitan Airport, Van Nuys, Calif.—M
 A. J. F. Industries, 852 Monroe St., Brooklyn 21, N.Y.—P
 ALDEN PRODUCTS CO., 117 N. Main St., Brockton 64, Mass.—B.E.M.S.U.
 Allied Engraving & Stamping Co., 161 Ellicott St., Buffalo 3, N.Y.—C.T.
 ALTEC LANSING CORP., 9356 Santa Monica Blvd., Beverly Hills, Calif.—B.D.M.N.
 American Electroneering Corp., 2040 Colo. Ave., Santa Monica, Calif.—B.E.F.I.M.N.O.
 American Machine & Foundry Co., Electronics Div., 1085 Commonwealth Ave., Boston 15, Mass.—F
 American Wood Working Co., 1682 N. Lowell Ave., Chicago 39, Ill.—D.E.L.M.N.O.
 Angle Genesee Corp., 107 Norris Dr., Rochester 10, N.Y.—D
 Apex Coated Fabrics Co., 12 E. 22nd St., New York 10, N.Y.—K
 Argos Products Co., 310 Main St., Genoa, Ill.—D.E.I.K.
 Armstrong Cork Co., Lancaster, Pa.—G
 Artisan Metal Works Co., 11430 Madison Ave., Cleveland 2, Ohio—B.F.M.N.
 Art-Lloyd Metal Products Corp., 2973 Cropsey Ave., Brooklyn 14, N.Y.—B.D.E.F.I.M.N.O.
 Auto-Test, Inc., 600 S. Michigan Ave., Chicago 5, Ill.—B.F.M.
 Baltic Metal Products Co., 120 Sutton St., Brooklyn 22, N.Y.—B.F.M.P.Q.R.S.
 Baughman Co., E. J., 350 S. Central, Los Angeles 13, Calif.—B.I.N.
 BENDIX RADIO DIV., BENDIX AVIATION CORP., Baltimore 4, Md.—S
 Bennett Mfg. Co., Alden, N.Y.—B.E.F.H.I.M.N.O.Q.R.S.U.
 Bennett Products Mfg. Co., P.O. Box 1055, Palo Alto, Calif.—M
 Blender-Tongue Labs., Inc., 526 North Ave., Westfield, N.J.—S
 Bodner Industries, Inc., 19 Railroad Ave., New Rochelle, N.Y.—V
 Bogen Co., David, 29 9th St., New York 14, N.Y.—D.F.
 Bowen & Co., 4712 Bethesda Ave., Bethesda, Md.—F.M.
 Boyle Metalcraft Corp., 150 Sullivan St., Brooklyn 31, N.Y.—B
 British Electronic Sales Co., 23-03 45th Rd., Long Island City 1, N.Y.—P
 Brooks & Perkins, 1950 W. Fort St., Detroit 16, Mich.—B.E.F.I.M.O.Q.S.
 Browne Electronics, 12450 W. Washington Blvd., Venice, Calif.—D
 Brubaker Mfg. Co., 9151 Exposition Dr., Los Angeles 34, Calif.—U
 Buck Eng'g. Co., 37 Marcy St., Freehold, N.J.—B.F.I.M.N.S.
 Bucks County Enterprises, Quakertown, Pa.—A.R.E.M.N.O.
 BUD RADIO INC., 2118 E. 55 St., Cleveland 3, Ohio—B.E.F.I.L.M.N.O.Q.S.
 BURROUGHS CORP., ELECTRONIC INSTRUMENTS DIV., 1209 Vine St., Philadelphia 7, Pa.—N
 Butler Mfg. Co., R. B., 3150 Randolph St., Bellwood, Ill.—D
 Cameron Craft, 924 Brockhurst St., Oakland 8, Calif.—D.E.M.N.O.
 Castlewood Mfg. Co., 12th & Burnett Sts., Louisville 10, Ky.—D
 Centralab Div., Globe Union, Inc., 900 E. Keefe Ave., Milwaukee 1, Wis.—L
 Chicago Electronic Eng. Co., 3223 Armitage Ave., Chicago 47, Ill.—P

Churchill Lighting Corp., 344 Franklin St., Melrose 76, Mass.—B.E.F.I.M.N.
 CITATION PRODUCTS CO., 233 E. 146 St., New York 51, N.Y.—U
 Clewq Laboratories, Inc., 142 S. Livingston Ave., Livingston, N.J.—J.L.M.
 Color Plastics, Inc., 247 Atlantic Ave., Boston 10, Mass.—C.N.O.
 Columbia Metal Box Co., 260 E. 143 St. New York 51, N.Y.—B.F.I.M.
 Consolidated Productions, Inc., Bldg. 9, Broward International Airport, Ft. Lauderdale, Fla.—B.F.I.M.N.S.
 Continental Textile & Supply Co., 4245 W. Armitage Ave., Chicago 39, Ill.—K
 Corry-Jamestown Mfg. Corp., 44 N. Center St., Corry, Pa.—A.B.E.F.I.M.P.Q.R.S.
 Croname Inc., 3701 Ravenswood Ave., Chicago 13, Ill.—M
 Cutler Metal Products Co., 1025 Line St., Camden 3, N.J.—A.B.E.F.I.L.M.N.O.
 Daven Co., 191 Central Ave., Newark 4, N.J.—D.E.
 DeLco Radio Div., General Motors Corp., 1446 S. Home Ave., Kokomo, Ind.—F.S.
 Detectolab, Inc., 6544 Sheridan Rd., Chicago 26, Ill.—D
 DeWald Radio & Tel. Corp., 35-15 37th Ave., Long Island City 1, N.Y.—F.M.
 Duchler Metal Furniture Co., 192 Lexington Ave., New York 16, N.Y.—B.M.S.
 Doepke Mfg. Co., Chas. Wm., Rossmoyne, Ohio—A.O.Q.R.
 Dolin Metal Products Inc., 815 Lexington Ave., Bklyn. 16, N.Y.—A.R.F.I.M.N.O.Q.R.S.
 DuKane Corp., 305 No. 11th St., St. Charles, Ill.—B.M.
 Dumont-Airplane & Marine Instruments, Inc., Clearfield, Pa.—B.F.M.N.S.
 DUMONT LABS. INC., ALLEN B., TV Transmitter Dept., Mobile Comm. Dept., 1500 Main St., Clifton, N.J.—B
 Electronic Workshop Sales Corp., 26 W. 8 St., New York 11, N.Y.—D
 Elgin Metalformers Corp., 901 N. Liberty St., Elgin, Ill.—B.I.M.N.S.U.
 Ellar Woodcraft Corp., 431 W. 28 St., New York 1, N.Y.—
 Elm Labs., 18 S. Broadway, Dobbs Ferry, N.Y.—D
 Equipto Div., Aurora Equipment Co., Aurora, Ill.—A.B.E.M.N.O.Q.R.
 Erie Resistor Corp., 644 W. 12th St., Erie, Pa.—C
 Falstrom Co., 53 Falstrom Ct., Passaic, N.J.—A.B.F.I.M.O.P.Q.S.
 FEDERAL TELEPHONE & RADIO CO., DIV. I. T. & T., 100 Kingsland Rd., Clifton, N.J.—N
 Feiner & Sons, Inc. P., 522 W. 45 St., New York City 36, N.Y.—B.E.F.I.M.N.P.Q.R.S.
 Finn & Co. T. R., 333 Jackson Ave., New York 54, N.Y.—F.N.
 FORMICA CO., 110 St., S. Boston 27, Mass.—B.E.F.M.N.O.
 Galzets, Inc., 3629 N. Dixie Dr., Dayton 5, Ohio—I.M.
 Gates Radio Co., 123 Hampshire St., Quincy, Ill.—B.D.F.M.N.
 GEE-LAR MFG. CO., 819 Elm St., Rockford, Ill.—C
 General Cement Mfg. Co., 919 Taylor Ave., Rockford, Ill.—G.K.I.
 GENERAL COMMUNICATIONS, P.O. Box 169, Fort Atkinson, Wis.—B.E.M.N.
 GENERAL ELECTRIC CO., BROADCAST EQUIP. & COMMERCIAL EQUIP. DIV., Electronics Park Syracuse, N.Y.—D
 GENERAL ELECTRIC CO., CHEMICAL DIV., 1 Plastics Ave., Pittsfield, Mass.—D
 G & H Wood Products Co., 75 N. 11 St., Brooklyn 11, N.Y.—D
 Gits Molding Corp., 4600 W. Huron St., Chicago 44, Ill.—C
 Glass & Bro. Harry G., 10 Van Cortland Ave., E., New York 68, N.Y.—V
 Gonset Co., 801 South Main St., Burbank, Calif.—B.F.M.S.
 Grant Pulley & Hdw. Corp., 31-85 Whitestone Pkwy., Flushing 54, N.Y.—U
 Hamilton Electronics Corp., 2726 Pratt Ave., Chicago 45, Ill.—B.N.
 Hamlyn Electronics Corp., 32 Holman Blvd., Hicksville, N.Y.—F.N.S.
 Hanson-Gorrill-Brian, 1 Continental Hill, Glen Cove, N.Y.—F.I.M.
 Harmon Electronics Co., 11431 Truman Rd., Independence, Mo.—B.E.P.
 Hartley & Co., H. A., 521 E. 162nd St., Bronx 5, N.Y.—D
 Helder Mfg. Corp., 238 Lewis St., Paterson, N.J.—H.F.I.M.P.S.
 HUDSON TOOL & DIE CO., 412 S. 14 St., Newark 7, N.J.—P
 Independent Mfg. Co., 5 Bellevue Ave., E. Riverport, N.J.—F.M.N.O.
 Industrial Television Inc., 369 Lexington Ave., Clifton, N.J.—B.F.I.M.S.
 Insulating Fabricators of N.E., 69 Grove St., Watertown 72, Mass.—T
 Insuline Corp. of America, 186 Granite St., Manchester, N. H.—A.B.C.E.F.I.L.M.N.O.Q.S.T.U.
 JFD Mfg. Co., 6101 16th Ave., Brooklyn 4, N.Y.—F.N.
 Johns-Manville, 22 E. 40th St., New York 16, N.Y.—T
 Juvenile Furniture, Inc., 202 N. Cass St., Peru, Ind.—D
 Kaiser Metal Products, Inc., Bristol, Pa.—S

Kane Electronics Corp., 81 Willoughby St., Brooklyn 1, N.Y.—A.B.D.M.N.Q.T.
 Karp Metal Products Co., Div. H & B American Machine Co., 211 63rd St., Brooklyn 20, N.Y.—H.E.F.I.M.N.Q.R.S.
 Keller Products, 41 Union St., Manchester, N.H.—E.I.
 KELLOGG SWITCHBOARD & SUPPLY CO., 79 W. Monroe St., Chicago 3, Ill.—N
 Kent Metal Mfg. Co., 490 Johnson Ave., Brooklyn 37, N.Y.—B.E.F.I.M.N.O.
 Kirk & Blum Mfg. Co., 3120 Forrer, Cincinnati 9, Ohio—A.B.F.I.M.N.O.
 Kleer-Vue Mfg. Co., 636 Penn Ave., Pittsburgh 22, Pa.—R.C.
 Kling Metal Spinning Co., 174 Centre St., New York 13, N.Y.—I.P.S.
 Klise Mfg. Co., 50 Cottage Grove St., SW, Grand Rapids 2, Mich.—C.E.O.
 Kolton Electric Mfg. Co., 123 N.J. & R.R. Ave., Newark 5, N.J.—B
 Laidman & Co., 1308 N. Halsted St., Chicago 22, Ill.—G
 LaRose & Assoc., W. T., 31 Ontario St., Cohoes, N.Y.—B.F.M.
 Lavoie Labs. Inc., Morganville, N.J.—E.F.
 Lee Electric & Mfg. Co., 2806 Clearwater St., Los Angeles 39, Calif.—B.M.N.
 Lord Mfg. Co., 1635 W. 12th St., Erie, Pa.—N
 Lorentzen, Inc., H.K., 391 W. Broadway, New York 12, N.Y.—B.E.F.I.L.Q.S.
 Lowell Mfg. Co., 3030 Laclede Station Rd., St. Louis 17, Mo.—B.L.M.N.S.
 Mackenzie Products Co., 141 Brewery St., New Haven 11, Conn.—I
 Magna Electronics Co., 9819 Anza Blvd., Inglewood 1, Calif.—D.F.
 Malkin-Illion Co., 396 Coit St., Irvington 11, N.J.—B.E.F.M.N.
 Meridian Metal Craft Inc., 213 W. Whittier Blvd., Whittier, Calif.—B
 Metal Products Co., Craighead St., Nashville 4, Tenn.—B.M.N.O.
 Midwest Radio & Television Corp., 909 Broadway, Cincinnati 2, Ohio—D
 Millen Mfg. Co., James, 150 Exchange St., Malden 48, Mass.—J
 Miller Electric Co., P. O. Box 1827, Jacksonville, Fla.—B.C.D.F.M.N.O.
 Minute Man Products, Inc., 430 E. 102 St., New York 29, N.Y.—B.F.L.O.
 Molded Insulation Co., 335 E. Price St., Philadelphia 44, Pa.—C.E.
 Molded Products Corp., 4533 W. Harrison St., Chicago 24, Ill.—C
 Molding Corp. of America, 40 Church St., Pawtucket, R.I.—C
 Motiograph, Inc., 4431 W. Lake St., Chicago 24, Ill.—M.N.
 Muckle Mfg. Co., Owatonna, Minn.—B.Q.R.
 Multi-Metal Wire Cloth Co., 1350 Garrison Ave., New York 59, N.Y.—B.E.F.I.M.N.O.P.Q.S.
 Nagel-Chase Mfg. Co., 2811 N. Ashland Ave., Chicago 13, Ill.—L
 NATIONAL CO., 61 Sherman St., Malden, Mass.—U
 National Electrical Machine Shops, 919 Jesup Blair Dr., Silver Spring, Md.—B.F.M.
 Neal Feay Co., 427 Olive St., Santa Barbara, Calif.—M
 Nestor Eng'g. Co., 24 Chestnut St., Rutherford, N.J.—F.M.
 New Products Co., 1071 E. 54 St., Indianapolis 20, Ind.—C.O.T.
 North American Model Products, Inc., 9802 Warwick Rd., Warwick, Va.—D
 Northeastern Eng'g. Inc., So. Bedford St., Manchester, N.H.—B.F.M.N.S.
 North Electric Mfg. Co., S. Market St., Galion, Ohio—B.F.N.
 Northern Metal Prods. Co., 9595 W. Grand Ave., Franklin Park, Ill.—F
 Oberline Ltd., 6411 Hollywood Blvd., Hollywood 28, Calif.—D
 O'Brien Electric Corp., 6514 Santa Monica Blvd., Hollywood 38, Calif.—B.M.N.
 PAR-METAL PRODUCTS CORP., 32-62 49 St., L.I.C. 3, N.Y.—B.E.F.M.N.S.
 Peerless Electrical Products Div. Altec Lansing Corp., 9356 Santa Monica Blvd., Beverly Hills, Calif.—P
 Pentron Corp., The, 755 S. Tripp, Chicago, Ill.—D.E.K.
 Phoenix Precision Instrument Co., 3803 N. 5 St., Philadelphia 40, Pa.—B.I.
 Plasticraft Products Co., 1 Station Plaza, West Nyack, N.Y.—M
 Plymouth Electronics Corp., 50 Kingsbury St., Worcester, Mass.—A.B.E.F.I.L.M.N.O.
 Poray, Inc., 3369 W. Grand Ave., Chicago 51, Ill.—B.F.I.M.
 Pratt, Albert, 1939 N. 18 St., Milwaukee 5, Wis.—B.E.I.
 Premier Metal Etching Co., 21-03 44 Ave., Long Island City 1, N.Y.—M
 Premier Metal Products Co., 3160 Webster Ave., Bronx 67, N.Y.—B.F.I.M.N.Q.S.U.
 Q-Line Mfg. Corp., 1562 61 St., Brooklyn 19, N.Y.—A.R.C.E.F.I.M.N.O.P.Q.R.S.T.U.
 Radiophone Co., 600 E. Evergreen Ave., Monrovia, Calif.—B.F.I.
 Radio City Products Co., 101 W. 31 St. New York 1, N.Y.—B.C.E.I.N.S.U.
 RADIO CORP. OF AMERICA, RCA Victor Div., Eng'g. Products Div., Camden 2, N.J.—B
 Radio Kits, Inc., 120 Cedar St., New York 6, N.Y.—C
 Radio-Matic of America, 760 Ramsey Ave., Hillside, N.J.—D

Radio Recorders, 7000 Santa Monica Blvd., Hollywood 38, Calif.—D
 Radio & Television Inc., Brunswick Div., 119 W. 57 St., New York 19, N.Y.—D
 Railway Communications, Inc., Raywood, Mo.—N,P
 Raytor Corp., 5th St., & Cannon Ave., Lansdale, Pa.—A,B,F,M,N,O,Q,R,S,T
 REF Mfg. Corp., 393 Jericho Turnpike, Mineola, N.Y.—B,E,F,I,M,O,Q,R,S
 Reiner Electronics Corp., 152 W. 25 St., New York 1, N.Y.—B,F,M
 Reister & Thesmacher Co., 1526 W. 25 St., Cleveland 13, Ohio—B,F
 Reiter Co., 2101 Bryant St., San Francisco 10, Calif.—U
 Restoran Instrument Co., 233 Broadway, New York 7, N.Y.—A,B,C,F,I,M,N,O
 Rhode Island Electronics, Inc., Mill St., Lonsdale, R.I.—A,B,F,M,N,P,Q,S
 Richardson Co., Lockland, Cincinnati 15, Ohio—C,I
 Rigidized Metals, Corp., 658 Ohio St., Buffalo 3, N.Y.—M
 River Edge Industries, 5 River Edge Rd., River Edge, N.J.—D,E,I,N
 Rogers Corp., Goodyear, Conn.—T
 ROMAR PLASTICS INC., 1311 E. Main St., St. Charles, Ill.—C,I
 SAMPSON CHEMICAL & PIGMENT CORP., 2830 W. Lake St., Chicago 12, Ill.—M
 Scientific Wood Cabinet Co., 85 Holmes St., Belleville 9, N.J.—D,E,I,O,Q
 Service Parts Systems, 13389 E. 9 Mile Rd., E. Detroit, Mich.—A
 Sherron Electronics, 1201 Flushing Ave., Brooklyn 6, N.Y.—F
 Shura-Tone Products Inc., 440 Adelphi St., Brooklyn 38, N.Y.—D,E
 Slate & Assoc., Claude C., 11370 W. Olympic Blvd., Los Angeles 64, Calif.—B,C
 S.O.S. Cinema Supply Corp., 602 W. 52 St., New York 19, N.Y.—H
 Spaulding Fibre Co., 310 Wheeler St., Tona-wanda, N.Y.—Q,T
 SPECIFIC PRODUCTS, 14515 Dickens St., Sherman Oaks 14, Calif.—F
 Sperry Products Inc., Shelter Rock Rd., Dan-bury, Conn.—F,O
 Standard Electric Time Co., 119 Logan St., Springfield, Mass.—M
 Star Expansion Products Co., 147 Cedar St., New York 6, N.Y.—I
 Steiner-Ives Co., 483 Springfield Rd., Union, N.J.—B
 Stephens Mfg. Corp., 8538 Warner Dr., Culver City, Calif.—D
 Stromberg-Carlson Co., 100 Carlson Rd., Rochester 3, N.Y.—D,M
 Suckle Electronics Co., 22 & Hayes Ave., Camden 5, N.J.—B,E,F,G,I,L,M,N,O,Q,S
 Tablet Mfg. Co., 1336 Ballentine Blvd., Norfolk, Va.—F,M
 Taylor Fibre Co., Norristown, Pa.—T
 Technical Material Corp., 700 Fenimore Rd., Mamaroneck, N.Y.—C,D,R
 Tele Plastics Co., 202 Broadway, Brooklyn 11, N.Y.—V
 Television Products Co., 1147 N. McCadden Pl., Hollywood 38, Calif.—B,E,F,I,M,N,O,S,U
 Thompson Clock Co., H.G., 38 Federal St., Bristol, Conn.—A,B,C,D,E,G,I,M,N,O
 Transformer Metal Products Corp., 343 W. 26th St., New York, N.Y.—A,B,E,F,I,L,M,N, O,P,Q,R,S
 Triad Portable Case Corp., 310 W. Lincoln Ave., Mount Vernon, N.Y.—D,E,I,K
 U.M. & F. MFG. CORP., 10929 Van Owne St., N. Hollywood, Calif.—B,D,E,F,I,M,N,Q,S,T,U
 Universal Aviation Equip. Inc., 362 5 Ave., New York 1, N.Y.—M,T
 U.S. Radium Corp., 535 Pearl St., New York 7, N.Y.—M,V
 U.S. Testing Co., 1415 Park Ave., Hoboken, N.J.—A,B,C,D,E,F,I,M,N,O,P,Q,R,S
 Utah Radio Products Co., 1123 E. Franklin St., Huntington, Ind.—B,D
 VICTORY MFG CO., 1722 W. Arcade Pl., Chicago 12, Ill.—C
 Walsco Electronics Corp., 3225 Exposition Pl., Los Angeles 18, Calif.—A,Q
 Wallace & Associates, 1532 Hillcrest Rd., Cleveland 18, Ohio—B
 Wallace Mfg. Co., W. T., Peru, Ind.—D
 Wampler Inc., 27-10 Astoria Blvd., Long Island City 2, N.Y.—F,Q,R
 Western Int'l. Co., 45 Vesey St., New York 7, N.Y.—B,F,M,N
 Western Sound & Electric Labs., Inc., 805 S. 5 St., Milwaukee 4, Wisc.—B,M
 White Rock Mfg. Co., White Rock, S.C.—D,E
 WICKES ENG'G. & CONST. CO., 12th & Ferry Ave., Camden, N.J.—B,D,F,M,S
 Wright-Hemp Assoc., 138 West St., S. Hackensack, N.J.—A,B,F,F,I,L,M,N,O,P,Q,S
 Wright, Inc., 2233 University Ave., St. Paul 14, Minn.—B
 Zero Mfg. Co., 1121 Chestnut St., Burbank, Calif.—B,F,I,M,Q,S

13—CAPACITORS, FIXED

Capacitors, airA
 Capacitors, bathtubV
 Capacitors, ceramicB
 Capacitors, compositionZ
 Capacitors, decadeW
 Capacitors, electrolytic dryC
 Capacitors, electrolytic wetD

Capacitors, feed throughE
 Capacitors, gas-filledF
 Capacitors, glassG
 Capacitors, industrialH
 Capacitors, metallized paperI
 Capacitors, micaJ
 Capacitors, neutralizingX
 Capacitors, oilK
 Capacitors, paperL
 Capacitors, plastic dielectricM
 Capacitors, plug-inN
 Capacitors, polystyrene insulated ..O
 Capacitors, silicone-filledY
 Capacitors, silvered micaP
 Capacitors, standardQ
 Capacitors, tantalumR
 Capacitors, temperature com-pensatedS
 Capacitors, transmittingT
 Capacitors, vacuumU

Acme Electronics Inc., (Sub. Aerovox Corp.) 2724 Peck Rd., Monrovia, Calif.—C,I,J,M
 AEROVOX CORP., 740 Belleville Ave., New Bedford, Mass.—B,C,E,H,I,J,K,L,M,N,O,P,Q,R,S,T,V,W,Y
 Allen-Bradley Co., 1326 S. 2 St., Milwaukee 4, Wisc.—B,E,S
 American Condenser Co., 4410 N. Ravenswood Ave., Chicago 40, Ill.—C,H,K,L,V,Y
 AMERICAN LAVA CORP., Cherokee Blvd. & Mfgs. Bld., Chattanooga 5, Tenn.—B
 American Radio Co., 445 Park Ave., New York 22, N.Y.—B,S
 American Radionic Co., 33 Flatbush Ave., Brooklyn 17, N.Y.—B,L,V
 American Vacuum Products Corp., 5779 Santa Monica Blvd., W. Los Angeles 9, Calif.—U
 AMPEREX ELECTRONIC CORP., 230 Duffy Ave., Hicksville, L.I., N.Y.—U
 Arco Electronics, 103 Lafayette St., New York 13, N.Y.—B,E,J,L,P,Q
 Arnold Ceramics, 1 E. 57 St., New York 22, N.Y.—B,P
 Asheville-Schoonmaker Mica Co., 900 Jefferson Ave., Newport News, Va.—B
 ASTRON CORP., 233 Grant Ave., East Newark, N.J.—C,H,I,K,L,M,O,V,Y
 Automatic Electric Co., 1033 W. Van Buren St., Chicago 7, Ill.—L
 Automatic Mfg. Corp., 65 Gouverneur St., Newark 4, N.J.—B,E,M,P,S
 Balco Research Labs., 49 Edison Pl., Newark 2, N.J.—M
 Barker & Williamson, 237 Fairfield Ave., Upper Darby, Pa.—A,T
 Barry Electronics Corp., 136 Liberty St., New York 6, N.Y.—C,H,U
 Beam Instruments Corp., 350 5 Ave., New York 1, N.Y.—B,C,D,H,J,L,M,N,P,Q,S,T,U
 BERKSHIRE LABS., 586 Beaver Pond Rd., Lincoln, Mass.—N
 Bram Chemical Co., 820 65 Ave., Philadelphia 28, Pa.—R
 British Radio Electronics Ltd., 1833 Jefferson Pl., N.W., Washington 6, D.C.—P
 Brown Electro-Measurement Corp., 4635 S. E. Hawthorne Blvd., Portland 15, Ore.—Q
 BUD RADIO INC., 2118 5 St., Cleveland 3, Ohio—A
 CENTRAL LAB. DIV. GLOBE-UNION INC., 900 E. Keefe Ave., Milwaukee 1, Wisc.—B,E,H,N,Q,S,T
 Chicago Condenser Corp., 3255 W. Armitage Ave., Chicago 47, Ill.—E,K,L,V
 Church Co., George H., 5109 Halifax Ave., Minneapolis 10, Minn.—E, H, I, K, L, M, O, T, V, Y
 Condenser Mfrs. Inc., 1018 Pearl St., Nashville 4, Tenn.—C
 Condenser Products Co., 7517 N. Clark St., Chicago 26, Ill.—G,H,K,M,N,O,Q,S,T
 Cornell-Dubilier Electric Corp., 333 Hamilton Blvd., South Plainfield, N.J.—B,C,E,H,I,J,K, L,M,N,O,P,Q,R,S,T,V,W
 CORNING GLASS WORKS, Corning, N.Y.—G
 Corson Electric Mfg. Corp., 540 39 St., Union City, N.J.—K,L,M,O,V,W,Y
 Cosmic Radio Corp., 853 Whittier St., Bronx 59, N.Y.—C,L
 Delco Remy Div., General Motors Corp., P. O. Box 640, Anderson, Ind.—A,E
 Deutschmann Corp., Tobe, Providence Highway, Norwood, Mass.—C,E,G,H,I,K,L,M,O,T, V,Y
 Dilectrom Inc., 2661 S. Myrtle Ave., Monrovia, Calif.—B
 Dolinko & Wilkens, 1907 Summit Ave., Union City, N.J.—T,U
 Du-Co Ceramics Co., Box 587, Butler, Pa.—B
 Dumont-Airplane & Marine Instruments, Inc., 15 William St., New York 5, N.Y.—C,D,E, H,K,L,M,O,Q,S,V,Y
 EITEL-McCULLOUGH INC., 798 San Mateo Ave., San Bruno, Calif.—U
 Electrical Utilities Co., 2427 St. Vincent's Ave., LaSalle, Ill.—E,K,L,M,V,Y
 Electro-Motive Mfg. Co., Willimantic, Conn.—B,E,J,L,P
 ELECTRONIC FABRICATORS, INC., 682 Broadway, New York 12, N.Y.—K,M,P,V,Y
 Erie Resistor Corp., 644 W. 12 St., Erie, Pa. B,E,P,S

Fansteel Metallurgical Corp., 2200 Sheridan Rd., No. Chicago, Ill.—R
 River Rd., Schenectady 5, N.Y.—C,L,M,R,U
 Fast & Co., John, 3129 N. Crawford Ave., Chicago 4, Ill.—H,K,L,M,O,T,V,Y
 Film Capacitors Inc., 3400 Park Ave., New York 56, N.Y.—M,O,Q,V,W
 FREED TRANSFORMER CO., 1718 Weirfield St., Brooklyn 27, N.Y.—W
 Galeo Electric Co., 65 W. Broadway, New York 56, N.Y.—M,O,Q,V,W
 GENERAL ELECTRIC CO. APPARATUS DIV. 1 River Rd., Schenectady 5, N.Y.—C, D,L,M
 General Products Corp., 107 Salem St., Union Springs, N.Y.—L,V
 GENERAL RADIO CO., 275 Mass. Ave., Cambridge 39, Mass.—A,J,Q,W
 Geotronic Labs. Inc., 1314 Cedar Hill Ave., Dallas 8, Tex.—M
 Girard-Hopkins, 1000 40 Ave., Oakland 1, Calif.—K,L
 Glenco Corp., Durham Ave., Metuchen, N.J.—B,S
 Good-All Electric Mfg. Co., Ogallala, Nebr.—E,K,L,M,N
 GUEDEMAN CO., 340 W. Huron St., Chicago 10, Ill.—B,C,E,G,H,I,K,L,M,N,Q,V,W
 GULTON MFG. CO., 212 Durham Ave., Metuchen, N.J.—B,S
 Herlec Corp., 6th & Beach Sts., Grafton, Wis.—B
 Hopkins Eng'g. Co., 2082 Lincoln Ave., Altadena, Calif.—E,I,K,L,M
 Illinois Condenser Co., 1616 N. Throop St., Chicago 22, Ill.—C,H,N,T,V
 Industrial Condenser Corp., 3243 N. California Ave., Chicago 18, Ill.—C,H,I,K,L,M,N,O,T,V
 INSULATED CIRCUITS, INC., 115 Roosevelt Ave., Belleville, N.J.—M
 Insuline Corp. of America, 196 Granite St., Manchester, N.H.—B,O,W
 Intercontinental Industries, Inc., 555 W. Adams St., Chicago 6, Ill.—J,P
 Jeffers Electronics Div., Speer Carbon Co., Hoover Ave., Du Bois, Pa.—B,E,S,Z
 JENNINGS RADIO MFG. CO., P. O. Box 1278, San Jose 8, Calif.—E,T,U,X
 Johnson Mfg. Co., Bonton, N.J.—A,U
 JOHNSON CO., E. F., Waseca, Minn.—F,T
 KELLOGG SWITCHBOARD & SUPPLY CO., 79 W. Monroe St., Chicago 3, Ill.—L
 Lapp Insulator Co., Radio Specialties Div., 24 Summer St., LeRoy, N.Y.—F,H,T
 Leeds & Northrop Co., 4970 Stenton Ave., Philadelphia 44, Pa.—Q
 Luther Electronic Mfg. Co., 5728 W. Washington Blvd., Los Angeles 16, Calif.—K,I
 MacLeon & Hanopol, 10 Roland St., Charlestown, Mass.—Q
 MAGNAVOX CO., Fort Wayne 4, Ind.—C,R
 Maida Development Co., 214 Academy St., Hamorton, Va.—B,E,S
 MALLORY & CO., P. R., 3029 E. Washington St., Indianapolis 6, Ind.—B,C,E,I,J,K,L,M, N,P,R,T
 Micamold Radion Corp., 1087 Flushing Ave., Brooklyn 37, N.Y.—C,E,H,J,K,L,M,N,P,T,V, Y
 Mitronics Inc., 232 13 Ave., Newark, N.J.—B,G,F
 Mucron Corp., 9 St. Francis St., Newark 5, N.J.—H
 Muter Co., 1255 S. Michigan Ave., Chicago 5, Ill.—B,E,S
 National Capacitor Co., 60 Washington Ct., Quincy 69, Mass.—E,G,H,I,L,L,M,O,Q,S,T,V, W,X,Y
 Neptune Electronic Co., 433 Broadway, New York 13, N.Y.—C,D,H,I,J,K,L,M,N,P,Q,V
 New York Coil Co., Phoenixville, Pa.—K,L,V,Y
 Onondaga Pottery Co., Electronics Div., 1858 W. Fayette St., Syracuse 1, N.Y.—B
 Parts Producing Corp., Manhattan Div., 1861 Second Ave., New York 28, N.Y.—A,H,T
 PHILCO CORPORATION—Accessory Div., "A" & Allegheny Ave., Philadelphia 34, Pa.—A,B,C,D,E,F,G,H,I,J,L,O,S,X
 Philmore Mfg. Co., 113 University Pl., New York 3, N.Y.—C,J
 PHOTOCIRCUITS CORP., New St., Glen Cove, N.Y.—M
 PLANET MFG. CORP., 225 Belleville Ave., Bloomfield, N.J.—C
 Plastic Capacitors, Inc., 2511 W. Moffat S Chicago 47, Ill.—G,H,K,M,O,Q,S,T,V,W,Y
 POTTER CO., 1950 Sheridan Rd., North Chicago, Ill.—E,H,K,L,M,N,V,Y
 PYRAMID ELECTRIC, 1445 Hudson Blvd., N. Bergen, N.J.—C,E,H,I,K,L,M,N,O,Q,T,U, V,Y
 "Q" Glass Co., 470 Broad St., Bloomfield, N.J.—G,U
 Quality Components Co., St. Marys, Pa.—Z
 Radio Ceramics Corp., 109 S. Superior St., Angola, Ind.—B
 Radio Industries, Inc., 5225 N. Ravenswood Ave., Chicago 25, Ill.—B,E,P
 RADIO MATERIALS CORP., 3325 N. Calif. Ave., Chicago 18, Ill.—B
 Radio Television Products Corp., 308 N. Lake St., Grass Lake, Mich.—P
 Research Instrument Co., 233 Broadway, New York 7, N.Y.—A,B,S,T,U
 Sanders Associates, Inc., 137 Canal St., Nashua, N.H.—B,M
 San Fernando Electric Mfg. Co., 1509 First St., San Fernando, Calif.—I,L,Q,Y
 SANGAMO ELECTRIC CO., Box 7, Marion, Ill.—C,J,K,L,P,R,V

skottie Electronics Inc., 731 Pleasant Ave., Peckville, Pa.—H.E.
 Solar Mfg. Corp., E. 46 & Seville, Los Angeles 58, Calif.—B.E.S.
 Southern Electronics Corp., 239 W. Orange Grove Ave., Burbank, Calif.—M.O.S.W.
 Speer Carbon Co., Speer Resistor Div., St. Marys, Pa.—B.E.
 SPRAGUE ELECTRIC CO., 233 Marshall St., North Adams, Mass.—B,C,E,I,J,K,L,M,N,O, P,R,S,T,V
 STACKPOLE CARBON CO., Tannery St., St. Marys, Pa.—B,Q,Z
 Standard Coil Products Co., 2329 N. Pulaski Rd., Chicago 39, Ill.
 STUPAKOFF CERAMIC & MFG. CO., Latrobe, Pa.—B,S
 Telex Inc., 1633 Eustis St., St. Paul 1, Minn.—B
 Thompson Clock Co., H. C.—38 Federal St., Bristol, Conn.—C,D,E,I,J,N,T
 Union Spring & Mfg. Co., 1057 Summit Ave., Jersey City 7, N.J.—S
 United Condenser Corp., 337 E. 139 St., New York 54, N.Y.—L,M,O,Q
 United Electronic Mfg. Corp., 542 39 St., Union City, N.J.—C,D
 United Electronics Co., 42 Spring St., Newark 4, N.J.—U
 Vacuum Inc., 1009 W. Weed St., Chicago 22, Ill.—I,M,O,U
 Vacuum Tube Products, 608 S. Cleveland St., Oceanside, Calif.—U
 Walter Co. S., 1400 Atlantic Ave., Brooklyn 16, N.Y.—J,C,F,N,G
 Western Int'l. Co., 45 Vesey St., New York 7, N.Y.—H,J,K,N
 Wright Eng'g. Co., 180 E. Calif. St., Pasadena, Calif.—W

14—CAPACITORS, VARIABLE

Capacitors, air trimmer A
 Capacitors, ceramic trimmer B
 Capacitors, gas-filled C
 Capacitors, mica trimmer D
 Capacitors, modulated sweep E
 Capacitors, neutralizing F
 Capacitors, precision G
 Capacitors, receiving tuning H
 Capacitors, transmitter tuning I
 Capacitors, vacuum J

Aerolite Electronics Corp., 507 26 St., Union City, N.J.—I
 All Star Products, Defiance, Ohio—A,H
 AMERICAN LAVA CORP., Cherokee Blvd. & Mfrs. Rd., Chattanooga 5, Tenn.—B
 American Vacuum Products Corp., 11779 Santa Monica Blvd., W. Los Angeles 25, Calif.—J
 Arco Electronics, 108 Lafayette St., New York 13, N.Y.—B,D
 Arnhold Ceramics, Inc., 1 E. 57 St., New York 22, N.Y.—B
 Asheville-Schoonmaker Mica Co., 900 Jefferson Ave., Newport News, Va.—B
 Automatic Mfg. Corp., 65 Gouverneur St., Newark 4, N.J.—A,B
 Barker & Williamson, 237 Fairfield Ave., Upper Darby, Pa.—F,I
 British Electronic Sales Co., 23-03 45th Rd., Long Island City 1, N.Y.—A
 HUD RADIO INC., 2118 E. 55th St., Cleveland 3, Ohio—A,I
 Cambridge Thermionic Corp., 445 Concord Ave., Cambridge 38, Mass.—B
 Cardwell Electronics Productions, Allen D., Plainville, Conn.—A,F,G,I,J
 CENTRALAB, DIV. OF GLOBE-UNION INC., 900 E. Keefe Ave., Milwaukee 1, Wisc.—B,G
 Communication Device Co., 2331 12 Ave., New York City 27, N.Y.—H,I
 CORNING GLASS WORKS, Corning, N.Y.—B
 DeWald Radio & Tele. Corp., 35-15 37 Ave., Long Island City 1, N.Y.—A
 Du-Co Ceramics Co., Box 587, Butler, Pa.—B
 EITEL-McCULLOUGH, INC., 798 San Mateo Ave., San Bruno, Calif.—J
 Electro-Motive Mfg. Co., Willimantic, Conn.—A,B,D
 Electronic Heating Corp., 68 Needham St., Newton Highlands 61, Mass.—I
 Erie Resistor Corp., 644 W. 12 St., Erie, Pa.—B
 FEDERAL TELEPHONE & RADIO CO., DIV. I.T. & T., 100 Kingsland Rd., Clifton, N.J.—H,I
 General Instrument Corp., 829 Newark Ave., Elizabeth 2, N.J.—A,B,C,D,E,F,H,I,J
 GENERAL RADIO CO., 276 Mass. Ave., Cambridge 39, Mass.—G
 GERTSCH PRODUCTS, Inc., 11846 Miss. Ave., Los Angeles 25, Calif.—G
 HAMMARLUND MFG. CO., 460 W. 34th St., New York 1, N.Y.—A,F,G,H,I
 Herlec Corp., 6th & Beach St., Grafton, Wisc.—B
 Hi Q Div. Aerovox Corp. Olean, N.Y.—B
 Hopkins Eng'g. Co., 2082 Lincoln Ave., Altadena, Calif.—A
 Insuline Corp. of America, 186 Granite St., Manchester, N.H.—B,G
 JENNINGS RADIO MFG. CO., P. O. Box 1278, San Jose 8, Calif.—F,I,J
 JFD Mfg. Co., 6101 16 Ave., Brooklyn 4, N.Y.—A,G
 Johnson Mfg. Corp., Rockaway Valley Rd., Boonton, N.J.—A,C,E,G,H,I,J

JOHNSON CO., E. F., Waseca, Minn.—C,F,I
 Lapp Insulator Co., Radio Specialties Div., 24 Summer St., LeRoy, N.Y.—C,I
 Leeds & Northrop Co., 4970 Stenton Ave., Philadelphia 44, Pa.—G
 Maida Development Co., 214 Academy St., Hampton, Va.—B
 McCOY ELECTRONICS CO., Watt & Chestnut Sts., Mount Holly Springs, Pa.—H,I
 Miller Mfg. Co., James, 160 Exchange St., Malden, Mass.—A,F,I
 Mitronics Inc., 232 13 Ave., Newark, N.J.—B
 Mucon Corp., 9 St. Francis St., Newark 5, N.J.—B
 Muter Co., 1255 S. Michigan Ave., Chicago 5, Ill.—B,G
 MYCALEX CORP. OF AMERICA, 125 Clifton Blvd., N.J.—B
 National Capacitor Co., 585 Washington St., Quincy 69, Mass.—G
 NATIONAL CO., INC.—61 Sherman St., Malden 48, Mass.—A,B,F,H,I
 Oak Mfg. Co., 1260 Clybourn Ave., Chicago 10, Ill.—H
 Parts Producing Corp., Manhattan Div., 1861 2nd Ave., New York 28, N.Y.—G,I
 PHILCO CORPORATION—Accessory Div., "A" & Allegheny Ave., Philadelphia 34, Pa.—A,H,I
 Philmore Mfg. Co., 113 University Pl., New York 3, N.Y.—H
 "Q" Glass Co., 470 Broad St., Bloomfield, N.J.—J
 Radio Condenser Co., Davis & Copewood Sts., Camden, N.J.—A,B,H,I
 Radio Industries, Inc., 5225 N. Ravenswood Ave., Chicago 25, Ill.—B
 Research Instrument Co., 233 Broadway, New York 7, N.Y.—F,G,I,J
 Sickles Div., F. W., General Instrument Corp., P.O. Box 330, Chicopee, Mass.—A
 Solar Mfg. Corp., E. 46 & Seville, Los Angeles 58, Calif.—B
 Southern Electronics Corp., 239 W. Orange Grove Ave., Burbank, Calif.—G
 Speer Carbon Co., Speer Resistor Div., St. Marys, Pa.—B
 SPRAGUE ELECTRIC CO., North Adams, Mass.—B
 STUPAKOFF CERAMIC & MFG. CO., Latrobe, Pa.—B
 TARZIAN INC., SARKES, 539 S. Walnut St., Bloomington, Ind.—A
 Television Co. of America, 1761 Lincoln Blvd., Santa Monica, Calif.—E
 TEL-INSTRUMENT CO., 728 Garden St., Carlstadt, N.J.—E
 Thompson Clock Co., H.C., 38 Federal St., Bristol, Conn.—H,I
 Union Spring & Mfg. Co., 1057 Summit Ave., Jersey City 7, N.J.—A,G
 Vacuum Tube Products, 608 S. Cleveland St., Oceanside, Calif.—J
 Wheaton Co., T. C., Milville, N.J.—A
 White Industries Inc., 421 W. 64 St., New York 19, N.Y.—H
 Wilmar Mfg. Co., 2715 E. 14 St., Kansas City 27, Mo.—I

15—CHASSIS ACCESSORIES

CONNECTING DEVICES

Adapters, crystal AA
 Adapters, lamp socket AB
 Adapters, plug AC
 Adapters, test AD
 Adapters, tube socket AE
 Binding posts A
 Coaxial cable fittings B
 Harnesses C
 Jacks D
 Jumpers E
 Lugs F
 Safety terminals G
 Slip rings H
 Sockets, coil X
 Sockets, transistor Y
 Sockets, tube Z
 Soldering lugs I
 Solderless lugs J
 Terminals & terminal strips K

FUSES & FUSE HOLDERS

Fuse clips L
 Fuses, cartridge AF
 Fuses, instrument AG
 Fuses, plug AH
 Fuse holders N

SHIELDING

Coil shielding O
 Electrostatic shielding P
 Heat shielding Q
 Ignition shielding R
 Lead shielding S
 Magnetic shielding T
 Rubber shielding U
 Screen shielding V
 Tube shielding W

Accurate Electronics Corp., 1312 Ontario St., N.W., Cleveland 13, Ohio—A,F,I,K,X,Y,Z

ACCURATE PAPER TUBE CO., 805 N. Peoria St., Chicago 22, Ill.—O,P,W
 Acme Telectronic, Div., NEA Service, 1200 W. 3rd St., Cleveland 13, Ohio—C
 Aerolite Electronics, 507 26 St., Union City, N.J.—A,C,D,E,F,G,I,K,L,N,AC,AD
 Aeronautical Electronics, P.O. Box 6043, Raleigh, N.C.—R,AA
 Aeronautical Radio Mfg. Co., 155 1st St., Mineola, N.Y.—B,C,D,N,AA
 AEROVOX CORP., 719 Belleville Ave., New Bedford, Mass.—D
 Aircraft Marine Products, 2100 Paxton St., Harrisburg, Pa.—I,K
 Airflyte Electronics Co., 21 Cottage St., Bayonne, N.J.—H
 AIRTRON INC., 1103 W. Elizabeth Ave., Linden, N.J.—R
 Alcon Metal Products, 1750 N. Kimball Ave., Chicago 47, Ill.—I,AB,AK
 ALDEN PRODUCTS CO., 117 N. Main St., Brockton 64, Mass.—A,C,D,E,F,I,J,K,L,N,Y,Z,AE,AB,AF
 Allied Industries, 2500 Woodland Ave., Louisville 10, Ky.—B,C,D,AA,AC
 A. L. Products Co., 311 Hickory St., Kearny, N.J.—AD
 American Laubscher Corp., 333 W. 52 St., New York 19, N.Y.—F,I,K,M,N
 AMERICAN LAVA CORP., Chattanooga 5, Tenn.—K
 AMERICAN PHENOLIC CORP., 150 S. 54 Ave., Chicago 50, Ill.—B,C,E,K,W,X,Z,AC,AD,AE
 American Radio Hardware Co., 152 S. MacQuesten Parkway, Mt. Vernon, N.Y.—A,D, F,I,K,L
 Arey Machine Co., 38 Long Ave., Hillside 5, N.J.—C,U
 Arrow-Hart & Hexeman Electric Co., 103 Hawthorn St., Hartford 6, Conn.—I
 Associated Engineering Corp., 65 Kent St., Brookline 46, Mass.—C
 Atlas E-E Corp., Bedford Airport, Bedford, Mass.—L,W
 Atomic Instrument Co., 84 Mass. Ave., Cambridge 39, Mass.—S
 Authorized Mfrs. Service Co., 913 Wyckoff Ave., Brooklyn 27, N.Y.—C
 Automatic Mix Corp., Gouverneur St., Newark 4, N.J.—O
 Automatic Metal Products Corp., 315 Berry St., Brooklyn 11, N.Y.—A,B,C
 Bar-Ray Products, 209 25 St., Brooklyn 32, N.Y.—S
 Bennett Products Mfg. Co., P.O. Box 1055, Palo Alto, Calif.—K
 Birnbach Radio Co., 145 Hudson St., New York 13, N.Y.—N,R
 Birtcher Corp., 4371 Valley Blvd., Los Angeles 32, Calif.—W
 Bliss Electronic Corp., Box 123, Sussex, N.J.—K
 B. K. M. Elec. Co., 838 4 Ave., Brooklyn 32, N.Y.—C
 Breeze Corporations, Inc., 700 Liberty Ave., Union, N.J.—R
 Brelo Electronics Corp., 55 Vandam St., New York 13, N.Y.—D
 British Electronic Sales Co., 23-03 45 Rd., Long Island City 1, N.Y.—A,B,D,F,G,K,L,N, W,Z,AF,AG,AH
 Buchanan Electrical Products Corp., 235 U. S. Route 22, Hillside, N.J.—J,K
 Budd-Stanley Co., 43-01 22 St., Long Island City 1, N.Y.—B
 BUD RADIO INC., 2118 E. 55 St., Cleveland 3, Ohio—D
 Burndy Eng'g. Co., Norwalk, Conn.—B,F,I,K
 BUSSMANN MFG. CO., University at Jefferson St., Louis 7, Mo.—L,N,AF,AG,AH
 Cambridge Thermionic Corp., 445 Concord Ave., Cambridge 38, Mass.—A,F,K
 Carter Parts Co., 213 Institute Pl., Chicago 10, Ill.—D
 Centralab Div., Globe Union, Inc., 900 E. Keefe Ave., Milwaukee 1, Wisc.—B,Z
 Chester Morton Electronics Corp., 10 St. & Morton Ave., Chester, Pa.—C
 CINCH MFG. CORP., 1926 S. Homan Ave., Chicago 24, Ill.—A,D,F,I,K,N,P,W,X,Y,Z
 CITATION PRODUCTS CO., 233 E. 146 St., New York 51, N.Y.—A,D,E,F,G,K,N,AC,AD
 COAXIAL CONNECTOR CO., 35 N. 2 Ave., Mount Vernon, N.Y.—B,C,AC,AD
 Colorzone Electronics, 238 William St., New York 38, N.Y.—C
 Conn-Cord, Inc., Progress Ave., & Monroe St., Union, N.J.—C,D
 Connecticut Hard Rubber Co., 407 East St., New Haven 9, Conn.—P,R
 Conn. Telephone & Electric Co., 70 Britannia St., Meriden, Conn.—C,K
 Connector Corp., 6025 N. Keystone Ave., Chicago 30, Ill.—K,L,N,X,Z,AE
 Consolidated Productions, Inc., Building 9, Broward International Airport, Ft. Lauderdale, Fla.—C
 CONSTANTIN & CO., L. L., Route 46, Lodi, N.J.—K
 Co-operative Industries, 109 Oakdale Rd., Chester, N.J.—P,R,S,T,V
 Curtis Development & Mfg. Co., 3266 N. 33 St., Milwaukee 16, Wisc.—K
 Dante Electric Mfg. Co., P.O. Box 6, Bantam, Conn.—F,I,J,K,L
 Decatur Electronic Industries, 1620 Decatur St., Brooklyn 27, N.Y.—C
 DEJUR-AMSCO CORP., 45-01 Northern Blvd., Long Island City 1, N.Y.—H,K
 Dielectric Materials Co., 5315 N. Ravenswood Ave., Chicago 40, Ill.—C

Digital Products, Inc., 7643 Fay Ave., LaJolla, Calif.—Z
Dimco-Gray Co., 207 E. 6 St., Dayton 2, Ohio—K
Division Lead Co., 836 W. Kinzie St., Chicago 22, Ill.—L.S
D & M Products, 13316 Hamilton Ave., Detroit 3, Mich.—N.A.F.A.G.A.H
Dorn Equipment Corp., 85 Broad St., Boston 10, Mass.—A.D.A.C
Dumont-Airplane & Marine Instruments, Inc., Clearfield, Pa.—C
Eagle Electric Mfg. Co., 23-10 Bridge Plaza, Long Island City, N.Y.—A.B.A.C.A.F.A.H
EBY INC. HUGH H., 4700 Stenton Ave., Philadelphia 44, Pa.—A.D.E.K.N.W.X.Y.Z.
A.A.A.B.A.C.A.E
EITEL-McCULLOUGH, INC., 798 San Mateo Ave., San Bruno, Calif.—Z
ELCO CORP., 190 W. Glenwood Ave., Philadelphia 19, Pa.—A.W.Y.Z.A.E
ELECTRICAL INDUSTRIES—DIV. AMPEREX ELECTRONIC CORP., 44 Summer Ave., Newark 4, N.J.—K
Electro Devel. Co., 6006 W. Washington Blvd., Culver City, Calif.—H
Electronic Heating Corp., 66 Needham St., Newton Highlands 61, Mass.—V
Electronic Mechanics, Inc., 191 Clifton Blvd., Clifton, N.J.—K.Z
Electronic Products Co., Box 450, Red Bank, N.J.—A.C
Eldi Electronic Devices, 204 W. Houston St., New York 14, N.Y.—C
Empire Electronics Co., 166 River St., Paterson 1, N.J.—B.K
Federal Screw Products Inc., 224 W. Huron St., Chicago 10, Ill.—I.J.K.L.N
FEDERAL TELEPHONE & RADIO CO., DIV. L. T. & T., 100 Kingsland Rd., Clifton, N.J.—K
Felts Corp., Microdot Div., 1826 Fremont Ave., S. Pasadena, Calif.—B.C.D
GARDE MFG. CO., 588 Eddy St., Providence 3, R.I.—A.G.K
Gates Radio Co., 123 Hampshire St., Quincy, Ill.—Z
Gavitt Mfg. Co., Brookfield, Mass.—C
GEE-LAR MFG. CO., 819 Elm St., Rockford, Ill.—L.N.A.F.A.H
General Cement Mfg. Co., 919 Taylor Ave., Rockford, Ill.—A.D.F.I.J.K.L.N.Z.A.C.A.D
GENERAL ELECTRIC CO., CONSTRUCTION MATERIALS DIV., 1285 Boston Ave., Bridgeport 2, Conn.—A.F.A.H
General Hermetic Sealing Corp., 99 E. Hawthorne Ave., Valley Stream, N.Y.—C
General Products Corp., 107 Salem St., Union Springs, N.Y.—C
GENERAL RADIO CO., 275 Mass. Ave., Cambridge, Mass.—A.R.D
GENERAL R-F FITTINGS CO., 702 Beacon St., Boston 15, Mass.—B
General Tire & Rubber Co., Industrial Products Div., Wabash, Ind.—U
Goat Co., Fred, 308 Dean St., Brooklyn 17, N.Y.—W
Gomset Co., 801 S. Main St., Burbank, Calif.—B.C
Grammar Mfg. Co., Wright St., Lynn, Mass.—B
GRAPHITE METALLIZING CORP., 1015 Netherland Ave., Yonkers, N.Y.—H
GUDEBROD BROS., 12 S. 12 St., Philadelphia 7, Pa.—C
Gulton Mfg. Corp., 212 Durham Ave., Metuchen, N.J.—B
Hall Inc., F. Sumner, Amityville, N.Y.—D
Harwood Mfg. Co., 466 W. Superior St., Chicago 10, Ill.—A
HEMINGWAY & BARTLETT, 500 Fifth Ave., New York 36, N.Y.—C
Hoyran Mfg. Co., 600 Michigan Ave., Kenilworth, N.J.—I
Hobbs Mfg. Co., 26 Salisbury St., Worcester 5, Mass.—C
Hobson Bros., 4940 W. Lawrence Ave., Chicago 30, Ill.—I
Hopkins Eng'g. Co., 2082 Lincoln Ave., Altadena, Calif.—D.K
Houlihan Co., T. J., 2508 W. Lawrence Ave., Chicago 25, Ill.—C
Hubbell, Inc. Harvey, State St. & Bostwick Ave., Bridgeport, Conn.—N.A.H
HUDSON TOOL & DIE CO., 412 S. 14 St., Newark 7, N.J.—P.W
I. E. Mfg. Co., 325 N. Hoyle Ave., Chicago 12, Ill.—L
Iseo Copper Tube & Products, Inc., Cincinnati 27, Ohio—I.J.K.L
Independent Mfg. Co., 5 Bellevue Ave., E. Riverton, N.J.—F
Industrial Devices, Edgewater, N.J.—A
Industrial Hardware Mfg. Co., 109 Prince St., New York 12, N.Y.—F.I.J.K.Z
Instrument Corp. of America, Blacksburg, Va.—D.H
Instrument Specialties Co., 244 Bergen Blvd., Little Falls, N.J.—P
INSULATED CIRCUITS, INC., 115 Roosevelt Ave., Belleville, N.J.—K.P
Insulating Fabricators of N.E., 69 Grove St., Watertown 72, Mass.—K
Insuline Corp. of America, 186 Granite St., Manchester, N.H.—A.C.D.E.F.G.H.I.J.K.O.
W.X.Z
International Electronic Research, 175 W. Magnolia Blvd., Burbank, Calif.—W
Int'l. Pump & Machine Works, 11-13 Governor St., Newark 2, N.J.—S
JAN Hardware Mfg. Co., 75 N. 11 St., Brooklyn 11, N.Y.—T.W
Jerrold Electronics Corp., 26 & Dickinson Sts., Philadelphia 46, Pa.—B
JFD Mfg. Co., 6101 16 Ave., Brooklyn 4, N.Y.—C.D.E.F.G.I.J.K.L.N.R.S.V.Z.A.C.A.D.A.E.A.H
JOHNSON CO., E. F., Waseca, Minn.—D.W.
Z
JONES DIV., HOWARD B., CINCH MFG CORP., Chicago 24, Ill.—K
KELLOGG SWITCHBOARD & SUPPLY, 79 W. Monroe St., Chicago 3, Ill.—A.D.K
Keystone Watch Case Div., Riverside Metal Co., 1 Pavilion Ave., Riverside, N.J.—O.P
Kings Electronics Co., 49 Marbledale Rd., Tuckahoe, N.Y.—A.B.C.D.K.A.A.A.C.A.D.A.E
Kolton Electric Mfg. Co., 123 N.J.R.R. Ave., Newark 5, N.J.—F.I.J.K.L.N
Kulka Electric Mfg. Co., 633 S. Fulton Ave., Mount Vernon, N.Y.—C.F.I
Kupfrian Mfg. Co., 367 State St., Binghamton, N.Y.—C.P.S.T
Lear, Inc., 11916 W. Pico Blvd., Los Angeles 64, Calif.—R
Lingren & Assoc., Erik A., 4515 N. Ravenswood Ave., Chicago 40, Ill.—V
Littelfuse, Inc., 1865 Miner St., Des Plaines, Ill.—K.L.N.A.F.A.G
Long Inc., Thomas J., 215 Stonehinge Lane, Carle Place, L.I., N.Y.—K
Lundey Associates, 694 Main St., Waltham 54, Mass.—K
Lyseo Mfg. Co., 1401 Clinton St., Hoboken, N.J.—K
Mactead & Hanopol, 10 Roland St., Charlestown 9, Mass.—C
MAGNETICS, INC., Box 230, Butler, Pa.—T
Malco Tool & Mfg. Co., 4025 W. Lake St., Chicago 24, Ill.—A.F.I.J.K
Mandex Mfg. Co., 2608 W. 16 St., Chicago 9, Ill.—A.D.F.I.J.K.X.Z.A.E
Marlin Electric Co., 1750 N. Campbell Ave., Chicago 47, Ill.—K.L.N
Marshall Assoc. Inc., John, P.O. Box 2463, Bridgeport 8, Conn.—F
McShan Development Corp., 71 Murray St., New York 7, N.Y.—A.D.A.E
Metals & Controls Corp., General Plate Div., 34 Forest St., Attleboro, Mass.—H
Metal Textile Corp., 647 E. 1 Ave., Roselle, N.J.—O.P.R.U.V.W
METHODE MFG. CORP., 2021 W. Churchill St., Chicago 47, Ill.—K.P.Q.T.V.W.Y.Z.A.E
Mica Coated Products Co., 426 Essex St., Salem, Mass.—Q
Mica Insulator Co., P.O. Box 1076, Schenectady 1, N.Y.—K.Z
Micro-Circuits Co., New Buffalo, Mich.—P.W
Millen Mfg. Co., James, 150 Exchange St., Malden 48, Mass.—A.D.G.K.O.T.W.Z.A.A
Miller Electric Co., 129 Main St., Pawtucket, R.I.—A.F.A.H
Minn. Rubber & Gasket Co., 3630 Wooddale Ave., Minneapolis 16, Minn.—U
Molded Insulation Co., 335 E. Price St., Philadelphia 44, Pa.—B.A.C
Molding Corp. of America, 40 Church St., Pawtucket, R.I.—H.K
Moore Co., H. J., 266 William St., New York 38, N.Y.—K
Morton Electronics Corp., Chester, 10 St. & Morton Ave., Chester, Pa.—C
Multi-Metal Co., 1360 Garrison Ave., New York 59, N.Y.—T.W
Muter Co., 1255 S. Michigan Ave., Chicago 5, Ill.—P
MYCALEX CORP. OF AMERICA, 125 Clifton Blvd., Clifton, N.J.—Y.Z
NAER Corp., 11777 Santa Monica Blvd., West Los Angeles 25, Calif.—A.C.D.H.N
NATIONAL CO., 61 Sherman St., Malden, Mass.—A.G.K.Z
National Electrical Machine Shops, 919 Jesup Blair Dr., Silver Spring, Md.—A.R.D.Z
National Electronic Mfg. Corp., 42-08 Vernon Blvd., Long Island City 1, N.Y.—J
National Instrument Co., 23 E. 26 St., New York 10, N.Y.—B
National Tel-Tronics Corp., 35 St. Casimir Ave., Yonkers, N.Y.—D.N
Newoil Products Div., Rubber Associates, 850 Metropolitan Ave., Brooklyn 11, N.Y.—N
Neptune Electronics Co., 433 Broadway, New York 13, N.Y.—D.K.Z.A.C.A.D.A.E
Newark Wire Cloth Co., 351 Verona Ave., Newark 4, N.J.—P
New Products Co., 1069 E. 54 St., Indianapolis, Ind.—H.K.N.A.A.E
Nuclear Instrument & Chemical Corp., 223 W. Erie St., Chicago 10, Ill.—S
Optical Film Engineering Co., 2731 N. 6 St., Philadelphia 33, Pa.—P
Pacific Mercury Research Center, 1500 Mission Canyon Rd., Santa Barbara, Calif.—C
Parts Producing Corp., 1861 2 Ave., New York, 28, N.Y.—K
Penn Fibre & Specialty Co., 2030 E. Westmoreland St., Philadelphia 34, Pa.—N
Perfection Electric Co., 2635 S. Wabash Ave., Chicago 16, Ill.—Y
Peschel Electronics, 13 Garden St., New Rochelle, N.Y.—C
Petroff, Peter A., 127 Water St., New York 5, N.Y.—R.D.F
Philmore Mfg. Co., 113 University Pl., New York 3, N.Y.—A.D.F
Pix Mfg. Co., 5 Oliver St., Newark 2, N.J.—I.K
Plymouth Electronics Corp., 60 Kingsbury St., Worcester, Mass.—A
PM Industries, 280 Fairfield Ave., Stamford, Conn.—H
Polyphasc Instrument Co., 701 Haverford Rd., Bryn Mawr, Pa.—H
Precision Plastic Products, 225 N. Racine Ave., Chicago 7, Ill.—K.V.W.Z
PRODELIN INC., 307 Bergen Ave., Kearny, N.J.—B
Rajah Co., 53 Locust Ave., Bloomfield, N.J.—K
RAYTHEON MFG. CO., 100 River St. Waltham 54, Mass.—L
Raytor Corp., 5 St. & Cannon Ave., Lansdale, Pa.—K
R-C Scientific Instrument Co., 307 Culver Blvd., Playa Del Rey, Calif.—K.S
Remler Co., Ltd., 2101 Bryant St., San Francisco 10, Calif.—Z
R.F.I. Shielded Enclosures, 3634 N. Lawrence St., Philadelphia 40, Pa.—R
Rhode Island Electronics, Inc., Mill St., Lonsdale, R.I.—C.F.W
Rodale Mfg. Co., 6 & Minor Sts., Emmaus, Pa.—M
Rofan Co., Topsfield, Mass.—A.B.C
Rollon Rubber Products, 1805 Jerome Ave., Bronx 63, N.Y.—U
Screw Corp. of America, 103 Park Ave., New York 17, N.Y.—A.D.F.J.K
Scaletro Corp., 186 Union Ave., New Rochelle, N.Y.—D.K
Sealtron Co., 9701 Reading Rd., Cincinnati 16, Ohio—F.G.K
Selectar Industries, Inc., 3100 Ocean Parkway, Brooklyn 35, N.Y.—R.C.D
Shakeproof Div., Ill. Tool Works, Elgin, Ill.—K
Sherman Mfg. Co., H.B., 22 Barney St., Battle Creek, Mich.—F.I.J.K
Shielding, Inc., Box 217, Riverside, N.J.—P.T.V
Signalite Inc., 37-41 Neptune Hwy., Neptune, N.J.—A.F
Sittler Corp., 18 N. Ada, Chicago 7, Ill.—C.E
Special Products Co., 9115 Brookville Rd., Silver Spring, Md.—C
Sperry Products Inc., Shelter Rock Rd., Danbury, Conn.—C
Sperti Faraday Inc., 1077 Celestial St., Cincinnati 2, Ohio—K
Star Fuse Co., 235 Canal St., New York 13, N.Y.—L.M.N
Staver Co., 41-51 N. Saxon Ave., Bay Shore, N.Y.—W
Stokes Molded Products, Taylor & Webster Sts., Trenton 4, N.J.—U
Stone City Machine & Tool Co., 1206 7 St., Bedford, Ind.—F.I.K.L.N.X.A.A
STUPAKOFF CERAMIC & MFG CO., La-trobe, Pa.—G
Suckle Electronics Co., 22 & Haynes Ave., Camden 5, N.J.—T.W
Suprex Electronics Corp., 23 Atherton St., Yonkers, N.Y.—C
Superior Electric Co., 83 Laurel St., Bristol, Conn.—A
Switchcraft Inc., 1328 N. Halstead St., Chicago, Ill.—D.A.C.A.D
Taylorcel Corp., 3-33 Rutter St., Rochester 6, N.Y.—G.I.J.K
Taylor Fibre Co., Norristown, Pa.—K
Tempo T-V Products Co., 2450 Romona Blvd., Los Angeles 33, Calif.—K
Thomas & Betts Co., 36 Butler St., Elizabeth 1, N.J.—J.K
Thompson Clock Co., H. C., 38 Federal St., Bristol, Conn.—A.D.E.F.K.L.M.N
Titeflex, Inc., 500 Frelinghuysen Ave., Newark 5, N.J.—R
T.L.G. Electric Corp., 31 W. 27 St., New York 1, N.Y.—A.C
Translite Electronics Corp., 5720 W. Armitage Ave., Chicago 39, Ill.—C
Triad Transformer Corp., 4055 Redwood Ave., Venice, Calif.—T
Trico Fuse Mfg. Co., 2948 N. 5 St., Milwaukee 12, Wisc. A.F.A.H
Tri-Dex Co., P.O. Box 1207, Lindsay, Calif.—C.K
Tru-Connector Corp., 416 Union St., Lynn, Mass.—B
T.V. Development Corp., 2024 McDonald Ave., Brooklyn 23, N.Y.—B
United Technical Labs., Morristown, N.J.—AD
U.S. ENGINEERING CO., 521 Commercial St., Glendale 3, Calif.—A.F.I.K
Vaco Products Co., 317 E. Ontario St., Chicago 11, Ill.—F.J.K
Vector Electronics Co., 3362 San Fernando Rd., Los Angeles 65, Calif.—K.Z.A.E
Vidaire Electronics Mfg. Co., 576 W. Merrick Rd., Lynbrook, L.I., N.Y.—C.A.C.A.D.A.E
Vitroreal Corp., 6325 Guilford Ave., Indianapolis 20, Ind.—K
Volkert Metal Stampings, Inc., John, 223-34 96th Ave., Queens Village 29, N.Y.—W
Waldom Electronics, 4625 W. 53 St., Chicago 10, Ill.—A.F.I.K.Z
Walco Electronics Corp., 3225 Exposition Pl., Los Angeles 18, Calif.—I.J.K.L
WARREN PLASTICS CORP., Warren, Pa.—K
Western Electronic Enterprises, 3348 W. Compton Blvd., Gardena, Calif.—B
Whitaker Cable Corp., 1301 Burlington Ave., N. Kansas City, Mo.—C.E
White Industries Inc., 421 W. 54 St., New York 19, N.Y.—C
Willard Storage Battery Co., 1200 Huron Rd., Cleveland, Ohio—E.K
Wilmar Mfg. Co., 2715 E. 14 St., Kansas City 27, Mo.—A
York Co., Otto H., 69 Glenwood Pl., E. Orange, N.J.—V
Zierick Mfg. Corp., Beechwood & Rockdale Aves., New Rochelle, N.Y.—F.I.K.L

76—CHEMICALS, COATINGS & LUBRICANTS

Adhesives	A
Cement	B
Coil dope	C
Enamels	D
Etching chemicals	AC
Fluid flux	E
Fluorescent chemicals	AD
Graphite	F
Impregnating compounds	G
Lacquer	AE
Liquid flux	AF
Marking inks	J
Miscellaneous chemicals	K
Paint	L
Paint, conductive	M
Paste flux	N
Phosphorescent chemicals	O
Photosensitive chemicals	AG
Plch	P
Printed circuit coatings	AH
Protective coatings	Q
Radioactive chemicals	AI
Resins	R
Rubber, conductive	S
Sealers, protective	T
Silicones	AB
Solvents	U
Special lubricants	V
Vacuum greases	W
Varnish	X
Waterproofing compounds	Y
Wax	Z
Wrinkle finish	AA

Ace Electric Mfg. Co., 1458 Shakespeare Ave., New York 52, N.Y.—B,U
 Acheson Colloids Co., Div. Acheson Ind. Inc., 1950 Washington Ave., Port Huron, Mich.—F,M,V,AAH
 Aircor Products, 9 Sagamore Hill Dr., Port Washington, L.I., N.Y.—T
 Aeromark Co., 9 Morrell St., Elizabeth 4, N.J.—J
 Airflyte Electronics Co., 21 Cottage St., Bayonne, N.J.—G
 Akron Rubber Co., 53 Warren St., New York 7, N.Y.—Q,S,T,AB
 Allied Asphalt & Mineral Corp., 217 Broadway, New York, N.Y.
 American Chemical Paint Co., Ambler, Pa.—Q,AC
 AMERICAN PHENOLIC CORP., 1830 S. 54th Ave., Chicago 50, Ill.—A,B,C,AB
 American Products Mfg. Co., 8127 Orleander St., New Orleans 18, La.—A,G,X
 American Resinose Chemicals Corp., 101 Foster St., Peabody, Mass.—A,R,M,R,Y
 Amerinn Silver Co., 36-07 Prince St., Flushing 54, N.Y.—E,N,AF
 American Solder & Flux Co., 2152 E. Norris St., Philadelphia 24, Pa.—E,N
 Anderson Assoc., H. V., 239 Park Ave., Berkeley Heights, N.J.—M
 Armstrong Cork Co., Lancaster, Pa.—A,T,AB
 Bakelite Co., Div. Union Carbide & Carbon Corp., 30 E. 42 St., New York 17, N.Y.—A,G,Q,R,T,X,Y,AB
 Barco Chemical Products Co., 701 S. LaSalle St., Chicago 5, Ill.—K,U
 Barrett Div., Allied Chemical & Dye Corp., 2112 Sylvan Ave., Toledo 6, Ohio—A,R
 Biggs Co., Carl H., 2255 Barry Ave., Los Angeles 64, Calif.—A,B,C,G,Q,T,Y,AAH
 Bishop Mfg. Corp., 10 Canfield Rd., Cedar Grove, N.J.—Q
 Biwax Corp., 3445 Howard St., Skokie, Ill.—G,P,Y,Z
 Borthing Co., George C., P.O. Box 115, E. Rutherford, N.J.—A,D,G,Q,T,X,Y,Z
 Bruski, Jr., Ernest F., 162 W. 54 St., New York 19, N.Y.—G,R
 Cam Chemical Co., 820 65 Ave., Philadelphia 26, Pa.—K,O,S,T,AC,AD,AG
 Brooklyn Paint & Varnish Co., 50 Jay St., Brooklyn 1, N.Y.—D,L,Q,T,X
 URKE & JAMES, 321 S. Wabash Ave., Chicago 4, Ill.—Q
 Canadian Radium & Uranium Corp., 630 5 Ave., New York 20, N.Y.—A,AA,AD,AG,AA,AI
 Catalin Corp. of America, 1 Park Ave., New York 16, N.Y.—A,G,R
 Central Coil Co., 1720 N. Luett St., Indianapolis 22, Ind.—A,B,C
 Central Scientific Co., 1700 Irving Park Rd., Chicago 13, Ill.—K,W
 Chemical Electronics Corp., Irvington N.Y.—U
 Cha Co., 627 Greenwich St., New York 14, N.Y.—A,G,Q,R,T
 Communication Products Co., Marlboro, N.J.—H
 CONSOLIDATED VACUUM CORP., 735 Ridge Rd., W. Rochester 3, N.Y.—W
 Instad Laboratories 214 W. 29 St., New York 1, N.Y.—I,AF
 Con & Co., 115 E. 23rd St., New York, New York—A,B

Crowley & Co., Henry L., 1 Central Ave., W. Orange, N.J.—B
 Delaware Optical Labs., 36 Williams St., Lansdowne, Pa.—A,B,O
 DeMent Labs., New Flidner Bldg., Portland 8, Ore.—Q,AD
 Division Lead Co., 836 W. Kinzie St., Chicago 22, Ill.—E,K,N,U
 DoAll Co., 254 N. Laurel Ave., Des Plaines, Ill.—J,U,V
 Dolph Co., John C., Monmouth Junction, N.J.—A,B,C,D,G,I,Q,R,T,X,Y,Z,AE,AAH
 Dow Chemical Co., Midland, Mich.—Q,R,U
 Dow Corning Corp., P.O. Box 592, Midland, Mich.—G,R,V,AB
 DuPont de Nemours & Co., E.I., N.W. cor. 10th & Market Sts., Wilmington 98, Del.—O,AD,AG
 Durez Plastics & Chemicals, 1926 Walck Rd., N. Tonawanda, N.Y.—G,Q,R
 Electrofilm Inc., 7116 Laurel Canyon Blvd., N. Hollywood, Calif.—A,F,G,J,M,O,U,V,AB,AC
 Electro-Technical Products, Div. Sun Chemical Corp., 113 E. Centre St., Nutley, N.J.—AB
 EMERSON & CUMING, 869 Washington St., Canton, Mass.—A,G,Q,R
 Eutectic Welding Alloys Corp., 40-40 172 St., Flushing 58, N.Y.—A,N,U,AF
 Farrelloy Co., 1243 N. 26 St., Philadelphia 21, Pa.—E,N,AF
 Fidelity Chemical Products Corp., 470 Frelinghuysen Ave., Newark 5, N.J.—AC
 Flexrock Co., 3609 Filbert St., Philadelphia 1, Pa.—A,B,G,I,Q,T,Y,Z
 Forman Co., B. G., 238 William St., New York 38 N.Y.—G,Q,R,T
 Freeport Sulphur Co., Port Sulphur, La.—K
 Gates & Co., Geo. W., Hempstead Tpke., & Lucille Ave., Franklin Square, N.Y.—AC
 General Cement Mfg. Co., 919 Taylor Ave., Rockford 11, Ill.—A,B,C,D,E,F,G,K,L,M,N,O,Q,U,V,X,Y,AA,AB,AD,AE,AF,AAH
 GENERAL ELECTRIC CO., Chemical Div., 1 Plastics Ave., Pittsfield, Mass.—A,G,R,X,AB
 General Tire & Rubber Co., Industrial Products Div., Wabash, Ind.—S
 Glyco Products Co., 28 Court St., Brooklyn 2, N.Y.—G,Q,T,Y,Z
 Goldsmith Bros., Smelting & Refining Co., 111 N. Wabash Ave., Chicago 2, Ill.—K,N,AG,AAH
 Goodrich Chemical Co., B. F., 324 Rose Bldg., Cleveland 15, Ohio—K,R
 Hardman Co., H. V., 571 Cortlandt St., Belleville 9, N.J.—A,B,M,S,Y
 Haynes Laboratories, Inc., C. W., 61 Chandler St., Springfield 4, Mass.—A,B,C,D,M,Q,U,X,AA,AE,AAH
 Helder Mfg. Corp., 225 Belleville Ave., Bloomfield, N.J.—Q,AA
 Hi-Q Div., Aerovox Corp., Olean, N.Y.—G
 Hiteset Chemical Corp., 722 64 St., Brooklyn, N.Y.—T
 Houghton Labs., Inc., 322 Bush St., Olean, N.Y.—A,B,C,D,F,G,K,P,S,T,Y,AAH
 Industrial Devices, Edgewater, N.J.—T
 Insl-X Co., Water St. & Broadway, Ossining, N.Y.—A,B,C,D,G,L,Q,T,U,X,Z,AE,AAH
 INSULATED CIRCUITS, INC. 115 Roosevelt Ave., Belleville, N.J.—AH
 Insulation Mfrs. Corp., 565 W. Washington Blvd., Chicago 6, Ill.—A,B,G,Q,T,X,Y,AB
 Interelectronics Corp., 2432 Grand Concourse, New York 58, N.Y.—M
 Irvington Varnish & Insulator Co., 6 Argyle Terrace, Irvington 11, N.J.—D,G,I,Q,X
 Javex, Box 646, Redlands, Calif.—R,G,M,R,T,AAH
 Jefrona Lab., 1629 N. Salina St., Syracuse, N.Y.—U
 J F D Mfg. Co., 6101-16th Ave., Brooklyn 4, N.Y.—V
 Johns-Manville, 22 E. 40 St., New York 16, N.Y.—A,G,Q,T,Y
 Johnson Mfg. Co., 600 1st Ave., N., Mount Vernon, Io.—E,N,AF
 Kellogg Co., H. W., P.O. Box 469, Jersey City 3, N.J.—Q
 KESTER SOLDER CO., 4201 Wrightwood Ave., Chicago 39, Ill.—E
 Krenzler Mfg. Co., 227 Fulton St., New York 7, N.Y.—J,U,AC
 Krylon Inc., 2038 Washington Ave., Philadelphia 46, Pa.—Q,AE
 Lacquer & Chemical Corp., 214 40th St., Brooklyn 32, N.Y.—A,B,C,D,L,M,O,R,T,U,X,Y,AA,AD,AE,AAH
 Lake Chemical Co., 3052 W. Carroll Ave., Chicago 12, Ill.—E,N,Q
 Lawter Chemicals, Inc., 3550 Touhy Ave., Chicago 45, Ill.—J,L,O
 Linde Air Products Co., Div. Union Carbide & Carbon, 30 E. 42 St., New York 17, N.Y.—G,O,R,V,AB,AAH
 Linick Chemical Co., 59 E. Madison St., Chicago 3, Ill.—A,B,E,K,N,AF
 London Chemical Co., 325 W. 32 St., Chicago 16, Ill.—P,X,AC,AF,AAH
 Lukens Steel Co., Coatesville, Pa.—Q,R,AB
 Luminous Resins, 166 W. Washington St., Chicago 2, Ill.—O,AD
 Mackay Inc., A.D., 198 Broadway, New York 38, N.Y.—F,J,K,O,W,AB,AD,AG
 Magnaflex Corp., 7300 W. Lawrence Ave., Chicago 31, Ill.—J
 Mallinckrodt Chemical Works, 2nd & Mallinckrodt Sts., St. Louis 7, Mo.—K,O,Y,AD,AG
 Mandel Chemical Products, 207 Astor St., Newark 5, N.J.—Q
 MELPAR INC., 452 Swann Ave., Alexandria, Va.—G,R

Merix Chemical Co., 1021 E. 55 St., Chicago 15, Ill.—K,M,Q,Z,AB
 Metz Refining Co., 369 Mulberry St., Newark 2, N.J.—M
 Micro-Circuits Co., New Buffalo, Mich.—A,B,F,M,Q,S,AAH
 Midland Paint & Varnish Co., 3801 E. 91 St., Cleveland 5, Ohio—D,L,M,Q,T,X
 Minnesota Rubber & Gasket Co., 3630 Wooddale Ave., Minneapolis 16, Minn.—Q,S,AB
 Mitchell Rand Companies, 51 Murray St., New York 7, N.Y.—D,G,I,F,R,X,Y,Z,AAH
 Molding Specialists, Inc., 289 Nepperhan Ave., Yonkers, N.Y.—G,V
 Moven Co., C. P., 908 Chicago Ave., Chicago 22, Ill.—A,B,C
 Multicore Sales Corp., 164 Duane St., New York 13, N.Y.—AF
 National Coil Co., P. O. Box 1237, Sheridan, Wyo.—Q
 National Lead Co., 111 Broadway, New York 6, N.Y.—E,L,N,X
 National Radiac Inc., 10 Crawford St., Newark 2, N.J.—AD
 National Research Corp., Equipment Div., 70 Memorial Dr., Cambridge 42, Mass.—Q,W
 N. Y. Testing Labs., 47 West St., New York 6, N.Y.—M,Q
 Norel Mfg. Co., 392 Bleecker St., New York 14, N.Y.—O,AD
 Nuclear Instrument & Chemical Corp., 223 W. Erie St., Chicago 10, Ill.—K,AI
 Nye, Inc., Wm. F., P. O. Box 927, New Bedford, Mass.—V
 Onkite Products, 19 Reector St., New York 6, N.Y.—U
 Paisley Products Inc., 630 W. 51 St., New York 19, N.Y.—A,R,Q,T,AE
 Paragon-Revolute Corp., 77 South Ave., Rochester 4, N.Y.—J
 Permacel Tape Corp., U. S. Highway 1 New Brunswick, N.J.—A
 Philadelphia Quartz Co., 1146 Public Ledger Bldg., Phila. 6, Pa.—A
 Phillips Mfg. Co., 2816 Aldrich Ave. S., Minneapolis 8, Minn.—E
 PHOTOCIRCUITS CORP., New St., Glen Cove, N.Y.—AH
 Polyken Products, Dept. Kendall Co., 222 W. Adams St., Chicago 6, Ill.—Q
 Precise Measurements Co., 942 Kings Highway, Brooklyn 23, N.Y.—O
 Ramsell Mfg. Co., 420 Market St., San Francisco, Calif.—Q,T
 Randolph Products Co., P.O. Box 67, Carlstadt, N.J.—A,B,D,Q,T,U,X,Y,AA,AE
 Reilly Tar & Chemical Corp., 1615 Merchant Bank Bldg., Indianapolis, Ind.—D,P,Q,Y
 Rollon Rubber Products, Inc., 1805 Jerome Ave., Bronx 58, N.Y.—S,AB
 Ruby Chemical Co., 68 McDowell St., Columbus 8, Ohio—E,N,AF
 Saf-T-Flux Co., Box 64, Collegeville, Pa.—E,N
 SAMPSON CHEMICAL & PIGMENT CORP., 2830 W. Lake St., Chicago 12, Ill.—L,M,O,Q,AD,AE,AAH
 Sauereisen Cements Co., 1045 N. Canal St., Pittsburgh 15, Pa.—A,B,C,G,Q,T,X
 Silicone Spray Products, 3514 Lee Rd., Cleveland 22, Ohio—Q
 Smith Mfg. Co., Nathan R., 105 Pasadena Ave., S. Pasadena, Calif.—G
 Standard Metals Corp., 262 Broad St., N. Attleboro, Mass.—E
 Stokes Molded Products, Taylor & Webster Sts., Trenton 4, N.J.—S
 Stone City Machine & Tool Co., 1206 7 St., Bedford, Ind.—G
 Strobilite Co., 35 W. 52 St., New York 19, N.Y.—O,AD
 SUPERIOR FLUX & MFG CO., 1302 Ontario St., Cleveland 13, Ohio—E,K,N
 Sunerex Electronics Corp., 23 Atherton St., Yonker, N.Y.—Q,T,V
 Switzer Bros., 4732 St. Clair Ave., Cleveland 3, Ohio—D,O
 SYLVANIA ELECTRIC PRODUCTS INC., 1740 Broadway, New York 19, N.Y.—O,AD
 Technic, Inc., 39 Snow St., Providence 3, R.I.—E,T,AF,AAH
 Technicraft Co., 1156 Commonwealth Ave., Boston 34, Mass.—A,B,D,E,G,K,R
 Tempil Corp., 11 W. 25 St., New York 11, N.Y.—Q
 Thompson Clock Co., H.C., 38 Federal St., Bristol Conn.—E,N,Y,AA
 Tricon Mfg. Co., 8008 Wallace St., Chicago 20, Ill.—N
 Ultra-Violet Products, 145 Pasadena Ave., S. Pasadena, Calif.—O
 Union Bay State Chemical Co., 491 Main St., Cambridge 42, Mass.—A,B,Q
 United Technical Labs., Morristown, N.J.—Q
 U.S. Plywood Corp., 55 W. 44 St., New York 36, N.Y.—A
 U.S. Radium Corp., 535 Pearl St., New York 7, N.Y.—O,AD
 Vacuum Metals Corp., 70 Memorial Dr., Cambridge 42, Mass.—T
 VARFLEY CORP., 305 N. Jay St., Romc, N.Y.—AB
 Vorac Co., Route 17 at Meadow Rd., Rutherford, N.J.—D,L,M,Q,AE
 Walsco Electronics Corp., 3225 Exposition Pl., Los Angeles 18, Calif.—B,C,G,K,U,V,X,AA,AB,AE,AF
 William & Co., Willimantic, Conn.
 Workman TV Inc., 309 Queen Anne Rd., Teaneck, N.J.—V
 Zophar Mills Inc., 112 26 St., Brooklyn 32, N.Y.—A,B,G,P,Q,T,Y,Z

17—CHOKES

- Chokes, audio A
- Chokes, filter D
- Chokes, heavy-wire E
- Choker, power F
- Chokes, R-F receiving B
- Chokes, R-F transmitting C

ACE COIL & ELECTRONICS CO., 924 Middlesex Ave., Metuchen, N.J.—B,C
 Acme Coil & Transformer Corp., 1915 N. Clybourne Ave., Chicago 14, Ill.—A,D
 Acme Electric Corp., Cuba, N.Y.—A,D,E,F
 Acme Electronics Inc., (Sub. Aerovox Corp.) 2724 Peck Rd., Monrovia, Calif.—A,B,C,D
 Acro Products Co., 369 Shurs Lane, Philadelphia 28, Pa.—A,D
 Aerocoil Inc., 24 Cliff St., Jersey City, N.J.—B,C
 AEROVOX CORP., 740 Belleville Ave., New Bedford, Mass.—A,B,C,D
 AIRCRAFT TRANSFORMER CORP., West & Willow Aves., Long Branch, N.J.—B,C
 AIRDESIGN, INC., 241 Fairfield Ave., Upper Darby, Pa.—A,B,C,D,F
 Airpax Products Co., P. O. Box 137, Middle River—Baltimore 2, Md.—A,D,E,F
 A.J.F. Industries, 862 Monroe St., Brooklyn 21, N.Y.—A
 Aladdin Radio Industries, 703 Murfreesboro Rd., Nashville, Tenn.—D
 Amplifier Corp. of America, 398 Broadway New York 13, N.Y.—D
 Anchor Electronics Inc., 717 Sip St., Union City, N.J.—B,C,E
 Apex Coil & Transformer Corp., 1919 S. Fairfield Ave., Chicago 8, Ill.—A,D
 A.P.W. Co., 72 W. Main St., Rockaway, N.J.—D
 Arco Transformer & Electric Corp., 1602 S. Hanna St., Ft. Wayne 5, Ind.—A,D,E,F
 Artled Co., Inc., 367 Worthington St., Springfield 3, Mass.—A,B,C,D
 Atlantic Transformer Corp., 30 Hynes Ave., Groton, Conn.—A,D,F
 Atlas Coil Winders, Inc., 39 Manhattan St., Stamford Conn.—B,C
 Atlas Engineering Co., 3 Edgewood St., Roxbury, Mass.—A,D,E,F
 Audio Development Co., 2833 13th Ave., S Minneapolis 7, Minn.—A,D,F
 Automatic Mfg. Corp., 65 Gouverneur St., Newark 4, N.J.—B
 Barker & Williamson, 237 Fairfield Ave., Upper Darby, Pa.—B,C
 Basler Electric Co., 601 5th St., Highland, Ill.—A,D,E,F
 Beam Instruments Corp., 350 5th Ave., New York 1, N.Y.—A,F
 Bittermann Electric Co., Barlow & Grove Sts., Canaan, Conn.—D,E,F
 Broadway Coil Co., 5638 Broadway, Chicago 40, Ill.—A,B,C,D,E,F
 BUD RADIO INC., 2118 E. 85 St., Cleveland 3, Ohio—A,C
 BURNELL & CO., Yonkers 2, N.Y.—A,D
 Caddell-Burns Mfg. Co., 40 E. 2nd St., Minnola, N.Y.—B
 Calbest Eng'g & Electronics Co., 828 N. Highland Ave., Hollywood 38, Calif.—B,C
 Caledonia Electronics & Transformer Corp., P. O. Box 298, Caledonia, N.Y.—A,D
 Cambridge Thermionic Corp., 446 Concord Ave., Cambridge 38, Mass.—B,C
 Canal Corp., 2850 Bay Rd., Redwood City, Calif.—B,C,D
 Carol Electronics Corp., 141 E. 25 St., New York 10, N.Y.—A,D,F
 Celco (Constantine Eng'g Labs. Co.) P.O. Box 171, Mahwah, N.J.—A,R,D,E,F
 Chicago Standard Transformer Corp., Addison & Elston, Chicago 18, Ill.—A,D,F
 CLIPPAIRD INSTRUMENT LAB., 7390 Cole-rain Rd., Cincinnati 24, Ohio—B
 Clum Mfg. Co., 611 W. National Ave., Milwaukee 41, Wis.—B,C
 Coast Coil Co., 5352 W. Washington Blvd., Los Angeles 16, Calif.—A
 Coilcraft Inc., Jandus Rd., Cary, Ill.—B
 Coil Eng'g. & Mfg. Co., 200 Main St., Roanoke, Ind.—A,D,F
 Coil Winders, Inc., New York Ave., Westbury, L.I., N.Y.—B,C,D,E
 COMMUNICATION ACCESSORIES CO., Hickman Mills Mo., A
 Communication Parts, 7466 W. Irving Park Rd., Chicago 34, Ill.—B,C
 Condar Radio Mfg. Co., 116 N. Montezuma St., Prescott, Ariz.—B
 Consolidated Radio Products Co., 350 W. Erie St., Chicago 10, Ill.—A,D
 Continental Electronics Ltd., 302 Oakland St., Brooklyn 22, N.Y.—A
 Continental Electronics Mfg. Co., 4212 S. Buckner Blvd., Dallas 10, Tex.—C
 CORNING GLASS WORKS, Corning, N.Y.—B
 Crest Transformer Corp., 1834 W. North Ave., Chicago 22, Ill.—A
 Custom Electronics Corp., 738 Speedwell Ave., Morris Plains, N.J.—B,C
 Cycle Electronics Labs., 356 Glenwood Ave., E. Orange, N.J.—A,B,C,D,E,F
 DeCoursey Eng'g. Lab., P. O. Box 235, Los Angeles 25, Calif.—A
 Delta Electronics Inc., Div. of Electronic Indicator Corp., 259 Green St., Brooklyn, N.Y.—A

Delta Radio Co., 115 Worth St., New York 13, N.Y.—A,B,C
 Deutschmann Corp., Tobe, Providence Highway, Norwood, Mass.—D
 DeWitt Development Co., 3008 W. 127th St., Blue Island, Ill.—B
 Diatron Co., 3327 Dixie Dr., Houston 21, Texas—A,B,C
 Dietz Design & Mfg. Co., Grandview, Mo.—A,B,D
 Dinion Coil Co., Caledonia, N.Y.—A,D,E
 Dormeyer Industries, 3418 Milwaukee Ave., Chicago 41, Ill.—A,D,E,F
 Dormitzer Electric & Mfg., Co., 5 Hadley St., Cambridge 40, Mass.—A
 Dunkle Coil Co., 3257 W. 6 St., Los Angeles, Calif.—A,B,C
 Electron Mfg. Co., 1901 Clybourne Ave., Chicago 14, Ill.—A,D,F
 Electrical Windings, Inc., 2051 N. Kolmar Ave., Chicago 39, Ill.—A
 Electro Assemblies, Inc., 2935 W. Belmont Ave., Chicago 18, Ill.—M
 Electro Eng'g. Works, 6021 College Ave., Oakland 18, Calif.—A,D,E,F
 Electrometric Inc., Box 107, Woodstock, Ill.—B,C
 Electronic Coils, Inc., 88 Lyman St., Springfield, Mass.—B,C,D,E,F
 Electronic Research Co., 11550-39 N.E., Seattle 55, Wash.—N
 Electronic Transformer Co., 207 W. 25 St., New York 1, N.Y.—A,D,E,F
 Electro-Technics, Inc., 198 Albion Ave., Paterson, N.J.—A,B
 El-Rad Mfg. Co., 2800 W. Cullom, Chicago 18, Ill.—B,C
 Empire Coil Co., Beechwood Ave. & 2nd St., New Rochelle, N.Y.—A,R,D,F
 Epo Products, Inc., 2500 Atlantic Ave., Brooklyn 7, N.Y.—A,D,E,F
 Epso, Inc., 126 Mass. Ave., Roston 15, Mass.—A,B,C
 Essex Electronics, 550 Springfield Ave., Berkeley Heights, N.J.—B
 Fast & Co., John, 3129 N. Crawford Ave., Chicago 41, Ill.—E
 Ferranti Electric, Inc., 30 Rockefeller Plaza, New York 20, N.Y.—A,D,E,F
 Forbes & Wagner, Inc., 389 Central Ave., Silver Creek, N.Y.—A,B,D
 France Mfg. Co., 10325 Berea Rd., Cleveland 2, Ohio—D,E,F
 FRED TRANSFORMER CO., 1718 Weirfield St., Brooklyn 27, N.Y.—A,D,E,F
 Gaertner Radio Co., 3612 Maple Ave., Los Angeles 11, Calif.—B,C
 GALBRAITH & SON ELECTRIC CORP., C. C. 450 6th Ave., New York 11, N.Y.—A,D,E,F
 Gates Electric Co., 65 W. Broadway, New York, N.Y.—D,E,F
 GENERAL ELECTRIC CO., Apparatus Div., 1 River Rd., Schenectady 5, N.Y.—A,D
 General Electric Co., Broadcast Equip. & Commercial Equip. Div., Electronics Park, Syracuse, N.Y.—A,D,F
 Geotronic Labs., Inc., 1314 Cedar Hill Ave., Dallas 11, Texas—D
 Goslin Electric & Mfg. Co., 2921 W. Olive Ave., Burbank, Calif.—A,B,C,D,E,F
 Gramer Transformer Corp., 2734 Pulaski Rd., Chicago 39, Ill.—A,B,C,D,E,F
 Hadley Co., Robert M., 5112 S. Hoover St., Los Angeles 37, Calif.—A
 Halldorson Transformer Co., 4500 N. Ravenwood Ave., Chicago 40, Ill.—D
 Hamilton-Hall Mfg. Co., 227 N. Water St., Milwaukee 2, Wis.—B
 Hamlyn Electronics Corp., 32 Holman Blvd., Hicksville, N.Y.—A,B,C,D
 Highland Eng'g. Co., Main & Urban Sts., Westbury, L.I., N.Y.—A
 Hillburn Electronic Products Co., 55 Nassau Ave., Brooklyn 22, N.Y.—M,N
 HiQ Div., Aerovox Corp., Olean, N.Y.—A,B,C
 Hopkins Eng'g Co., 2082 Lincoln Ave., Altadena, Calif.—A,D,E
 Houlihan Co., T. J., 2508 W. Lawrence Ave., Chicago 25, Ill.—B,C,E
 Hufford Machine Works, Electronics Division, 2201 Carmelina Ave., Los Angeles 64, Calif.—D,F
 Industrial Transformer, Gouldsboro, Pa.—A,D
 Insuline Corp. of America, 186 Granite St., Manchester, N.H.—B,C
 INT'L RESISTANCE CO., 401 N. Broad St., Philadelphia 8, Pa.—B
 York 54, N.Y.—C,E
 Islin Transformer & Metal Co., Bech St., Islip, N.Y.—A,B,C,D,E,F
 I-T-E Circuit Breaker Co., Resistor Div., 1924 Hamilton St., Philadelphia 30, Pa.—B
 Jeffers Electronics Div., Speer Carbon Co., Du Bois, Pa.—B
 Jeffries Transformer Co., 1710 E. 57th St., Los Angeles 58, Calif.—D,E
 JFD Mfg. Co., 6101 16th Ave., Brooklyn 4, N.Y.—B
 Jobbins Electronic Enterprises, 500 Hamilton Ave., Menlo Park, Calif.—A,D,E,F
 Johnson Co., E. F., Waseca, Minn.—B,C
 Johnson Electronics Inc., 521 Elwall St., Orlando, Fla.—A,B,C
 Johnson Labs., Willard Rd., Norwalk, Conn.—B,C
 KENYON TRANSFORMER CO., 840 Barry St., Bronx 59, N.Y.—A,D,E,F
 Kings Electronics Co., 40 Marbledale Rd., Tuckahoe, N.Y.—B,C,D
 K-V Transformer Corp., 20 E. Franklin St., Danbury, Conn.—A

LANGEVIN MFG. CORP., 37 W. 65 St., New York 23, New York—A,D,E,F
 Lectrohm, Inc., 5660 Northwest Highway, Chicago 30, Ill.—B,C,D,E
 Leeds Eng'g. Co., 34-40 79 St., Jackson Heights 72, N.Y.—A
 Lenkurt Electric Co., 1105 County Rd., San Carlos, Calif.—A,D
 Leonard Electric Products Co., Inc., 67 34 St., Brooklyn 32, N.Y.—A,B,C,D,E,F
 LePace Mfg. Co., 75-19 84 St., Glendale 27, N.Y.—A
 Magnavox Co., Ft. Wayne 4, Ind.—A,D,F
 Magnetic Amplifiers, Inc., 632 Tinton Ave., New York 55, N.Y.—F
 Magnetic Instrument Co., 82 Main St., W. Orange, N.J.—A,D,E,F
 Magnex Corp., 90-28 Van Wyck Expressway, Jamaica 18, N.Y.—A,B,C
 Marine View Electronics, 744 E. 138 St., New York 54, N.Y.—C,E
 Marchant Research, Inc., 1475 Powell St., Oakland 8, Calif.—D
 Mattson-Cowley Corp., 1487 Lincoln Ave., Pasadena 3, Calif.—A,B,C
 Mercury Electro-Products, Inc., 622 W. Kinzie St., Chicago 10, Ill.—A,B,C
 Merit Coil & Transformer Corp., 4427 N. Clark St., Chicago 40, Ill.—A,B,D,F
 Microtran Co., Div. Crest Labs., 84-11 Rockaway Beach Blvd., Rockaway Beach 93, N.Y.—A,D,E,F
 Mid-West Coil & Transformer Co., 1642 N. Halsted St., Chicago 14, Ill.—A,D,E,F
 Millen Mfg. Co., James, 150 Exchange St., Malden, Mass.—B,C
 Miller Co., J. W. 5917 S. Main St., Los Angeles 3, Calif.—B,C,D
 Milwaukee Transformer Co., 5231 N. Hopkins St., Milwaukee 9, Wis.—A,B,C,D,E,F
 Munston Mfg. & Service Inc., Beech St., Islip, N.Y.—D
 Muter Co., 1255 S. Michigan Ave., Chicago 6, Ill.—B,D
 National Coil Co., P. O. Box 1237, Sheridan, Wyo.—B,C
 NATIONAL CO., 61 Sherman St., Malden 48, Mass.—B,C
 Networks Electronic Corp., 14806 Oxnard St., Van Nuys, Calif.—D
 New York Coil Co., Inc., Phoenixville, Pa.—A,D,E
 North Hills Electric Co., 246-32 54th Ave., Couzlaston, L.I. 62, N.Y.—B,C
 Nuclear Measurements Corp., 2460 N. Arlington Ave., Indianapolis 18, Ind.—D
 OGDEN COIL & TRANSFORMER CO., 2124 W. Carroll Ave., Chicago 12, Ill.—D
 Ohmit Mfg. Co., 3601 Howard St., Skokie, Ill.—B,C
 Ortho Filter Corp., 196 Albion Ave., Paterson 2, N.J.—A,D,E,F
 Orthon Corp., 190 Albion Ave., Paterson, N.J.—A,B,C
 Osborne Transformer Corp., 948 E. Lafayette Ave., Detroit 7, Mich.—D,E,F
 Otis Radio & Electric Corp., 700 Central Ave., Hawarden, Iowa—A,B
 Palo Alto Eng'g., 440 Olive Ave., Palo Alto, Calif.—D
 Peerless Electrical Products, Div. Altec Lansing Corp., 9356 Santa Monica Blvd., Beverly Hills, Calif.—A,D,E,F
 Permoflux Corp., 4900 W. Grand Ave., Chicago 39, Ill.—A,D
 Pioneer Electronics Corp., 24 Saunders St., Salem, Mass.—B
 Power Transformer Co., 532 Mulberry St., Newark 5, N.J.—A,D,E,F
 Q.L.C. Corp., 10 Aubrey St., Summit, N.J.—B,C
 Radex Corp., 2076 Elston Ave., Chicago 14, Ill.—A
 Radio Coils 1519 W. Devon Ave., Chicago 26, Ill.—M
 RADIO CORP. OF AMERICA, RCA Tube Dept., 415 S. 5 St., Harrison, N.J.—A,B,C,D,E,F
 Radio Industries, Inc., 5225 N. Ravenswood Ave., Chicago 40, Ill.—B,C
 Radio Music Corp., #4 S. Water St., Port Chester, N.Y.—A,D
 Radio TV Products, Grass Lake, Mich.—B
 Radionic Controls, Box 237, Herrin, Ill.—A,D,E,F
 Randall, Inc., Douglas, 102 High St., Westerly, R.I.—A,D,E
 RAYTHEON MFG. CO., Waltham 54, Mass.—F
 Redman Electronics Corp., 92 Prospect St., Thompsonville, Conn.—A,B,C
 Rhode Island Electronics, Inc., Mill St., Londale, R.I.—D
 R. K. Mfg. Co., P.O. Box 112, Marion, Ill.—A,D
 Robt. Co., 2530 Superior Ave., Cleveland 14, Ohio—A
 Rollins Corp., P.O. Box 213, Mulberry St., Lewes, Del.—A,D,F
 Rosa Mfg. Co., 2405 Armitage Ave., Chicago 11, Ill.—B
 Sag Harbor Industries, Box M Sag Harbor, L.I., N.Y.—A,E
 Saratoga Industries, Ballston Ave., Saratoga Springs, N.Y.—A,D,E,F
 SHALCROSS MFG. CO., 520 Pusey Ave., Collingdale, Pa.—B
 Sickles Div., F. W., General Instrument Corp., P. O. Box 330, Chicopee, Mass.—B
 SNC Mfg. Co., P. O. Box 277, Oshkosh, Wis.—A
 Southwestern Industrial Electronics, 281 Post Oak Rd., Houston, Tex.—A,D
 Specialties Inc., Skunks Misery Rd., Syosset, L.I., N.Y.—A

Speer Carbon Co., Speer Resistor Div., St. Marys, Pa.—A,B
 Square Root Mfg. Corp., 311 Saw Mill River Rd., Yonkers, N.Y.—A,B,C,D,E,F
 Stanwyck Winding Co., P. O. Box 70, Newburgh, N.Y.—A,B,C
 Sterling Transformer Corp., 297 N. 7 St., Brooklyn 11, N.Y.—A,D
 Strong Electric Co., 87 City Park Ave., Toledo 2, Ohio—E
 Superex Electronics Corp., 23 Atherton St., Yonkers, N.Y.—B,C,D
 Tartak Electronics, 2979 N. Ontario St., Burbank, Calif.—A,D,E,F
 Tech-Master Corp., 443 Broadway, New York 13, N.Y.—A
 Technical Apparatus Builders, 109 Liberty St., New York 6, N.Y.—D
 Telex, Inc., 1633 Eustis St., St. Paul 1, Minn.—A,B,C
TEXAS INSTRUMENTS INC., 6000 Lemmon Ave., Dallas 3, Texas—A,B,C,D,F
 Thor Transformer & Electronics, Inc., 750 San Antonio Rd., Palo Alto, Calif.—A,D,E,F
 T. J. Mfg. Corp., 1020 S. Josephine St., Martinsville, Ind.—B,C,D,E
 Todd Products Co., 156 Gramatan Ave., Mt. Vernon, N.Y.—A,D,E,F
 Torwico Electronics, Inc., 961 Frelinghuysen Ave., Newark 5, N.J.—A,D
 Transformer Engineers, 161 E. Calif. St., Pasadena 1, Calif.—A,D,F
 Transformers, Inc., 532 North St., Endicott, N.Y.—A,D,F
 Transformer Mfrs. Inc., 850 W. Weed St., Chicago 22, Ill.—A
 Transformer Technicians, Inc., 2608 N. Cicero Ave., Chicago 39, Ill.—A,D,E,F
 Transvision Inc., 460 North Ave., New Rochelle, N.Y.—A
 TRFSCO, 3824 Terrace St., Philadelphia 28, Pa.—A,D,F
 Triad Transformer Corp., 4055 Redwood Ave., Venice, Calif.—A,D,F
 Tri-Dex Co., Box 1207, Lindsay, Calif.—B,C,F
 TV Products Corp., 907 E. 23 St., Patterson 3, N.J.—A
 Union Electric Products Co., 24 Edison Pl., Newark 2, N.J.—A,B,D,E,F
 Union Spring & Mfg. Co., 1057 Summit Ave., Jersey City, N.J.—A,B,C
 United Pressed Products Co., 741 W. Harrison St., Chicago 7, Ill.—M,N
 United Technical Labs., Morristown, N.J.—B,D
U. S. ELECTRONICS CORP., 975 Warren St., Lyndhurst, N.J.—A,B,D,E,F
 Utah Radio Products Co., 1123 E. Franklin St., Huntington, Ind.—A
 Vanguard Electronics Co., 3384 motor Ave., Los Angeles 34, Calif.—B,C
 Varo Mfg. Co., 1801 Walnut St., Garland, Tex.—A,D,F
 Vokar Corp., Dexter, Mich.—A,B,C,D,F
 Welch Electric Co., 1221 Wade St., Cincinnati 14, Ohio—A,D,F
 West Coast Electronics Co., 5873 W. Jefferson Blvd., Los Angeles 16, Calif.—A
 Wheeler Insulated Wire Co., 150 E. Aurora St., Waterbury, Conn.—A,D,F
 Wilco Corp., 546 Drover St., Indianapolis 21, Ind.—A,B,C,D
 Wilcox Research Co., 11122 Aqua Vista St., N. Hollywood, Calif.—B,C
 White Industries Inc., 421 W. 54 St., New York 19, N.Y.—B,C
 Wirt Co., 5221 Greene St., Philadelphia 44, Pa.—B,C
 Woodward-Schumacher Electric Corp., 1725 W. North Ave., Chicago 22, Ill.—A,D
 Workman TV Inc., 309 Queen Anne Rd., Teaneck, N.J.—D

18—CIRCUITS

Circuits, etched **A**
Circuits, embossed **J**
Circuits, plated **I**
Circuits, potted **B**
Circuits, printed **C**
Circuits, stamped **D**
Delay lines **E**
Pulse forming networks **H**

Aerovox Electronics Inc. (Sub. Aerovox Corp.) 2724 Peck Rd., Monrovia, Calif.—E,H
 Advance Electronics Co., P. O. Box 394 Passaic, N.J.—E
 Aerolite Electronics Corp., 607 26 St., Union City, N.J.—E
AROVEX CORP., 740 Belleville Ave., New Bedford, Mass.—C,D,E,H
 Airborne Instruments Lab., 160 Old Country Rd., Mineola, L.I., N.Y.—A
 Aircraft Marine Products, 2100 Paxton St., Harrisburg, Pa.
 Airlyte Electronics Co., 21 Cottage St., Bayonne, N.J.—B,C
IDEN PRODUCTS CO., 117 N. Main St., Brockton, Mass.—C,D
 Allied Engraving and Stamping Co., 161 Elliott St., Buffalo 3, N.Y.—C,D
 Allied Photo Engravers, 153 W. Huron St., Chicago, Ill.—A
 Allied Research & Eng'g. Inc., 1041 N. Las Palmas Ave., Hollywood 38, Calif.—A
 American Electronics Co., 1203 Bryant Ave., New York 59, N.Y.—C
 American Machine & Foundry Co., Electronics Div., 1085 Commonwealth Ave., Boston 15, Mass.—B

American Metaseal Co., 3337 Lincoln Ave., Franklin Park, Ill.—C
 Anderson Labs., 39 Talcott Rd., W. Hartford 10, Conn.—C,E
 Applegate & Co., C. J., 1816 Grove St., Boulder, Colo.
 Arenberg Ultrasonic Lab., 94 Green St., Jamaica Plain 30, Mass.—E
 Arrow-Hart & Hegeman Electric Co., 103 Hawthorn St., Hartford 6, Conn.—B
 Audio Products Corp., 2265 Westwood Blvd., Los Angeles 64, Calif.—B
 Barker & Williamson, 237 Fairfield Ave., Upper Darby, Pa.—E
 Bendix Aviation Corp., 11600 Sherman Way, New Hollywood, Calif.—A
 Bestcraft Products Co., 626 Broadway, New York 12, N.Y.—D
 Bigelow Chemical Products Co., P.O. Box 65, Quincy 69, Mass.—D
 Browning Laboratories, Inc., 750 Main St., Winchester, Mass.—C
 Brubaker Mfg. Co., 9151 Exposition Dr., Los Angeles 34, Calif.—E,H
 Cardwell Electronics Productions, Allen D., Plainville, Conn.—A,C,D,I
CENTRALAB, DIV. GLOBE-UNION INC., 900 E. Keefe Ave., Milwaukee 1, Wisc.—C,I
 Centronics Co., 21-04 122 St., College Point 66, N.Y.—A,B,C,I
 Church Co., George H., 5109 Halifax Ave., Minneapolis 10, Minn.—H
 Circuitron, Inc., 115 E. Main St., Rockville, Conn.—A,B,C,I
 Circuit Corp., 2448 N. Cicero Ave., Chicago, Ill.—C
CITATION PRODUCTS CO., 233 E. 146 St., New York 51, N.Y.—A,C
 Clegg Laboratories, Inc., 142 S. Livingston Ave., Livingston, N.J.—E,H
 Coleraft, Inc., Jandus Rd., Cary, Ill.—E
 Colovision Plastics Inc., 247 Atlantic Ave., Boston 10, Mass.—C
Columbia Technical Corp., 5 E. 57 St., New York 22, N.Y.—E
 Continental Diamond Fibre, Newark, Del.—C
 Control Electronics Co., 1925 New York Ave., Huntington Station, N.Y.—E,H
CORNING GLASS WORKS, Corning, N.Y.—C,E,I
 Creative Eng'g. Corp., 10816 Burbank Blvd., N. Hollywood, Calif.—E
 Cromame, Inc., 3701 Ravenswood Ave., Chicago 13, Ill.—A
 Davelle Laboratories, Inc., 145-68 228th St., Springfield Gardens 13, N.Y.—A,B,C,D,I
 Daven Co., 191 Central Ave., Newark 4, N.J.—A,C,F
DEJUR-AMSCO CORP., 45-01 Northern Blvd., Long Island City 1, N.Y.—C
 Demco Products, P.O. Box 5042, Philadelphia 11, Pa.—E,H
 Deutschmann Corp., Tobe, Providence Highway, Norwood, Mass.—E,H
 Diets Co., Henry G., 12-16 Astoria Blvd., Long Island City 2, N.Y.—C
 Digital Products, Inc., 7643 Fay Ave., La Jolla, Calif.—A,B,C
 Drive-In-Theater Mfg. Co., 505 W. 9th, Kansas City, Mo.—H
 Dynakon Corp., 9623 Clinton, Cleveland, Ohio—C
ERY INC., HUGH H., 4700 Stenton Ave., Philadelphia 44, Pa.—A,C
ELECTRALAB, INC., 106 First St., Cambridge, Mass.—A,C,D,I
 Electrochemical Industries, Jacques St., Worcester 3, Mass.—I
 Electronic Computer Co., 265 Butler St., Brooklyn 17, N.Y.—E
 Electronic Eng'g Co. of California, 180 S. Alvarado St., Los Angeles 57, Calif.—A
 Electronic Mechanics, Inc., 101 Clifton Blvd., Clifton, N.J.—C
 Electrometric, Inc., Woodstock, Ill.
 Electron-Radar Products, 1041 N. Pulaski Rd., Chicago 51, Ill.—C
 Electro-Seal Corp., 946 North Ave., Des Plaines, Ill.—C
 El-Rad Mfg. Co., 2800 W. Cullom, Chicago 18, Ill.—E
 Elm Labs., 18 S. Broadway, Dobbs Ferry, N.Y.—C
EMERSON & CUMING, 869 Washington St., Canton, Mass.—B
 Empire State Labs., 2608 Merrick Rd., Bellmore, Long Island, N.Y.—D,E
 Eng'g. Research & Development Co., Addison, Ill.—C,D
 Esco, Inc., 126 Mass Ave., Boston 15, Mass.—E
 Erie Resistor Corp., 644 W. 12th St., Erie, Pa.—C,J
 Espey Mfg. Co., 528 E. 72 St., New York 21, N.Y.—E
 Esco Corp., 578 E. 161st St., New York 56, N.Y.—B,E,H
 Etched Products Corp., 3901 Queens Blvd., Long Island City 1, N.Y.—A
 Farrington Mfg. Co., 76 Atherton St., Boston, Mass.—C
FEDERAL TELEPHONE & RADIO CO., DIV. I T. & T., 100 Kingsland Rd., Clifton, N.J.—E
 Forbes & Wagner Inc., 339 Central Ave., Silver Creek, N.Y.—E,H
 Formica Co., 4614 Spring Grove Ave., Cincinnati 32, Ohio—A,C,D,I
GENERAL ELECTRIC CO. BROADCAST EQUIP & COMMERCIAL EQUIP. DIV., Electronics Park, Syracuse, N.Y.—A,E,I

Glass Products Co., 6911 S. Chicago Ave., Chicago 37, Ill.—A,C,I
 Glenco Corp., Durham Ave., Metuchen, N.J.—B,C
 Goldsmith Bros. Smelting & Refining Co., 111 N. Wabash Ave., Chicago 2, Ill.—A
 Gramer Transformer Corp., 2734 N. Pulaski Rd., Chicago 39, Ill.—H
GUDEMAN CO., 9200 Exposition Blvd., Los Angeles 34, Calif.—B,E,H
GULTON MFG. CO., 212 Durham Ave., Metuchen, N.J.—B,C,E,H
GUTHMAN & CO., EDWIN I., 15 S. Throop St., Chicago 7, Ill.—E
 Harder Co., Donald C., 3338 India St., San Diego 1, Calif.—E,H
 Herlec Corp., 6th & Beach Sts., Grafton, Wis.—C
Hi-Q Div. Aerovox Corp., Olean, N.Y.—C
 Hubbell Inc., Harvey, State St. & Bostwick Ave., Bridgeport, Conn.—C
 Hufford Machine Works, Electronics Division, 2201 Carmelina Ave., Los Angeles 61, Calif.—E
 Hyeon Mfg. Co., 2961 E. Colorado St., Pasadena 8, Calif.—E
 Industrial Television Inc., 369 Lexington Ave., Clifton, N.J.—E
INSULATED CIRCUITS, INC., 115 Roosevelt Ave., Belleville, N.J.—A,B,C,D,E,H,I
 Insulating Fabricators of N.E., 69 Grove St., Watertown 72, Mass.—A,C
 Interelectronics Corp., 2432 Grand Concourse, New York 58, N.Y.—A,B,C
 Int'l. Research Associates, 2221 Warwick Ave., Santa Monica, Calif.—E
 Jacobs Instrument Co., 4718 Bethesda Ave., Bethesda 14, Md.—B,E,H
 Javex, Box 646, Redlands, Calif.—C
 Johnson Labs., Willard Rd., Norwalk, Conn.—C
 Kaiser Metal Products Inc., Bristol, Pa.—H
 Kalbfell Labs., Inc., 1090 Morena Blvd., San Diego 10, Calif.—A
 Kings Electronics Co., 40 Marbledale Rd., Tuckahoe, N.Y.—E,H
 Krenzel Mfg. Co., 227 Fulton St., New York 7, N.Y.—D
 Lab for Electronics, 75 Pitts St., Boston, Mass.—E
 Lectra Inc., 153 W. Huron St., Chicago 10, Ill.—A,C,I
LEE LABORATORIES INC., Genesee, Pa.
 Lenkurt Electric Co., San Carlos, Calif.—E
 Leonard Electric Products Co., 67 34th St., Brooklyn 32, N.Y.—E,H
 Lyaco Mfg. Co., 1401 Clinton St., Hoboken, N.J.—D
 Magnavox Co., Ft. Wayne 4, Ind.—A,C
 Magnex Corp., 90-23 Van Wyck Expressway, Jamaica 18, N.Y.—A,B,C
 Maida Development Co., 214 Academy St., Hampton, Va.—A
 May Eng'g. Co., 6055 Lankershim Blvd., North Hollywood, Calif.—E,H
METHODE MFG. CORP., 2021 W. Churchill St., Chicago 47, Ill.—A,C,D,I
 Metz Refining Co., 369 Mulberry St., Newark 2, N.J.—I
 Micro-Circuits Co., New Buffalo, Mich.—C
 Millen Mfg. Co., James, 150 Exchange St., Malden, Mass.—E
 Mitronics Inc., 232 13th Ave., Newark, N.J.—C,D
MYCALEX CORP. OF AMERICA, 125 Clifton Blvd., Clifton, N.J.—C
 Nameplates, Inc., 425 E. 101st St., Brooklyn 12, N.Y.—A,C
National Capacitor Co., 545 Washington St., Quincy 69, Mass.—B
 Networks Electronic Corp., 14806 Oxnard St., Van Nuys, Calif.—B,E,H
 North American Model Products, 9802 Warwick Rd., Warwick, Va.—A,C,I
 North Shore Nameplate Co., Bank of Manhattan Bldg., Bayside, L.I. 61, N.Y.—A
 Onondaga Pottery Co., Electronics Div., 1858 W. Fayette St., Syracuse 1, N.Y.—C
 Orthon Corp., 196 Albion Ave., Paterson, N.J.—B
 Pacific Mercury TV Mfg., 5955 Van Nuys Blvd., Van Nuys, Calif.—A
 PCA Electronics Inc., 2180 Colorado Ave., Santa Monica, Cal.—E,H
 Permanent Label Corp., 578 Summit Ave., Jersey City 6, N.J.—C
PHOTOCIRCUITS CORP., Glen Cove, N.Y.—A,B,C,E,I
 Plastics & Electronics Co., 272 Northland Ave., Buffalo 8, N.Y.—B,C,I
 Potter Instrument Co., 115 Cuttermill Rd., Great Neck, N.Y.—H
 Radio Ceramics Corp., 109 S. Superior St., Angola, Ind.—A
 Radio City Products Co., 101 West 31 St., New York 1, N.Y.—A,C,I
RADIO CORP. OF AMERICA, RCA Tube Dept., 415 S. 5 St., Harrison, N.J.—C
 Radio Industries, Inc., 5225 N. Ravenswood Ave., Chicago 25, Ill.—E,H
 Richardson Co., Lockland, Cincinnati 15, Ohio—A,C
SAMPSON CHEMICAL & PIGMENT CORP., 2830 W. Lake St., Chicago 12, Ill.—C
 Sanders Associates, 137 Canal St., Nashua, N.H.—C
SHALLCROSS MFG. CO., 520 Pusey Ave., Collingdale, Pa.—E,H
 Sickles, F. W., Div., General Instrument Corp., P.O. Box 330, Chicopee, Mass.—E,C,H
 Silver Bay Equip. Co., 5004 20 St. N.W., Seattle 7, Wash.—C

Smith, Inc., Herman H., 436 18 St., Brooklyn 15, N.Y.—F,G
 Solar Mfg. Corp., 2660 E. 46 St., Los Angeles 68, Calif.—C
 Sound Devices Inc., 129 E. 124 St., New York 35, N.Y.—C
 Spaulding Fibre Co., 310 Wheeler St., Tonawanda, N.Y.—C
 SPRAGUE ELECTRIC CO., 233 Marshall St., North Adams, Mass.—B,C,H
 Standard Coil Products Co., 2329 N. Pulaski Rd., Chicago 39, Ill.—A,B,C,E
 Star Fuse Co., 235 Canal St., New York 13, N.Y.—A,C
 STUPAKOFF CERAMIC & MFG. CO., Latrobe, Pa.—C
 Superex Electronics Corp., 23 Atherton St., Yonkers, N.Y.—C
 SYLVANIA ELECTRIC PRODUCTS, 1740 Broadway, New York 19, N.Y.—A,C,D
 Technograph Printed Electronics, Inc., 185 Valley St., Tarrytown, N.Y.—A,C,I
 Telex, Inc., 1633 Eustis St., St. Paul 1, Minn.—A,C
 TEXAS INSTRUMENTS INC., 6000 Lemmon Ave., Dallas 9, Tex.—A,E,H
 TV Labs, Inc., 5645 W. Lake St., Chicago 44, Ill.—A,C,D
 Thermo Instrument Co., P. O. Box 336, Belmont, Calif.
 Thompson Clock Co., H. C., 38 Federal St., Bristol, Conn.—C,D
 Torwico Electronics, 967 Frelinghuysen Ave., Newark 5, N.J.—E
 Transformers Inc., 532 North St., Endicott, N.Y.—B,H
 Tri-Dex Co., P. O. Box 1207, Lindsay, Calif.—A,B,C,I
 U.M. & F. MFG. CORP., 10929 Van Owne St., N. Hollywood, Calif.—E
 Underwood Corp., Electronic Computer Div., 35-10 36 Ave., Long Island City 6, N.Y.—E
 U. S. ELECTRONICS CORP., 275 Warren St., Lyndhurst, N.J.—E
 U. S. ENGG. CO., 521 Commercial St., Glendale 3, Calif.—A
 U. S. Gasket Co., 602 N. 10 St., Camden 1, N.J.—A,C,D,E
 U.S. Radium Corp., 535 Pearl St., New York 7, N.Y.—A
 U.S. Testing Co., 1415 Park Ave., Hoboken, N.J.—E,H
 Vacuum Inc., 1009 W. Weed St., Chicago 22, Ill.—A,B,C,D,E,I
 Vanguard Electronics Co., 3384 Motor Ave., Los Angeles 34, Calif.—B,E,H
 VECTRON, INC., 400 Main St., Waltham 54, Mass.—B,H
 Vianet Inc., 2634 Park Ave., New York 51, N.Y.—C
 Vokar Corp., Dexter, Mich.—A,C,I
 Walkirt Co., 145 W. Hazel St., Inglewood 3, Calif.—A,B
 West Coast Electronics Co., 5873 W. Jefferson Blvd., Los Angeles 16, Calif.—B,E
 Wheaton Co., T. C., Millville, N.J.—C
 White Instrument Laboratories, 203 Riverside Dr., Austin 4, Texas—B
 White Industries, 421 W. 54 St., New York 19, N.Y.—E,H
 Wilmar Mfg. Co., 2715 E. 14th St., Kansas City 27, Mo.—A,B,C,I
 Wilson Camera Co., 1401 Lawrence Rd., Havertown, Pa.

19—Coils

Coil assemblies	A
Coil forms	B
Coil winding machines	C
Coils, antenna	D
Coils, audio crossover	T
Coils, color purity	Y
Coils, deflection yokes	E
Coils, flyback	F
Coils, heating	G
Coils, IF	H
Coils, ignition	I
Coils, magnet	J
Coils, pickup	K
Coils, relay	L
Coils, R-F receiving	M
Coils, R-F transmitting	N
Coils, speaker	O
Coils, toroidal	P
Coils, transducer	V
Coils, TV field	U
Coils, TV focusing	Q
Coils, inductors	R
Coils, reactors	S

Ace Coil & Electronics Co., 924 Middlesex Ave., Metuchen, N.J.—A,D,H,K,M,N,R
 Acme Coil & Transformer Corp., 1915 N. Clybourn Ave., Chicago 14, Ill.—A,S,T
 Acme Electric Corp., Water St., Cuba, N.Y.—I,R,S
 Acme Electronics Inc. (Sub. Aerovox Corp.), 2724 Peck Rd., Monrovia, Calif.—A,D,M,N,P,T
 Acorn Electronics Corp., Box 348, Gibson City, Ill.—L,S
 Aero Products Co., 369 Shurs Lane, Philadelphia 28, Pa.—R,S,T

Acro Transformer & Mfg. Corp., 26-02 4 St., Long Island City 2, N.Y.—R,S
 Aerocoil, Inc., 24 Cliff St., Jersey City, N.J.—A,D,H,J,M,N,R,S
 Aerolite Electronics Corp., 507 26 St., Union City, N.J.—A,D,H,M,N,P
 Aeronautical Radio Mfg. Co., 1955 1st St., Mineola, N.Y.—D
 Ahrendt Instrument Co., 4910 Calvert Rd., College Park, Md.—P
 AIRCRAFT TRANSFORMER CORP., West & Willow Aves., Long Branch, N.J.—R,S
 Airpax Products Co., P. O. Box 187, Middle River, Baltimore 2, Md.—J,P,R,S
 A. J. F. Industries, 852 Monroe St., Brooklyn 21, N.Y.—S
 Alcar Instruments Inc., 20-21 Wagaraw Rd., Fair Lawn, N.J.—C
 Aladdin Radio Industries, 703 Murfreesboro Rd., Nashville, Tenn.—A,D,H,M,N,U
 Allied Allegri Machine Co., 141 River Rd., Nutley 10, N.J.—D,M
 Allied Control Co., 2 East End Ave., New York 21, N.Y.—J,L
 Allied Mfg. Corp., 605 61 St., W. New York, N.J.—A,E,I
 AMERICAN LAVA CORP., Cherokee Blvd., & Mfrs. Rd., Chattanooga 5, Tenn.—B
 AMERICAN PHENOLIC CORP., 1830 S. 54th Ave., Chicago 50, Ill.—B
 American Relay & Controls, Inc., 3621 Howard St., Skokie, Ill.—J
 Anchor Electronics Inc., 717 Sip St., Union City, N.J.—A,D,H,M,N,R
 ANDREW CORP., 363 E. 75th St., Chicago 19, Ill.—N
 A. P. W. Co., 72 W. Main St., Rockaway, N.J.—A,I,J,K,P,S
 Arco Transformer & Electric Corp., 1602 S. Hanna St., Ft. Wayne 5, Ind.—A,I,J,K,L,S,T
 Arted Co. Inc., 367 Worthington St., Springfield 3, Mass.—A,D,H,K,M,N,R
 Associated Production Co., 162 N. Clinton St., Chicago 6, Ill.—B,C,P
 Atlantic Transformer Corp., 30 Hynes Ave., Groton, Conn.—I,J,R,S,T
 Atlas Coil Winders, Inc., 39 Manhattan St., Stamford, Conn.—A,G,H,J,K,M,R,S
 Atlas Engineering Co., 3 Edgewood St., Roxbury, Mass.—A,J,P,R,S
 Automatic Mfg. Corp., 65 Gouverneur St., Newark 4, N.J.—A,D,E,F,H,M,Q,R
 Barker & Williamson, 237 Fairfield Ave., Upper Darby, Pa.—A,D,G,H,M,N,P,R
 Barker Electric Co., 601 Fifth St., Highland, Ill.—A,I,L,P,R,S,T
 Bassett Inc., Box 1314 NE 17th Court, Ft. Lauderdale, Fla.—D
 Beam Instruments Corp., 350 5 Ave., New York 1, N.Y.—E
 Best Mfg. Co., 1200 Grove St., Irvington 11, N.J.—A,J,L,O,Q
 Bitterman Electric Co., Barlow & Grove Sts., Canaan, Conn.—A,J,P,R,S,T
 Bram Chemical Co., 829 65th Ave., Philadelphia 26, Pa.—P
 Bristol Eng'g. Corp., Bristol, Pa.—A
 British Industries Corp., 164 Duane St., New York 13, N.Y.—C
 Broadway Coil Co., 5638 Broadway, Chicago 40, Ill.—A,B,D,E,F,H,L,P,R,S,T
 Brook Electronics, Inc., Box 491, Elizabeth, N.J.—A
 BUD RADIO INC., 2118 E. 55 St., Cleveland 2, Ohio—B
 Bunnell & Co., J.H., 81 Prospect St., Brooklyn N.Y.—L,N
 BURNELL & CO., 45 Warburton Ave., Yonkers, N.Y.—P,R
 Caddell-Burns Mfg. Co., 40 E. 2nd St., Mineola, N.Y.—A,B,D,H,M,R,S
 Calbest Eng'g. & Electronics Co., 828 N. Highland Ave., Hollywood 38, Calif.—D,H,M
 Cambridge Thermionic Corp., 445 Concord Ave., Cambridge 38, Mass.—A,B,D,H,M,N,R
 Campbell X-Ray Corp., 110 Cummington St., Boston 15, Mass.—A
 Carad Corp., 2850 Bay Rd., Redwood City, Calif.—F,H,M,N,P
 Cardwell Electronics Productions, Allen D., Plainville, Conn.—H
 Carruthers & Fernandez, 1501 Colorado Ave., Santa Monica, Calif.—J,L
 CENTRAL LAB. DIV. OF GLOBE-UNION INC., 900 E. Keefe Ave., Milwaukee 1, Wisc.—B
 Central Coil Co., 1720 N. Luett St., Indianapolis 22, Ind.—A,D,H,J,M,R,S
 Central Transformer Co., 908 W. Jackson Blvd., Chicago 7, Ill.—R,S
 CGS Laboratories, Inc., 391 Ludlow St., Stamford, Conn.—M,N,R,S
 Chicago Standard Transformer Corp., Addison & Elston, Chicago 18, Ill.—E,F,P,Q
 CITATION PRODUCTS CO., 233 E. 146 St., New York 51, N.Y.—A,B
 CLEVELAND CONTAINER CO., 6201 Barberton Ave., Cleveland 2, Ohio—B
 CLIPPARD INSTRUMENT LAB. INC., 7550 Colerain Rd., Cincinnati 24, Ohio—C,D,H,M
 Clum Mfg. Co., 611 W. National Ave., Milwaukee 41, Wisc.—Q,U
 Coast Coil Co., 5352 W. Washington Blvd., Los Angeles 16, Calif.—P,R,S
 Coilcraft, Inc., Jandus Rd., Cary, Ill.—A,D,F,H,I,J,K,L,M,R,S,U
 Coil Eng'g & Mfg. Co., 200 Main St., Roanoke, Ind.—I,J,L,O
 Coil Winders, Inc., New York Ave., Westbury, L.I., N.Y.—A,B,D,E,H,L,M,N,R,S

Coil Winding Equipment Co., 19 Maxwell Ave., Oyster Bay, N.Y.—C
 COLORTONE Electronics, 238 Williams St., New York 39, N.Y.—A
 Comar Electric Co., 3349 W. Addison St., Chicago 18, Ill.—A,I
 COMMUNICATION ACCESSORIES CO., 110 St. & 71 Hi-way, Hickman Mills, Mo.—P,R,S
 Communication Parts, 7466 W. Irving Park Rd., Chicago 34, Ill.—A,D,H,M,P,U,R,S
 Component Manufacturers, 38-01 23rd Ave., Long Island City 5, N.Y.—A,E,F,H,J,M,P,Q
 Conn. Telephone & Electric Co., 70 Britannia St., Meriden, Conn.—C,P
 Constantine Eng'g. Labs. Co., P.O. Box 471, Mahwah, N.J.—A,E,F,P,R,S
 Continental Electronics Ltd., 302 Oakland St., Brooklyn 22, N.Y.—A,D,H,T
 Continental Electronics Mfg. Co., 4212 S. Buckner Blvd., Dallas 10, Tex.—N
 Control Electronics Co., 1925 New York Ave., Huntington Station, N.Y.—A,T
 CORNING GLASS WORKS, Corning, N.Y.—M,R
 Corona Eng'g. Service 94-52 Corona Ave., Elmhurst, L.I., N.Y.—P
 Coto-Coil Co., 65 Pavillion Ave., Providence 5, R.I.—A,J,L
 Crowley & Co., Henry L., 1 Central Ave., W. Orange, N.J.—B
 Custom Electronics Corp., 738 Speedwell Ave., Morris Plains, N.J.—H,M,N
 Cycle Electronic Labs., 356 Glenwood Ave., E. Orange, N.J.—I,J,L,R,S
 Dano Electric Co., Winnetka, Conn.—B
 Davis Electric Co., 230 N. Spring Ave., Cape Girardeau, Mo.—A,E,I,P,Q
 DeCoursey Eng'g. Lab., P.O. Box 235, Los Angeles 25, Calif.—P,R
 Delco Radio Division, General Motors Corp., Kokomo, Ind.—H,M
 Delta Electronics, 259 Green St., Brooklyn 22, N.Y.—H,M,N
 Delta Radio Co., 115 Worth St., New York 13, N.Y.—A,D,E,H,M,N,P,T
 Deluxe Coils, Inc., First & Webster Sts., Wabash, Ind.—J,L
 Demco Products, P.O. Box 5042, Philadelphia 11, Pa.—P
 Deutschmann Corp., Tobe, 921 Providence Highway, Norwood, Mass.—P
 DeWitt Development Co., 3008 W. 127th St., Blue Island, Ill.—A,H,J,K,L,M,N,R
 Diatron Co., 8327 Dixie Dr., Houston 21, Texas—A,D,G,H,M,N,R
 Dictograph Products Inc., 95-25 149th St., Jamaica 35, N.Y.—K,V
 Dietz Design & Mfg. Co., Grandview, Mo.—P,R,S
 Digital Products, Inc.—7643 Fay Ave., La Jolla, Calif.—H
 Dinion Coil Co., Caledonia, N.Y.—J,R,S
 Dormeyer Industries, 3418 Milwaukee Ave., Chicago 41, Ill.—A,R,I,J,L,O
 Dormitzer Electric & Mfg. Co., 5 Hadley St., Cambridge 40, Mass.—A
 Drake Co., R. L., 18 E. Central Ave., Miamisburg, Ohio
 Du-Co Ceramics Co., Box 587, Butler, Pa.—B
 Dunkle Coil Co., 3257 W. 6 St., Los Angeles, Calif.—A,D,F,I,Q
 DX RADIO PRODUCTS INC., 2300 W. Armistead Ave., Chicago 47, Ill.—E,F,H,O,P,Q,S
 Eastern Electronic Products Corp., 2 Manor House Sq., Yonkers, N.Y.—A,M,R
 ERY CO., HUGH H., 4700 Stenton Ave., Philadelphia 44, Pa.—B
 Electran Mfg. Co., 1901 Clybourn Ave., Chicago 14, Ill.—A,J,K,R,S
 Electrical Windings, Inc., 2015 N. Kilmar Ave., Chicago 39, Ill.—A,J,L,R,S
 Electro Assemblies, Inc., 2935 W. Belmont Ave., Chicago 18, Ill.—A,D,H,M,N,R,S
 Electro Eng'g. Works, 6021 College Ave., Oakland 18, Calif.—R,S
 Electro-Mec Lab. Inc., 21-09 43rd Ave., Long Island City 1, N.Y.—P
 Electrometric Inc., Box 107, Woodstock, Ill.—A,D,F,H,J,K,M,N,R,S,U
 Electronic Coils, Inc., 83 Lyman St., Springfield, Mass.—A,J,K,L,P,R,S,V
 Electronic Mechanics, Inc., 101 Clifton Blvd., Clifton, N.J.—B,M,N
 Electronic Research Co., 11550-39 St. N.E., Seattle 55, Wash.—N
 Electronic Transformers Co., 209 W. 25 St., New York 1, N.Y.—D,E,R,S,T
 Electro-Seal Corp., 946 North Ave., Des Moines, Ill.—E,Q
 Electro-Technics, Inc., 198 Albion Ave., Paterson, N.J.—A,B,C,D,J,L,M,P,R,S
 Electro-Voice, Inc., Buchanan, Mich.—O,T
 Elk Electronic Labs. Inc., 332 W. 52 St., New York 19, N.Y.—H,N
 El-Rad Mfg. Co., 2800 W. Cullom, Chicago 15, Ill.—A,D,F,H,J,L,M,N,R,S,T
 Empire Coil Co., 85 Beechwood Ave., New Rochelle, N.Y.—F,H,J,K,L,M,R,S,T
 Ensign Coil Co., 2516 S. Pulaski Rd., Chicago 23, Ill.—Q
 Epco Products, Inc., 2500 Atlantic Ave., Brooklyn 7, N.Y.—J,R,S,T
 Epsco, Inc., 126 Mass. Ave., Boston 15, Mass.—P
 Essex Electronics, 550 Springfield Ave., Berkeley Heights, N.J.—F,H,M,S
 FEDERAL TELEPHONE & RADIO CO. DIV. I, T. & T., 100 Kingsland Rd., Clifton, N.J.—P

erranti Electric, Inc., 30 Rockefeller Plaza, New York 20, N.Y.—R.S
 ve Star Co., W. Main St., Plantsville, Conn.—A.I.J.L.R.
 rbes & Wagner, 339 Central Ave., Silver Creek, N.Y.—A.D.E.F.H.J.M.P.R.S.T
 RD INSTRUMENT CO., 31-10 Thomson Ave., L.L.C. 1, N.Y.—E
 ance Mfg. Co., 10325 Berea Rd., Cleveland 2, Ohio—J.J.L.
 Franklin TV Labs., Inc., 18 Johnson Ave., Brooklyn 6, N.Y.—F.M
 REED TRANSFORMER CO., 1718 Weirfield St., Brooklyn 27, N.Y.—P.R.S
 gle-Miller Labs., 398 Main St., Metuchen, N.J.—A.D.H.M.N.R.S
 ARDE MFG. CO., 588 Eddy St., Providence 3, R.I.—B
 ATES RADIO CO., 123 Hampshire St., Quincy, Ill.—A.D.N
 eral Armature & Mfg. Co., P. O. Box 370, Lock Haven, Pa.—A
 ENERAL CERAMICS & STEATITE CORP., Grove Mill Rd., Keasbey, N.J.—B
 eral Cement Mfg. Co., 919 Taylor Ave., Rockford, Ill.—D
 ENERAL ELECTRIC CO., Apparatus Div., Schenectady 5, N.Y.—P
 eral Instrument Corp., 829 Newark Ave., Elizabeth 3, N.J.—E
 eral Products Corp., 107 Salem St., Union Springs, N.Y.—I
 ENERAL RADIO CO., 275 Mass. Ave., Cambridge 39, Mass.—R
 ERLYN ENGINEERING CO., 2151 N. Damen Ave., Chicago 47, Ill.—A.D.F.H.M.N.Q.R
 Glaser-Steers Corp., 2 Main St., Belleville, N.J.—Q
 Goslin Electric & Mfg. Co., 2921 W. Olive Ave., Burbank, Calif.—A.D.H.I.J.M.N.R.S.T
 Gramer Transformer Corp., 2734 N. Pulaski Rd., Chicago 39, Ill.—D.F.G.H.I.J.K.M.N.O.P.U.R.S
 RAYHILL, 561 Hillgrove Ave., Lagrange, Ill.—B
 Gries Reproducer Corp., 5 Second St., New Rochelle, N.Y.—B
 Guardian Electric Mfg., 1621 W. Walnut, Chicago 12, Ill.—A.E.J.L.Q
 THMAN & CO., EDWIN I., 15 S. Throop St., Chicago 7, Ill.—D.F.H.Q
 Hadley Co., Robert M., 5112 S. Hoover St., Los Angeles 37, Calif.—P.R.S
 Hallorsen Transformer Co., 4500 N. Ravenswood, Chicago 40, Ill.—E.F.Q
 Hall Mfg. Co., 3901 Wesley Terr., Schiller Park, Ill.—A.P.R.S
 Hamilton-Hall Mfg. Co., 227 N. Water St., Milwaukee 2, Wisc.—M
 Hamlyn Electronics Corp., 32 Holman Blvd., Hicksville, N.Y.—A.D.M.N
 Hanson-Gorrill-Brian, Continental Hill, Glen Cove, N.Y.—P.V
 Harder Co., Donald C., 3338 India St., San Diego 1, Calif.—C.P
 Harnett Electric, 138 Haven Ave., Port Washington, N.Y.—H.M.N
 Hazeltine Electronics Corp., 58-25 Little Neck Pkwy., Little Neck 62, N.Y.—A.D.F.H.M.T
 Hercules Elec. Mach'y & Equip. Co., 1442 E. Washington Blvd., Los Angeles 21, Calif.—L
 HEPPNER MFG CO., Round Lake, Ill.—F.Q
 Highland Eng'g. Co., Main & Urban Sts., Westbury, N.Y.—A.R.S
 Hillburn Electronic Products Co., 55 Nassau Ave., Brooklyn 22, N.Y.—A.D.E.F.H.J.K.M.N
 Hundle Transformer Co., Woods Church Rd., Flemington, N.J.—A.J.L.R.S
 HQ Div., Aerovox Corp., Olean, N.Y.—A.M.P.R
 Hopkins Eng'g. Co., 2082 Lincoln Ave., Altadena, Calif.—A.P.R
 Kullihan Co., T. J., 2508 W. Lawrence Ave., Chicago 25, Ill.—A.D.F.H.J.K.M.N.O.P.R
 Lifford Machine Works, Electronics Division, 201 Carmelina Ave., Los Angeles 64, Calif.—P.S
 Licoor Co., 11423 Vanowen St., N. Hollywood, Calif.—P
 Hydro Molding Co., 100 Sharron Ave., Plattsburg, N.Y.—B
 Industrial Transformer Corp., Gouldsboro, Pa.—O.R.S
 Industrial TV, 369 Lexington Ave., Clifton, N.J.—A.B.H.R
 Instrument Lab. Inc., 7350 Colerain Rd., Cincinnati 24, Ohio—M.N
 Insuline Corp. of America, 186 Granite St., Manchester, N.H.—B.N
 Insulating Fabricators of N.E., 69 Grove St., Watertown 72, Mass.—B
 Pump & Machine Works, 11-13 Governor St., Newark 2, N.J.—N
 I-Circuit Breaker Co., 19 & Hamilton Sts., Philadelphia 30, Pa.—D.E.H.M.Q.U
 Jers Electronics Div., Speer Carbon Co., Hoover Ave., Du Bois, Pa.—M
 J Mfg. Co., 6101 16 Ave., Brooklyn 4, N.Y.—D.I
 JHNSON CO., E. F., Waseca, Minn.—A.N.R
 Jnsen Labs., Willard Rd., Norwalk, Conn.—A.B.C.D.F.H.M.N
 Jbins Electronic Enterprises, 500 Hamilton Ave., Menlo Park, Calif.—J.R.S
 Jnsen Electronics Inc., 521 Ellwell St., Orlando, Fla.—A.D.F.H.I.J.K.L.M.N.P.R.S
 Kne Electronics Corp., 81 Willoughby St., Brooklyn 1, N.Y.—A

KELLOGG SWITCHBOARD & SUPPLY CO., 79 W. Monroe St., Chicago 3, Ill.—L
 KENYON TRANSFORMER CO., 840 Barry St., Bronx 59, N.Y.—P.R.S
 Kinetex Inst. Co., 902 Broadway, New York 10, N.Y.—A
 Kings Electronics Co., 40 Marbledale Rd., Tuckahoe, N.Y.—A.D.V
 Kirchberger & Co., M., 1425 37 St., Brooklyn 18, N.Y.—B
 K-V Transformer Corp., 80 E. Franklin St., Danbury, Conn.—A.R.S
 Laboratory for Electronics, Inc., 75 Pitts St., Boston 14, Mass.—A.H.I.M.N.P.R.S.T
 LANGEVIN MFG. CORP., 37 W. 65 St., New York 23, N.Y.—A.R.S
 Lear, Inc., 11916 W. Pico Blvd., Los Angeles 64, Calif.—A.D.H.M.N.P
 Lectrohm Inc., 5560 Northwest Hwy., Chicago 30, Ill.—A.D.G.H.I.L.M.N.R
 Lee Electric & Mfg. Co., 2806 Clearwater St., Los Angeles 39, Calif.—J.R.S
 Leeds Eng'g. Co., 34-40 79th St., Jackson Heights 72, N.Y.—R
 Lenkurt Electric Co., 1105 County Rd., San Carlos, Calif.—P.R.S
 Leonard Electric Products Co., Inc., 67 34th St., Brooklyn 32, N.Y.—A.B.D.E.F.G.H.I.J.K.L.M.N.P.R.S.T.U.V
 LePace Mfg. Co., 75-19 64 St., Glendale 27, N.Y.—A.J.R.S
 Linell Eng'g. Corp., Charles S., 447 South Blvd., Oak Park, Ill.—A.D.H.M.N.R.S
 Long Inc., Thomas J., 215 Stonehenge Lane, Carle Place, Long Island, N.Y.—A.B
 Lynch Carrier Systems, 96 Jessie St., San Francisco 5, Calif.—P
 Max-Electric Products Inc., 14405 Crenshaw Ave., Gardiner, Calif.—A.P.S
 Magnatran, Inc., 248 Schuyler Ave., Kearny, N.J.—S
 Magnavox Co., Ft. Wayne 4, Ind.—J.P
 Magnetic Amplifiers, Inc., 632 Tinton Ave., N.Y. 55, N.Y.—R.S
 Magnetic Instrument Co., 82 Main St., W. Orange, N.J. I.J.P.R.S
 Magnetix Research Co., 142 King St., Chappaqua, N.Y.—P
 Magnex Corp., 90-28 Van Wyck Expressway, Jamaica 18, N.Y.—A.D.F.G.H.I.J.K.M.N.P.Q.R.S
 Marchant Research Inc., 1475 Powell St., Oakland 8, Calif.—S
 Marine View Electronics, 744 E. 138 St., New York 54, N.Y.—A.B.N
 Mattson-Cowley Corp., 1487 Lincoln Ave., Pasadena 3, Calif.—A.B.D.H.M.N.P.R
 May Eng'g. Co., 6055 Lankershim Blvd., N. Hollywood, Calif.—A.L.R
 Mercury Electro-Products, Inc., 622 W. Kinzie St., Chicago 10, Ill.—A.D.E.H.K.L.M.N
 Merit Coil & Transformer Corp., 4427 N. Clark St., Chicago 40, Ill.—D.E.F.H.M.Q
 MICO INSTRUMENT CO., 75 Trowbridge St., Cambridge 38, Mass.—A.C.P.R
 Microtran Div., Crest Labs., 84-11 Rockway Beach Blvd., Rockaway Beach, L.I., N.Y.—O.R.S.U
 Mid-West Coil & Transformer Co., 1642 N. Halsted St., Chicago 14, Ill.—A.H.S
 Millen Mfg. Co., James, 150 Exchange St., Malden, Mass.—A.R.H.M.N.R
 Miller Co., J.W., 5917 S. Main St., Los Angeles 3, Calif.—A.D.H.M.N.R
 Milwaukee Transformer Co., 5231 N. Hopkins St., Milwaukee 9, Wisc.—A.B.I.J.P.S
 Munston Mfg. & Service Inc., Beech St., Islip, N.Y.—D.H.N.S
 Muter Co., 1255 S. Michigan Ave., Chicago 5, Ill.—A.D.E.P.H.O
 MYCALEX CORP. OF AMERICA, 125 Clifton Blvd., Clifton, N.J.—B
 National Coil Co., P. O. Box 1237, Sheridan, Wyo.—A.B.D.H.M.N.R.U
 NATIONAL CO. INC., 61 Sherman St., Malden 48, Mass.—A.B.H
 NATIONAL MOLDFITE CO., 1410 Chestnut Ave., Hillside 5, N.J.—B
 Networks Electronic Corp., 14806 Oxnard St., Van Nuys, Calif.—P.R.S
 New York Coil Co., Inc., Phoenixville, Pa.—A.F.H.I.L.S
 North Electric Mfg. Co., 8. Market St., Gallon, Ohio—L.P
 North Hills Electric Co., 246-32 64th Ave., Douglaston, Queens 62, N.Y.—A.B.D.H.M.N.R
 OGDEN COIL & TRANSFORMER CO., 2124 W. Carroll Ave., Chicago 12, Ill.—I.R.S
 Orthon Corp., 196 Albion Ave., Paterson, N.J.—A.G.I.J.L.P.R.S
 Oxford Electric Corp., 3911 S. Michigan Ave., Chicago 15, Ill.—O
 Paramount Paper Tube Corp., 616 S. Lafayette St., Ft. Wayne 2, Ind.—B
 Park Armature Co., 883 Boylston St., Boston 16, Mass.—A.J.L
 Peerless Electrical Products, Div. Altec Lansing Corp., 9356 Santa Monica Blvd., Beverly Hills, Calif.—R.S.T
 Peerless Products Industries, 812-14-16 North Pulaski Rd., Chicago 51, Ill.—B
 Penn-Tran Corp., P. O. Box 149, Bellefonte, Pa.—E.F.W
 Permoflux Corp., 4900 W. Grand Ave., Chicago 39, Ill.—J.O.T
 Peters Co., O. S., 1353 N.Y. Ave., N.E., Washington 2, D.C.—A
 Petroff, Peter A., 127 Water St., New York 5, N.Y.—C.D

Philadelphia Electronics Inc., 24 E. Coulter St., Philadelphia 44, Pa.—H.M.N
 PHILCO CORPORATION—Accessory Div., "A" & Allegheny Ave., Philadelphia 34, Pa.—A.D.E.F.H.Q.R.S.U
 Philmore Mfg. Co., 113 University Pl., New York 3, N.Y.—D
 Photocircuits Corp., New St., Glen Cove, N.Y.—C
 Pioneer Electronics Corp., 24 Saunders St., Salem, Mass.—A.F.M.R
 POLYTECHNIC RESEARCH & DEVELOPMENT CO., 202 Tillary Street, Brooklyn 1, N.Y.—S
 Power Transformer Co., 532 Hulberry St., Newark 5, N.J.—A.G.J.I.R.S
 Precise Measurements Co., 942 Kings Highway, Brooklyn 23, N.Y.—P
 PRECISION PAPER TUBE CO., 2035 W. Charleston St., Chicago 47, Ill.—B
 Price Electric Corp., Frederick, Md.—L
 Q. L. C. Corp., 10 Aubrey St., Summit, N.J.—A.D.H.M.R
 Quality Components, Inc., St. Marys, Pa.—B
 Quam-Nichols Co., 24 E. Marquette Blvd., Chicago 37, Ill.—Q
 Radio Coils, 1519 W. Devon Ave., Chicago 26, Ill.—A.D.F.H.L.M
 Radio Cores, Inc., 9540 Tulley Ave., Oaklawn, Ill.—A.B
 RADIO CORP. OF AMERICA, RCA Tube Dept., 415 S. 5 St., Harrison, N.J.—E.F.R.S
 Radio Industries, Inc., 5225 N. Ravenswood Ave., Chicago 40, Ill.—A.D.H.J.L.M.N.R.S.U
 Radio Music Corp., 84 S. Water St., Port Chester, N.Y.—A.K.L.O.S.T
 Radio TV Products Corp., Grass Lakes, Mich.—A.D.H.M
 Ram Electronics Inc., S. Buckout St., Irvington-On-Hudson, N.Y.—A.E.F.U
 Randall, Inc., Douglas, 102 High St., Westerly, R.I.—A.D.I.J.L.R.S
 RAYPAR INC., 7800 W. Addison St., Chicago 34, Ill.—A.F.H.P.R.S
 Redman Electronics Corp., 92 Prospect St., Thompsonville, Conn.—A.D.F.H.M.N
 Remco Mfg. Co., 545 N. LaSalle St., Chicago 10, Ill.—A.J
 Research Instrument Co., 233 Broadway, New York 7, N.Y.—A.P.R.S
 Resinite Corp., 20351 W. Charleston St., Chicago 47, Ill.—B
 Rhode Island Electronics Inc., Mill St., Lonsdale, R.I.—P
 Rich Electronics, Inc.—212 N.W. 8 Ave., Miami 36, Fla.—A.N
 Rola Co., 2530 Superior Ave., Cleveland 14, Ohio—E.F
 Rollins Corp., Lewes, Del.—L.S
 Ross Mfg. Co., 2405 Armitage Ave., Chicago, Ill.—A.D.E.H.M
 Rubicon Co., Ridge Ave. at 35th St., Philadelphia 32, Pa.—J.R
 Saratoga Industries, Ballston Ave., Saratoga Springs, N.Y.—A.P.R.S
 Scientific Assembly Co., 65 Hope St., Brooklyn 11, N.Y.—A.H.M
 Scientific Coil Co., 5619 Broadway, Chicago 40, Ill.—A.D.F.H.M
 SCINTILLA MAGNETO DIV., BENDIX AVIATION CORP., Sidney, N.Y.—I
 Sealtron Co., 9701 Reading Rd., Cincinnati 15, Ohio—A.B.D.H.K.L.M
 Setco Div., Stromberg-Carlson, 3127 Holmes St., Dallas 15, Tex.—P
 Sickles Div., F.W., General Instrument Corp., P. O. Box 330, Chicopee, Mass.—A.D.E.F.H.M.P.R.S
 Sightmaster Corp., 111 Cedar St., New Rochelle, N.Y.—L
 Silver Bay Equip Co., 5004 20th NW, Seattle 7, Wash.—M.N
 Skysweeper Inc., Johnsburgh, Ill.—Q.U
 Smith Mfg. Co., Nathan R., 105 Pasadena Ave., S. Pasadena, Calif.—A.B.I.J.L
 Southwestern Industrial Electronics Co., 2881 Post Oak Rd., Houston, Texas—R.S
 Sparton Radio TV 2400 E. Ganson St., Jackson, Mich.—A.D.F.H.J.L.M.N.Q.R.S
 Specialties, Inc., Skunks Minery Rd., Syosset, L.I., N.Y.—A.P.R.S
 SPEER RESISTOR DIV., SPEER CARBON CO., St. Marys, Pa.—H.M.U
 Spera Electronics Labs., 37-10 83 St., L.I.C., N.Y.—N
 Square Root Mfg. Corp., 391 Saw Mill River Rd., Yonkers, N.Y.—A.D.F.H.M.N.P.R.S.T
 Standard Coil Products Co., 2329 N. Pulaski Rd., Chicago 39, Ill.—A.D.E.F.G.H.I.J.K.M.N.P.R.S
 Standard Electrical Products Co., 2240 E. 3 St., Dayton 3, Ohio—J.L
 STANDARD ELECTRONICS RESEARCH CORP., 2 East End Ave., New York 21, N.Y.—P
 Standard Winding Co., 44 Johns St., Newburgh, N.Y.—A.F.H.M.N
 Stanwyck Winding Co., P. O. Box 70, Newburgh, N.Y.—D.F.H.K.M.N.R.S
 Sterling Mfg. Co., 7201 Wentworth Ave., Cleveland 2, Ohio—A
 Sterling Transformer Corp., 297 N. 7th St., Brooklyn 11, N.Y.—A.F.R.S
 Stevens Mfg. Co., Geo., 6022 N. Rogers Ave., Chicago 30, Ill.—C
 STUPAKOFF CERAMIC & MFG. CO., Latrobe, Pa.—B
 Summit Coil Co., 4 Claremont Rd., Bernardsville, N.J.—A.D.H.M.N

Suprex Electronics Corp., 23 Atherton St.,
Yonkers, N.Y.—A,B,D,H,M,R
Syntronic Instruments, Inc., 100 Industrial
Rd., Addison, Ill.—E,F,Q
Tartak Electronics, 2979 N. Ontario St., Bur-
bank, Calif.—A,J,Q,R,S,T
Taylor Fibre Co., Norristown, Pa.—B
Technical Material Corp., 700 Fenimore Rd.,
Mamaroneck, N.Y.—M,N,P
Teleton Co., 4019 Prospect Ave., Cleveland
3, Ohio—A,E,F,U
Telex, Inc., 1633 Eustis St., St. Paul 1, Minn.
—A,B
TEL-RAD MFG. CO., 7 Madison St. Fenni-
more, Wisc.—E,Q
TEXAS INSTRUMENTS INC., 6000 Lemmon
Ave., Dallas 9, Texas—A,H,M,N,P,R,S
Thermador Electrical Mfg. Co., Electronics
Div., 2000 S. Camfield Ave., Los Angeles
22, Calif.—S
Thompson Clock Co., H.C., 38 Federal St.,
Bristol, Conn.—A,B,F,L,R,S
THOR CERAMICS, INC., 225 Belleville Ave.,
Bloomfield, N.J.—B
Thor Transformer & Electronics, Inc., 750
San Antonio Road, Palo Alto, Calif.—A,D,
J,K,S
Titeflex, Inc., 500 Frelinghuysen Ave., Newark
5, N.J.—I
T. J. Mfg. Corp., 1020 S. Josephine St.,
Martinsville, Ind.—A, D, G, H, J, K, L, M,
N,Q,R
Todd-Tran Corp., 156 Gramatan Ave., Mount
Vernon, N.Y.—E,F
Torocil Co., 1374 Mobile Ct., St. Louis 10, Mo.
—P,R,S
Torwico Electronics, 967 Frelinghuysen Ave.,
Newark 5, N.J.—P,R,S
Transformer & Electronic Spec. Co., 3824
Terrace St., Philadelphia 28, Pa.—R,S
Transformer Mfrs. Inc., 850 W. Weed St.,
Chicago 22, Ill.—O,Q
Transformer Technicians, Inc., 2608 N. Cicero
Ave., Chicago 39, Ill.—A,J,L,R,S
Transformers Inc., 532 North St., Endicott,
N.Y.—A,P,R,S
Transvision, Inc., 460 North Ave., New Ro-
chelle, N.Y.—H
TRESKO, 3824 Terrace St., Philadelphia 28,
Pa. R,S
Triad Transformer Corp., 4055 Redwood Ave.,
Venice, Calif.—E,F,J,K,P,Q,R,S,T
Tri-Dex Co., P. O. Box 1207, Lindsay, Calif.—
A,D,H,J,K,L,M,P,R,S,V
TV Labs, Inc., 5045 W. Lake St., Chicago 44,
Ill.—A,E,J,O,P,Q
T V Products Corp., 907 E. 23 St., Paterson 3,
N.J.—F
Union Electric Products Co., 24 Edison Pl.,
Newark 2, N.J.—D,J,K,L,M,O,R,S
Union Spring & Mfg. Co., 1057 Summit Ave.,
Jersey City 7, N.J.—A,B,D,E,F,G,H,I,J,K,L,
M,N,P,Q,R,S
United Pressed Products Co., 741 W. Harrison
St., Chicago 7, Ill.—D,F,H,M,N
United Technical Labs., Morristown, N.J.—A
United Transformer Co., 150 Varick St., New
York 13, N.Y.—P
Universal Mfg. Co., 464 Hillside Ave., Hillside,
N.J.—P
Universal Winding Co., P.O. Box 1605, Providence
1, R.I.—C
Univox Corp., 102 Warren St., New York 7,
N.Y.—A,E
U. S. ELECTRONICS CORP., 275 Warren
St., Lyndhurst, N.J.—A,B,D,E,F,G,H,I,J,K,
L,M,N,O,P,Q,R,S,T,V
Utah Radio Products Co., 1123 E. Franklin St.,
Huntington, Ind.—I,J,O,R,S
Vanguard Electronics Co., 3384 Motor Ave.,
Los Angeles 34, Calif.—A,D,F,H,M,N
Varo Mfg. Co., 1801 Walnut St., Garland,
Tex.—A,J,P,R,S
VECTRON, INC., 400 Main St., Waltham 54,
Mass.—A,P
Victory Mfg. Co., 1722 W. Arcade Pl., Chi-
cago 12, Ill.—B
Vidaire Electronics Mfg. Co., 576 W. Merrick
Rd., Lynbrook, L.I., N.Y.—A,D,M
Vidocraft Mfg. Co., 5720 W. Armitage Ave.,
Chicago 39, Ill.—E
Voker Corp., Dexter, Mich.—A,F,H,J,L,M,N,
Q,T
WARREN PLASTICS CORP., Warren, Pa.—
B,K
Welch Electric Co., 1221 Wade St., Cincin-
nati 14, Ohio—A,K,L,R,S
West Coast Electronics Co., 5873 W. Jefferson
Blvd., Los Angeles 16, Calif.—A,D,M
Westinghouse Electric Corp., Box 868, Pitts-
burgh 30, Pa.—R,S
Weymouth Instrument Co., 1440 Commercial
St., East Weymouth 89, Mass.—B,C,J
Wheeler Insulated Wire Co., 150 E. Aurora
St., Waterbury, Conn.—A,I,J,L,R,S
White Industries Inc., 421 W. 54 St., New
York 19, N.Y.—A,D,H,M
Wilco Corp., 546 Drover St., Indianapolis 21,
Ind.—D,M,N
Wilcox Research Co., 11122 Aqua Vista St.,
N. Hollywood, Calif.—D,H,I,M,N,V
Wilmar Mfg. Co., 2715 E. 14th St., Kansas
City 27, Mo.—A,D,H
Wirt Co., 5221 Greene St., Philadelphia 44,
Pa.—A,D,H,M,N,R,S

20—COMMUNICATION SYSTEMS

Aircraft A
Airport traffic control B
Carrier current C
Civil defense Q
Commercial D
Facsimile E
Induction F
Intercom R
Marine G
Microwave H
Multiplex O
Portable I
Railroad J
Single sideband P
Speech scrambling K
Telemetry L
Telephone S
Teletypewriter M
Vehicular N

Acme Telectronix, Div., NEA Service 1200
W. 3rd St., Cleveland 13, Ohio—F
Adler Communications Labs., 1 Le Fevre
Lane, New Rochelle, N.Y.—B,H,I,N
Aeronautical Communications Equip., Inc.,
3090 Douglas Rd., Miami 33, Fla.—A
Aeronautical Electronics, Raleigh-Durham
Airport, Box 6043, Raleigh, N.C.—A,B,Q
Aeronautical Radio Mfg. Co., 155 1st St., Mine-
ola, N.Y.—A,G,S
Air Associates, Teterboro, N.J.—A,B,C,E,G,I,
M,N
Aircraft Armaments, 4415 Reistertown Rd.,
Baltimore 15, Md.—L
AIRCRAFT RADIO CORP., Box 150, Beonton
N.J.—A
Airelectron Inc., 295 Bloomfield Ave., Cald-
well, N.J.—C
Alfax Paper & Eng'g. Co., Washington St.,
Westboro, Mass.—E
Allied Eng'g. Div., Allied Intl. Inc., 230 Park
Ave., New York 17, N.Y.—A,G,I,N
American Communications Corp., 306 Broad-
way, New York 7, N.Y.—C,D
American Electroengineering Corp., 2040 Colo.
Ave., Santa Monica, Calif.—B,D,I,N
American Measuring Instruments Corp.,
21-25 44 Ave., Long Island City 1, N.Y.—
E,M
American Radio Co., 445 Park Ave., New
York 22, N.Y.—A,B,H,M,P
Applied Electro Mechanics Inc., National
Airport, Washington 1, D.C.—A
Applied Science Corp. of Princeton, P. O.
Box 44, Princeton, N.J.—L
A.R.F. Products, Inc., 7627 Lake St., River
Forest, Ill.—I,N,O
Atlas Precision Products Co., 3801 Castor Ave.,
Philadelphia 24, Pa.—A,N
Audio Products Corp., 2265 Westwood Blvd.,
Los Angeles 64, Calif.—L
Audio-Tone Oscillator Co., 6511 Main St.,
Long Hill, Conn.—I
Austin Co., 76 9 Ave., New York 11, N.Y.—L
Automatic Electric Co., 1033 W. Van Buren
St., Chicago 7, Ill.—R
Avionex Electronics Corp., 2838 North Na-
omi Street, Burbank, Calif.—A,B,C,G
Babcock Radio Eng'g. Inc., 7942 Woodley Ave.,
Van Nuys, Calif.—D
Bailey Corp., Arnold, Amoskeag Bank Bldg.,
Manchester, N.H.—G,N,Q
Barker & Williamson, Inc., 237 Fairfield Ave.,
Upper Darby, Pa.—C,D,I,K,M,N
Bassett, Inc., Rex, 1314 N.E. 17 Court, Fort
Lauderdale, Fla.—A,B,D,G,I,N,Q
Beam Instruments Corp., 350 5th Ave., New
York 1, N.Y.—B,H
Bell Aircraft Corp., Buffalo 5, N.Y.—A
Bell Sound Systems, 555 Marion Rd., Columbus
7, Ohio—R
BENDIX AVIATION CORP., 11600 Sherman
Way, N. Hollywood, Calif.—I
BENDIX RADIO, Div. Bendix Aviation
Corp., Baltimore 4, Md.—A,B,J,N,Q
Berzer Communications, 109-01 72 Rd., Forest
Hills, L.I., N.Y.—A,D,I
Bliss Electronic Corp., Box 123, Sussex,
N.J.—R,S
Bogen Co., David, 29 9th Ave., New York 14,
N.Y.—R
Brelco Electronics Corp., 55 Vandam St., New
York 13, N.Y.—G
Bristol Co., Waterbury 20, Conn.—L
Budelman Radio Corp., 375 Fairfield Ave.,
Stamford, Conn.—C,D,H,L,M,O
Bunnell & Co., J.H., 81 Prospect St., Brooklyn
1, N.Y.—C,E,J,M
Central Electronics Inc., 1247 W. Belmont
Ave., Chicago 13, Ill.—P
Century Electronics, Div. Century Metalcraft
Corp., 14806 Oxnard, Van Nuys, Calif.—H
C.G.S. Labs., Inc., 891 Ludlow St., Stamford,
Conn.—H
Code typer Laboratories, 550 Fifth Ave., New
York 19, N.Y.—M
COLLINS RADIO CO., Cedar Rapids, Ia.—
H,O,P

Colortone Electronics, 238 William St., New
York 38, N.Y.—R
COMMUNICATION ACCESSORIES CO.,
Hickman Mills, Mo.—C,M,O,P
Communication Devices Co., 2331 12 Ave., New
York 27, N.Y.—A,B,D,I,K,N
Communications Co., 300 Greco Ave., Cora-
nelles, Fla.—A,B,D,G,I,N,Q
Conn. Telephone & Electric Co., 70 Britanni-
St., Meriden, Conn.—A,D,H,J,N,Q,R
Consolidated Productions, Inc., Building
Broward International Airport, Ft. Lau-
derdale, Fla.—A,D,G,L,R
Continental Electronics Ltd., 302 Oakland St.
Brooklyn 22, N.Y.—M
Control Corp., 718 Central Ave., Minneapolis
14, Minn.—C,L
Cooper Electronics Products Co., 4500 Mar-
rose St., Philadelphia 24, Pa.—R
Cubic Corp., 2841 Canon St., San Diego 4,
Calif.—H
DAGE ELECTRIC, INC., 1 N. 2nd Ave.,
Reech Grove, Ind.—I
Dalmotron Co., 534 Laurel St., San Carlos,
Calif.—R
Davies Labs., Inc., 4705 Queensbury Rd.,
Riverdale, Md.—L
Dayton Aviation Radio & Equip. Corp.,
RR 3, Troy, Ohio—A
Dictograph Products Inc., 95-25 149th St.,
Jamaica 35, N.Y.—D,R
Dean Electronics, 35 5th Ave., B'klyn, N.Y.—I
Dollar Co., Robert, Communications Equip-
ment Div., 50 Drumm St., San Francisco, Calif.—M
Dukane Corp., 305 No. 11th St., St. Charles,
Ill.—R
DUMONT LABS., INC., Allen B., TV Trans-
mitter Dept., Mobile, Conn. Dept., 1500
Main St., Clifton, N.J.—I,N,Q
Eldico of N.Y., Inc., 70-72 E. Second St.,
Mineola, L.I., N.Y.—A,B,D,G,H,K,L,N,P,Q
ELECTRICAL TOWER SERVICE, 206 S.
Washington St., Peoria 2, Ill.—H
Electro-Mechanical Research, Inc., 64 Main
St., Ridgefield, Conn.—L
Electronic Eng'g. Co., 362 W. Bowery St., Ak-
ron 7, Ohio—N
Electronic Research Co., 11550 39 St., N. E.,
Seattle 55, Wash.—N
Electro-Sound Corp., 115 Halleck St., Boston,
Mass.—D,I,R
Electro Vision Lab., 4227 Francis Lewis Blvd.,
Bayside 61, N.Y.—L
Elk Electronic Labs, Inc., 333 W. 52nd St.,
New York 19, N.Y.—R
Elm Labs., 18 S. Broadway, Dobbs Ferry, N.Y.
—R
El-Tronics, Inc., 5th & Noble Sts., Phila. 23, Pa.
—B,E,I,L,M,Q,R
Ereco Radio Labs., Stewart Ave., Garden City,
N.Y.—A,B,D,G,M,N,Q
Espy Mfg. Co., 528 E. 72nd St., New York 21,
N.Y.—L
Executive Inc., 415 Lexington Ave., New York
17, N.Y.—R
Farmers Eng'g. & Mfg. Co., Irwin, Pa.—C,D
FEDERAL TELECOMMUNICATION LABS.,
500 Washington Place, Nutley, N.J.—C,D
FEDERAL TELEPHONE & RADIO CO.,
DIV. I. T. & T., 100 Kingsland Rd., Clifton,
N.J.—A,B,D,H,J,N,O
Feiler Eng'g. & Mfg. Co., 8026 N. Monticello
Ave., Skokie, Ill.—C,D,I,J,N
Freed Electronics & Controls Corp., 200 Hud-
son St., New York 13, N.Y.—A,B,C,D,H,I,L,N
GAIARRAITH & SON ELECTRIC CORP.,
450 Sixth Ave., New York, N.Y.—G,J,R
Garod Radio Corp., 70 Washington St.,
Brooklyn 1, N.Y.—A,B
GATES RADIO CO., 123 Hampshire St.,
Quincy, Ill.—D,P,Q
General Communications Ft. Atkinson, Wis-
consin—S
General Devices, Inc., P.O. Box 253, Princet-
on, N.J.—I
GENERAL ELECTRIC CO., Apparatus Div.,
1 River Rd., Schenectady 5, N.Y.—C
GENERAL ELECTRIC CO., Electronics Div.,
Syracuse, N.Y.—C,D,G,H,I,J,L,N,O,Q
General Hermetic Sealing Corp., 99 E. Hav-
thorne Ave., Valley Stream, N.Y.—R
General Railway Signal, 801 West St., Re-
chester 2, N.Y.—A,G,J
G & M Equip. Co., 7315 Varna Ave., N. Holl-
wood, Calif.—A,B,G,M,Q
Godfrey Mfg. Co., 2642 S. Michigan Ave.,
Chicago 16, Ill.—R
Gonset Co., 801 South Main St., Burbank,
Calif.—A,B,D,N,Q
GRAYBAR ELECTRIC CO., 420 Lexington
Ave., New York 17, N.Y.—D,H,J,R
Hallcrafters Co., 4401 W. 5 Ave., Chicago 26,
Ill.—D,I,J,M
Hamlyn Electronics Corp., 32 Holman Blvd.,
Hicksville, N.Y.—A,B,D,G,Q,R
Harmon Electronics Co., 11431 Truman Rd.,
Independence, Mo.—C,D,F,I,J,L,M,N
Harve-Wells Electronics, North St., South-
bridge, Mass.—D,I,N
Hogan Labs., Inc., 155 Perry St., New York
14, N.Y.—E
Hudson American Corp., 25 W. 43 St., New
York, N.Y.—G
Industrial Radio Corp., 428 N. Parkside
Ave., Chicago 44, Ill.—I,Q
INSULATED CIRCUITS, INC., 115 Root-
velt Ave., Belleville, N.J.—H
International Business Machines Corp., 500
Madison Ave., New York 22, N.Y.—C,I

T.L. RESEARCH ASSOCIATES, 2221 Warwick Ave., Santa Monica, Calif.—A.D.L
 anhoe Electronics Labs., 14238 S. LaSalle St., Chicago 27, Ill.—N
 avia Electronics Corp., 6058 W. Fullerton Ave., Chicago 39, Ill.—A
 erson Ray, 40 E. Merrick Rd., Freeport, N.Y.—G
 HNSON CO., E. F. Waseca, Minn.—N
 ar Eng'g. Corp., 2995 Middlefield Rd., Palo Alto, Calif.—B,D,G,I,N,Q
 hn Research Laboratories, 22 Pine St., Freeport, N.Y.—O,P
 ne Electronics Corp., 81 Willoughby St., Brooklyn 1, N.Y.—A,D
 LLOGG SWITCHBOARD & SUPPLY CO., 79 W. Monroe St., Chicago 3, Ill.—D,Q,R
 netix Inst. Co., 402 Broadway, New York 10, N.Y.—L
 rby Products Corp., 175 Fifth Ave., New York 10, N.Y.—R
 ibernetics Corp., 1100 Raymond Blvd., Newark 5, N.J.—E,I
 ne Electronics Co., 7254 Atoll Ave., N. Hollywood, Calif.—A,G
 avoie Labs., Inc., Morganville, N.J.—I,N
 ear, Inc., 11916 W. Pico Blvd., Los Angeles 44, Calif.—A,B,N,Q
 ankurt Electric Co., 1105 County Rd., San Carlos, Calif.—C,H,O
 onard Electric Products Co., Inc., 67 34 St., Brooklyn 32, N.Y.—H
 ank Radio Corp., 152 W. 17 St., New York 11, N.Y.—D,G,I,J,N,Q
 ange Sound Engrs., J. M., 2171 W. Washington Blvd., Los Angeles 18, Calif.—R
 ynch Carrier Systems, Inc., 96 Jessie St., San Francisco 5, Calif.—C,K,L,M,O,P
 lasco Mfg., 1401 Clinton, Hoboken, N.J.—G,N
 MAGNAVOX CO., Fort Wayne 4, Ind.—R
 Magnetic Instrument Co., 82 Main St., W. Orange, N.J.—C,H
 Marine View Electronics, 744 E. 138 St., New York 54, N.Y.—R
 Maxson Corp., W.L., 460 W. 34th St., New York 1, N.Y.—H,L
 MELPAR, INC., 452 Swann Ave., Alexandria, Va.—E,H,I,J,K,L,O
 Metrotype Corp., 525 W. 76, Chicago, Ill.—I
 Michigan Electronics Inc., 854 N. Rockwell St., Chicago 22, Ill.—D,F
 Mitchell Industries, Box 17, Mineral Wells, Texas—A
 Molded Insulation Co., 335 E. Price St., Philadelphia 44, Pa.—A,M
 Morrow Radio Mfg. Co., 2794 Market St., Salem, Ore.—I,N
 Motorola Inc., 4545 W. Augusta Blvd., Chicago, Ill.—C,H,I,J,N,O,Q
 Munston Mfg. & Service Inc., Beech St., Islip, N.Y.—A,B,G,R
 MYCALEX CORP. OF AMERICA, 125 Clifton Blvd., Clifton, N.J.—L
 Nassau Research & Development Associates 65 Main St., Mineola, N.Y.—H
 NATIONAL CO., 61 Sherman St., Malden, Mass.—M
 National Aeronautical Corp., 180 S. Main St., Ambler, Pa.—A
 Nestor Eng'g. Co., 24 Chestnut St., Rutherford, N.J.—J,M
 N American Aviation, 12214 Lakewood Blvd., Downey, Calif.—O
 Northern Radio Co., 147 W. 22 St., New York 11, N.Y.—E,M,O
 North Electric Mfg. Co., S. Market St., Galion, Ohio—B,C,D,L,Q,R
 Oberline Ltd., 6411 Hollywood Blvd., Hollywood 28, Calif.—C
 Orthon, 196 Albion Ave., Paterson, N.J.—B
 Obs Elevator Co., Electronic Div., 35 Ryerson St., Brooklyn 5, N.Y.—A,B,D,H,O,P,N
 Pacific Mercury TV Mfg. Co., 6955 Van Nuys Blvd., Van Nuys, Calif.—A,D,L,N,P,Q
 Penn Industrial Instrument Corp., 4110 Haverford Ave., Phila. 4, Pa.—L
 Perco, Inc., 900 Kingston Rd., Baltimore 12, Md.—A,L,R
 PHILCO CORP., Gov't & Industrial Div., 4700 Wisahickon Ave., Phila. 44, Penn.—H,O
 Paetics & Electronics Co., Inc., 272 Northland Ave., Buffalo 8, N.Y.—I
 Patt, Albert, 1939 N. 18 St., Milwaukee 6, Wis.—N
 Pess Wireless Labs., Inc., 25 Prospect Pl., W. Newton 65, Mass.—D,E
 Radiophone Co., 600 E. Evergreen Ave., Munrovia, Calif.—G
 RADIO CORP. OF AMERICA, RCA Victor Div., Eng'g. Products Div., Camden 2, N.J.—A,B,D,E,H,J,N,Q,R
 RADIO ENG'G. LABS., 36-40 37 St., L.I.C. N.Y.—H,O
 Radio Frequency Labs., Inc., Boonton, N.J.—M
 Radio Mfg. Engineers, Inc., Div. Electro-Physics, Buchanan, Mich.—N
 Radiomarine Corp. of America, 75 Varick St., New York, N.Y.—G
 Radio Spec. Mfg. Co., 2023 S.E. 6 Ave., Portland 14, Ore.—I,N,Q
 Radiotron, Inc., Box Q, Melbourne, Fla.—L
 Railway Communications Inc., Raytown, Mo.—C,H,J,K,O,P
 Roland-Borg Corp., 3515 W. Addison St., Chicago 18, Ill.—R
 Rovox Mfg. Co., 902 Albemarle, Brooklyn 8, N.Y.—R

RAYTHEON MFG. CO., Waltham 54, Mass.—H
 Remco Mfg. Co., 545 N. La Salle St., Chicago 10, Ill.—D,L
 Remler Co., 2101 Bryant St., San Francisco 10, Calif.—A,B,F,G,I,J,N,Q,R
 Resdel Eng'r., 2351 Riverside Dr., Los Angeles 39, Calif.—A,H,L,N
 Rich Electronics, Inc., 212 N.W. 8 Ave., Miami 36, Fla.—G
 Roesch Co., D. J., 2200 S. Figueroa St., Los Angeles 7, Calif.—D
 Rosen Eng'g. Products, Inc., Raymond 82nd & Walnut Sts., Phila. 4, Pa.—H,J,L,N
 Rowe Industries, 1702 Wayne St., Toledo 9, Ohio—A
 RUST INDUSTRIAL CO., 608 Willow St., Manchester, N.H.—L
 Sanders Associates, Inc., 137 Canal St., Nashua, N.H.—H
 Scantlin Electronics, J. R., 145 W. Hazel St., Los Angeles 24, Calif.—I
 Schuttig & Co., 9th & Kearny Sts., N.E., Washington 17, D.C.—B
 Selectar Industries, Inc., 3100 Ocean Parkway, Brooklyn 35, N.Y.—H
 Servo Corp. of America, 20-20 Jericho Turnpike, New Hyde Park, N.Y.—B,D
 Setco Div., Stromberg-Carlson, 3127 Holmes St., Dallas 15, Texas—C,O,M,P
 Shepard Labs., 480 Morris Ave., Summit, N.J.—L,M
 Signal Equipment Co., 2706 3 Ave., Seattle 1, Wash.—R
 Silver Bay Equip. Co., 5004 20th NW Seattle 7, Wash.—G
 Simpson Mfg. Co., Mark, 32-28 49 St., Long Island City, N.Y.—A,G
 Slate & Associates, Claude C., 11370 W. Olympic Blvd., Los Angeles 64, Calif.—D,G,I,N,Q
 Smith-Meeker Eng'g. Co., 157 Chambers St., New York 7, N.Y.—A
 Sonar Radio Corp., 3050 W. 21 St., Brooklyn 24, N.Y.—A,B,D,G,I,N,Q
 Southern Electric & Transmission Co., 3127 Holmes St., Dallas, Texas—C,H,L,M
 Spartan Radio TV, 2400 E. Ganson St., Jackson, Mich.—L
 Spera Electronics Labs., 37-10 33rd St., Long Island City, N.Y.—A,G
 Square Root Mfg. Corp., 391 Saw Mill River Rd., Yonkers 2, N.Y.—R
 STANDARD ELECTRONICS CORP., 285 Emmet St., Newark 5, N.J.—G
 Stelma, Inc., 389 Ludlow St., Stamford, Conn. J.M
 Stromberg-Carlson Co., Rochester 3, N.Y.—H,R
 Technical Materiel Corp., 700 Fenimore Rd., Mamaroneck, N.Y.—M,N
 Tele-Beam Industries, 6th & Soscol Ave., Napa, Calif.—A
 Tele-Broadcasters Inc., 158 E. 56 St., New York, N.Y.—A,C,D,H,L,N,O,P,Q
 Telecom, Inc., 1019 Admiral Blvd., Kansas City 6, Mo.—Q,R
 Telemarine Communications Co., 3040 W. 21 St., Brooklyn 24, N.Y.—A,B,D,G,N
 Telemetering Associates, 4940 Pine Forest Dr., Marietta, Ga.—L
 Telephonics Corp., Park Ave., Huntington, N.Y.—A,G,Q,R
 TEL-INSTRUMENT CO., 728 Garden St., Carlstadt, N.J.—O
 TEXAS INSTRUMENTS INC., 6000 Lemmon Ave., Dallas 9, Tex.—H,I
 Times Facsimile Corp., 540 W. 68th St., New York 19, N.Y.—E
 Transiron, Inc., 154 Spring St., New York 12, N.Y.—A,G,N
 Transmitter Equipment Mfg. Co., 35 Ryerson St., Brooklyn 5, N.Y.—A,B,D,H,O,P,N
 Union Switch & Signal-Div. Westinghouse Air Brake Co., 1789 Braddock Ave., Pittsburgh 18, Pa.—C,J,O
 U.S. Testing Co., 1415 Park Ave., Hoboken, N.J.—A,C,D,G,I,N,Q,R
 U.S. Tower Co., 219 Union Trust Bldg., Petersburg, Va.—H
 VARIAN ASSOCIATES, 611 Hansen Way, Palo Alto, Calif.—H
 Vocaline Co. of America Inc., Coulter St., Old Saybrook, Conn.—C,G,R
 Webster Electric Co., 1900 Clark St., Racine, Wis.—C,R
 Welch Electric Co., 1221 Wade St., Cincinnati 14, Ohio—R
 West Coast Electronics Co., 5873 W. Jefferson Blvd., Los Angeles 16, Calif.—D,J,N
 Western Mfg. Co., 1400 W. 22 St., Kearney, Nebr.—B,C,F,H,I,N
 Western Sound & Electric Lab., 805 S. 5 St., Milwaukee 4, Wis.—I
 WESTINGHOUSE ELECTRIC CORP., 2519 Wilkens Ave., Baltimore 3, Md.—C,H,J
 Westrex Corp., 111 3 Ave., New York 11, N.Y.—K,M
 Weymouth Instrument Co., 1440 Commercial St., East Weymouth 89, Mass.—H
 Wheeler Insulated Wire Co., 150 E. Aurora St., Waterbury, Conn.—D,R
 White Industries, 421 W. 54 St., New York 19, N.Y.—A
 Wickes Eng'g. & Const. Co., 12 St. & Ferry Ave., Camden, N.J.—B

Wilcox Electric Co., 1400 Chestnut St., Kansas City 1, Mo.—A,B,D,M,Q
 Wilmar Mfg. Co., 2715 E. 14th St., Kansas City 27, Mo.—G,I
 Wunderlich Radio Co., 2-5th Ave., New York 11, N.Y.—A,D,G,I,L,M,N,P

21—COMPUTERS

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 Aurex Corp., 1117 N. Franklin St., Chicago 11, Ill.—F
 Austin Co., 76 9th Ave., New York 11, N.Y.—A,B,C,D,E,G,H,I,J,K,L
 Authorized Mfrs. Service Co., 919 Wyckoff Ave., Brooklyn 27, N.Y.—F,I,Q
 Avion Instrument Corp., 299 State Highway 17, Paramus, N.J.—A,C,D,F,H,I,J,K
 Bebeck Instrument Corp., 111-01 14th Ave., College Point 56, N.Y.—A,C,D,E,H,I,J
 BENDIX AVIATION CORP., Pacific Div., 11600 Sherman Way, N. Hollywood, Calif.—L
 Benson-Lehner Corp., 2340 Sawtelle Blvd., Los Angeles 64, Calif.—D,E,G,H
 BERKELEY SCIENTIFIC DIV. BECKMAN INSTRUMENTS, INC., 2200 Wright Ave., Richmond, Calif.—A,B,C,G,I,J,K,L
 Boeing Airplane Co., P. O. Box 3107 Seattle 14, Wash.—A
 BURROUGHS CORP., Electronic Instruments Div., 1209 Vine St., Philadelphia 7, Pa.—B,G,H,I,L,Q
 Capehart-Farnsworth Div. I.T.&T., Ft. Wayne, Ind.—A,Q
 Century Geophysical Corp., 1333 N. Utica, Tulsa, Okla.—J
 Cima Corp., 119 Braintree St., Allston, Mass.—I
 CINEMA ENG'G. CO., Division Aerovox Corp., 1100 Chestnut St., Burbank, Calif.—I
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 Codetyping Labs., 650 6th Ave., New York 19, N.Y.—C,I

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Consolidated Eng'g. Corp., 300 N. Sierra Madre Villa, Pasadena 15, Calif.—A,B,C,F, G,H,I,J,K,L,Q
Consolidated Productions, Inc., Bldg. 9 Broward International Airport Ft. Lauderdale, Fla.—H,I
Control Electronics Co., 1925 New York Ave., Huntington Station, N.Y.—I
Curtis Wright Corp., 631 Central Ave., Carlstadt, N.J.—A
Davies Labs., Inc., 4705 Queensbury Rd., Riverdale, Md.—A,C,G
Demco Products, P.O. Box 5042, Philadelphia 11, Pa.—I,Q
Detectron Co., 5631 Cahuenga Blvd., N. Hollywood, Calif.—C
Digital Instrument Co., 212 Almeria Ave., P.O. Box 1345, Coral Gables, Fla.—B,C
Digital Products, Inc., 7643 Fay Ave., LaJolla, Calif.—B,C,F,H,I
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Electronic Computer Corp., 265 Butler St., Brooklyn 17, N.Y.—B,H
Electronic Control Systems, 2138 Westwood Blvd., Los Angeles 25, Calif.—A,B,C,D,E, F,G,H,I,J,K,L,N,Q
El-Tronics, Inc., 437 N. 5 St., Philadelphia 23, Pa.—I
Electrotech Corp., 15601 Arrow Hwy., Azusa, Calif.—C
Eng'g. Research Associates, Div. Remington Rand Inc., 1902 W. Minnehaha Ave., St. Paul 4, Minn.—B,C,D,E,F,G,H,I,J,K,L,O,P,Q
Epsco, Inc., 126 Mass. Ave., Boston 15, Mass.—B,D,E,G,H,I,K,L,N,Q
Eric Resistor Corp., 644 W. 12th St., Erie, Pa.—I
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GENERAL ELECTRIC CO., Apparatus Div., 1 River Rd., Schenectady 5, N.Y.—A
General Magnetics, Inc., 135 Bloomfield Ave., Bloomfield, N.J.—A
Genisco, Inc., 2233 Federal Ave., Los Angeles 64, Calif.—G
GIANNINI & CO., G. M., 914 E. Green St., Pasadena 1, Calif.—G,I,K
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Hamlyn Electronics Corp., 32 Helman Blvd., Hicksville, N.Y.—H,I
Hanson-Gorrill-Biran, One Continental Hill, Glen Cove, N.Y.—C,G,H,I,J,K,L
Hysland Research Corp., 130 E. 5th Ave., Denver, Colo.—J
HELIPOT CORP., Div. Beckman Instruments Inc., 916 Meridian Ave., S. Pasadena, Calif.—G,I
Hogan Labs., Inc., 155 Perry St., New York 14, N.Y.—B,C,F,H,I,K,Q
Hufford Machine Works, 2201 Carmelina, Los Angeles, Calif.—H,I,S
HUGHES AIRCRAFT, Culver City, Cal.—A, B,H
Industrial Control Co., Straight Path & Arlington Ave., Wyandanch, N.Y.—A
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Kearfitt Co., 1378 Main Ave., Clifton, N.J.—G,I,L,M
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Kings Electronics Co., 40 Marbledale Rd., Tuckahoe, N.Y.—I
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Kylbernetes Corp., 1190 Raymond Blvd., Newark 5, N.J.—D,H
Laboratory for Electronics, 75 Pitta St., Boston, Mass.—A,B,C,F,G,H,J,K,L,Q
Land-Air, Inc., 201 N. Wells St., Chicago 6, Ill.—C,F
Lane Electronics Co., 7254 Atoll Ave., N. Hollywood, Calif.—I
LIRASCOPE INC., 1607 Flower St., Glendale 1, Calif.—A,B,C,D,E,F,G,H,I,J,K,L,Q
Link Aviation, Inc., Binghamton, N.Y.—A,C, H,I
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MacDonald, Co., W. S., 33 University Rd., Cambridge 38, Mass.—B,C,F,K,S
Mackenzie Products Co., 141 Brewery St., New Haven 11, Conn.—F
Magnavox Co., Ft. Wayne 4, Ind.—A,B,C,G, H,I,L
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Magnetic Amplifiers, Inc., 632 Tinton Ave., New York 55, N.Y.—Q
Magnetic Metals Co., Hayes Ave., at 21st St., Camden 1, N.J.—I
Magnetics Research Co., 142 King St., Chappaqua, N.Y.—H,I,Q
MAGNETICS, INC. Box 230-T, Butler, Pa.—Q
Magne Corp., 90-28 Van Wyck Expressway, Jamaica 18, N.Y.—A,B,C,D,E
Marchant Research, Inc., 1475 Powell St., Oakland 8, Calif.—B,C,D,E,F,G,H,I,K,Q
Masco Products Co., 2119 S. Sepulveda Blvd., Los Angeles 25, Calif.—I
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Miller Instruments, Inc., Wm., 325 N. Halstead Ave., Pasadena 8, Calif.—A,I
Minnesota Electronics Corp., 1058 University Ave., St. Paul 4, Minn.—B,C,G,H,L,L,Q
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Mountain Systems Inc., 54 Lake St., White Plains, N.Y.—B,C,D,E,F,H,I,Q
Multi-Tron Lab., 4624 Washington Blvd., Chicago 44, Ill.—C
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Otis Elevator Co., Electronic Div., 35 Ryerson St., Brooklyn 5, N.Y.—A,C,R
Pacific Mercury TV Mfg., 5955 Van Nuys Blvd., Van Nuys, Calif.—G,I
Pantek Co., Box 212, El Segundo, Calif.—I
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Radiation Counter Labs, Inc., 5122 W. Grove St., Skokie, Ill.—B
Radio Condenser Corp., Copewood & Davis Sts., Camden, N.J.—I
RADIO CORP. OF AMERICA, Eng'g Products Div., Camden, N.J.—C
Rawson Electrical Instrument Co., 117 Potter St., Cambridge 42, Mass.—I
Resdel Eng'r., 2351 Riverside Dr., Los Angeles 39, Calif.—C
Reeves Instrument Corp., 215 E. 91 St., New York, N.Y.—A
Rich-Roth Labs., 1240 Main St., Hartford 3 Conn.—A,C
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Sanders Associates, Inc., 137 Canal St., Nashua, N.H.—I
Seay Instrument Co., 6521 N. Lamar Blvd., Austin 5, Texas—A,C
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Signalite Inc., 37-41 Neptune Hwy., Neptune, N.J.—I
Sorban Eng'g. Inc., Box 117, Melbourne, Fla.—B,C,D,E,H,I,K,N,O
Special Instruments Lab., Inc., 312 W. Vine St., Knoxville, Tenn.—K
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Standard Coil Products Co., 2329 N. Pulaski Rd., Chicago 39, Ill.—A,B,C
Stavid Eng'g. Inc., 312 Park Ave., Plainfield, N.J.—B,C,G,K,L
Streeter-Amet Co., 4101 Ravenswood Ave., Chicago 13, Ill.—A,R,C,E,G,H,I,J,K
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Technitrol Eng'g. Co., 2751 N 4 St., Phila. 33 Pa.—C,N
Telecomputing Corp., 133 E. Santa Anita Ave., Burbank, Calif.—G,H,K
Teleregister Corp., 445 Fairfield Ave., Stamford, Conn.—B,C,G,H,K,L
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Tri-Dex Co., P.O. Box 1207, Lindsay, Calif.—I
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Underwood Corp., Electronic Computer Div., 35-10 36th Ave., Long Island City 6, N.Y.—B,C,F,H
VECTRON, INC., 400 Main St., Waltham 54, Mass.—A,B,C
Videon Electronic Corp., 902 E. Michigan St., Indianapolis 2, Ind.—A
Waldorf Instrument Corp., Park Ave., Huntington, N.Y.—J
Walkirt Co., 145 W. Hazel St., Inglewood 3, Calif.—C,D,E,I
Wang Laboratories, 296 Columbus Ave., Boston 16, Mass.—B,E
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B. Co., N. S., 1 Montgomery St., Hillside 5, N.J.—AB

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Carol Electronics Corp., 141 E. 25 St., New York 10, N.Y.—CH,Q

Carter Parts Co., 213 Institute Pl., Chicago 10, Ill.—F,G,M

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Century Lighting Inc., 521 W. 43rd St., New York 25, N.Y.—F,G,L,N,O

Cermasac Co., Box 25, New Lebanon Center, N.Y.—P

Chester-Morton Electronics Corp., 10 St. & Morton Ave., Chester, Pa.—D,J,L

Chicago Tool & Eng'g. Co., 8383 S. Chicago Ave., Chicago 17, Ill.—C

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Continental Connector Corp., 80-80 Northern Blvd., Long Island City 1, N.Y.—I,L,M,P

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DIALIGHT CORP., 60 Stewart Ave., Brooklyn 37, N.Y.—G

DIAMOND MFG. CO., 7 North Ave., Wakefield, Mass.—C,D,J,M,S,U,X

Digital Products, Inc., 7643 Fay Ave., LaJolla, Calif.—V

Dimco-Gray Co., 207 E. 6th St., Dayton 2, Ohio—AB,AC

Dorn Equip. Corp., 88 Broad St., Boston 10, Mass.—F,I,M,N,S,W,AB,AC

DUMONT LABS., INC., ALLEN B. TV Transmitter Dept., Mobile Comm. Dept., 1500 Main St., Clifton, N.J.—D,L,M

Eagle Electric Mfg. Co., 23-10 Bridge Plaza, S., Long Island City, N.Y.—M

EBY INC., H. H., 4700 Stenton Ave., Philadelphia 44, Pa.—B,E,F,K,M,Q,R,U,V,W,AB,AC

EITEL-McCULLOUGH, INC., 798 San Mateo Ave., San Bruno, Calif.—K

ELCO CORP., 190 W. Glenwood Ave., Philadelphia, Pa.—B,C,E,H,J,K,L,M,Q,U,V,X

Elcon Mfg. Co., E. Manchester Ave., Los Angeles 3, Calif.—CH

ELECTRICAL INDUSTRIES, DIV. AMPEREX ELECTRONIC CORP., 44 Summer Ave., Newark 4, N.J.—I,R,Z

Electrofilm Inc., 7116 Laurel Canyon Blvd., N. Hollywood, Calif.—C,H,P,S,Y,Z,AA

Electromatic Mfg. Corp., 88 University Pl., New York 3, N.Y.—Q

Electro Precision Products Inc., 139-30 34th Rd., Flushing 54, N.Y.—D,F,J,S,U,X

Electro Tec Corp., 10 Romanelli Ave., S. Hackensack, N.J.—U,X

Electro-Tech Equip. Co., 308 Canal St., New York, N.Y.—AB

Empire Electronics Co., 166 River St., Paterson 1, N.J.—D,L,O,P,AB,AC

Equip. & Service Co., 6815 Oriole Dr., Dallas 9, Tex.—H

Ericson Mfg. Co., 5209 Euclid Ave., Cleveland 3, Ohio—M

Eric Resistor Corp., 614 W. 12th St., Erie, Pa.—V

FAIRCHILD CAMERA & INSTRUMENT CORP., Robbins Lane, Syosset, N.Y.—C

Federal Screw Products Inc., 224 W. Huron St., Chicago 10, Ill.—P,AA,AB,AC

FEDERAL TELEPHONE & RADIO CO., DIV. I.T. & T., 100 Kingsland Rd., Clifton, N.J.—N

Fusite Corp., 6000 Fernview Ave., Cincinnati 13, Ohio—Z

GARDE MFG. CO., Providence 3, R.I.—I,P,R, S,U,X,Z,AB,AC

Gates Radio Co., 123 Hampshire St., Quincy, Ill.—J,N,R

GEE-LAR MFG. CO., 819 Elm St., Rockford, Ill.—B,D,E,F

General Cement Mfg. Co., 919 Taylor Ave., Rockford, Ill.—A,B,C,I,M,P,W,AA,AB,AC

GENERAL ELECTRIC CO., CONSTRUCTION MATERIALS DIV. 1285 Boston Ave., Bridgeport 2, Conn.—C,P

GENERAL ELECTRIC CO., Wiring Device Dept., 95 Hathaway St., Providence 7, R.I.—M,V

General Hermetic Sealing Corp., 99 E. Hawthorne Ave., Valley Stream, N.Y.—N,O,Z

General Products Corp., 107 Salem St., Union Springs, N.Y.—AB

GENERAL RADIO CO., 275 Mass. Ave., Cambridge 59, Mass.—C,D,J,L,M

GENERAL R-F FITTINGS CO., 702 Beacon St., Boston 15, Mass.—B,C,I,J

G. & M. Equipment Co., 7315 Varna Ave., North Hollywood, Calif.—O

Glass Solder Eng'g., 300 N. Lake Ave., Pasadena 3, Calif.—Z

GORN ELECTRONICS DIV., 845 Main St., Stamford, Conn.—D,H,I,Q,S,U,V

Gramer Mfg. Co., Wright St., Lynn, Mass.—D,J,M

Gulton Mfg. Corp., 212 Durham Ave., Metuchen, N.J.—D,U,X

Hall Inc., F. Sumner, Amityville, N.Y.—F,L, M,N,Q

Hallett Mfg. Co., 1601 W. Florence Ave., Inglewood, Calif.—D

Heldor Mfg. Corp., 238 Lewis St., Paterson, N.J.—O,P,R,Z,AA

Herlee Corp., 6th & Beech St., Crafton 1, Wisc.—V

Hermaseal Co., 1101 Lafayette St., Elkhart, Ind.—Z

Hermetite Corp., 702 Beacon St., Boston 15, Mass.—Z

HERMETIC SEAL PRODUCTS CO., 29 S. 6 St., Newark 7, N.J.—R,U,X,Z,AC

Heyman Mfg. Co., 600 Michigan Ave., Kenilworth, N.J.—AA

Hobson Bros., 4940 W. Lawrence Ave., Chicago 30, Ill.—A,K,S

Hopkins Eng'g. Co., 2082 Lincoln Ave., Altadena, Calif.—C,P

Hubbell Inc., Harvey, State St., & Bostwick Ave., Bridgeport, Conn.—E,M,V,W

Hughes & Phillips, 3300 N. San Fernando Blvd., Burbank, Calif.—O

Hydro Molding Co., 100 Sharron Ave., Plattsburg, N.Y.—Q,U

Ilco Copper Tube & Products, Inc., Cincinnati 27, Ohio—AA,AC

Industrial Devices, Edgewater, N.J.—J,P, AC

Industrial Hardware Mfg. Co., 109 Prince St., New York 12, N.Y.—A,C,E,M,P,W,AA,AB, AC

Industrial Products Co., Div. Danbury-Knudsen, Box 148, Danbury, Conn.—D,J,S

Industrial Television Inc., 369 Lexington Ave., Clifton, N.J.—B,R

Instrument Corp. of America, Box 217, Blacksburg, Va.—F,U

Instrument Specialties Co., 244 Bergen Blvd., Little Falls, N.J.—X

INSULATED CIRCUITS, INC., 115 Roosevelt Ave., Belleville, N.J.—V,AB,AC

Insulating Fabricators of N.E., 69 Grove St., Watertown 72, Mass.—AB,AC

Insuline Corp. of America, 186 Granite St., Manchester, N.H.—A,B,C,F,G,K,L,M,N,O, P,Q,T,U,W,AB,AC

Isolantite Mfg. Corp., Warren Ave., Stirling, N.J.—P,Z

Janco Corp., 3111 Winona Ave., Burbank, Calif.—B,P,L,O

JAN HARDWARE MFG. CO., 75 N. 11th St., Brooklyn 11, N.Y.—S

Javex, Box 646, Reilands, Calif.—B,C,M,R,T, Y,AA

Jerrold Electronics Corp., 25 & Dickinson Sts., Philadelphia 46, Pa.—B,D

J F D Mfg. Co., 6101 16 Ave., Brooklyn 4, N.Y.—B,D,E,J,M,W,Y

Jiffy Clip Mfg. Co., 128 Clinton Ave., Huntington, N.Y.—P

JOHNSON CO., E. F., Waseca, Minn.—F,K,M

Johns-Manville, 22 E. 40th St., New York 16, N.Y.—AB

JONES DIV., HOWARD B. CINCH MFG CORP., Chicago 24, Ill.—C,F,M

Joy Mfg. Co., Electrical Connector Div., 1201 Macklind Ave., St. Louis 10, Mo.—C,H,M

KELLOGG SWITCHBOARD & SUPPLY CO., 79 W. Monroe St., Chicago 3, Ill.—F,L,M, N,W,AC

Keystone Electronics Corp., 423 Broome St., New York 12, N.Y.—A,F,G,M,N,P

Kilgen Aircraft Div., Kilgen Organ Co., 4632 W. Florissant Ave., St. Louis, Mo.—T

LE-TECH & ELECTRONIC INDUSTRIES • June 1954

Kings Electronics Co., 40 Marbledale Rd., Tuckahoe, N.Y.—B,C,D,E,F,G,H,I,J,L,M,N, O,P,Q,R,S,T,U,W,X,Y,AB,AC
 Kings Microwave Co., 719 Main St., New Rochelle, N.Y.—B,D,J
 Kliegl Bros., 821 W. 50 St., New York 19, N.Y.—H,L,M
 Kolton Electric Mfg. Co., 123 N. J. R.R. Ave., Newark 5, N.J.—C,O,P,AA,AB
 Krueger & Hudepohl, 3rd & Vine Sts., Cincinnati 2, Ohio—C,H,AA
 Kulka Electric Mfg. Co., 638 S. Fulton Ave., Mt. Vernon, N.Y.—M,P
 Land-Air, Inc., 201 N. Wells St., Chicago 6, Ill.—B,D,M
 Larson Co., C. O., Ave. G & C & N. W. RR, Sterling, Ill.—B
 LEE ELECTRONIC IABS., 233 Dudley St., Boston 19, Mass.—U
 Lenkurt Electric Co., 1105 County Rd., San Carlos, Calif.—AB,AC
 Lieco, Inc., 147 Ocean Ave., Lynbrook, N.Y.—B,D,J
 Lindly & Co., 248 Herricks Rd., Mineola, L.I., N.Y.—B,C
 Liquidometer Corp., 41-03 36th St., Long Island City 1, N.Y.—D,X
 Littelfuse, Inc., 1865 Miner St., Des Plaines, Ill.—P,AB
 Long Inc., Thomas J., 215 Stonehenge Lane, Carle Place, Long Island, N.Y.—W,AB,AC
 Lunday Associates, 694 Main St., Waltham 54, Mass.—P,R,S,Z
 Lynn Electronic Research Co., 9 W. Magnolia Blvd., Burbank, Calif.—F,R
 Maccon Co., 2260 Motor Ave., Los Angeles 34, Calif.—C,E,G,H,I,L,M,Q,R,T,U,W
 Malco Tool & Mfg. Co., 4025 W. Lake St., Chicago 24, Ill.—F,AA
 MALLORY & CO., P. R., 3029 E. Washington St., Indianapolis 6, Ind.—F,G,M
 Mandex Mfg. Co., 2608 W. 16 St., Chicago 8, Ill.—A,B,E,G,K,P,Q,U,V,AB,AC
 Marathon Electric Mfg., Wausau, Wis.—AB,AC
 Marlin Electric Co., 1750 N. Campbell Ave., Chicago 47, Ill.—C,Y,AA,AB,AC
 Marshall Assoc. Inc., John, P.O. Box 2463, Bridgeport 8, Conn.—AE
 MENDELSONN SPEEDGUN CO., 4th Ave., Haskell, N.J.—D,I,M,U,X,Y
 METHODE MFG. CORP., 2021 W. Churchill St., Chicago 47, Ill.—C,S,AC
 Micra Insulator Co., P.O. Box 1076, Schenectady 1, N.Y.—K,AB,AC
 Microdot Div., Felts Corp., 1826 Fremont Ave., S. Pasadena, Calif.—D,X
 Millen Mfg. Co., James, 150 Exchange St., Malden, Mass.—M,Y,AB,AC
 Miller Electric Co., 120 Main St., Pawtucket, R.I.—M
 Miller Co., J.W., 5917 S. Main St., Los Angeles, Calif.—AB,AC
 Milwaukee Transformer Co., 5231 N. Hopkins St., Milwaukee 9, Wis.—AB
 Mitronics, Inc., 232 13th Ave., Newark, N.J.—P,R,V,Z
 Molded Insulation Co., 834 E. Price St., Philadelphia 44, Pa.—D
 Moore Co., H. J., 266 William St., New York 38, N.Y.—AB,AC
 Morse Co., F. W., 1300 Soldiers Field Rd., Boston, Mass.—H
 Mosley Electronics, Inc., 8622 St. Charles Rock Rd., St. Louis 14, Mo.—B
 Multi-Metal Wire Cloth Co., 1350 Garrison Ave., New York 59, N.Y.—N,O
 MYCALEX CORP. OF AMERICA, 125 Clifton Blvd., Clifton, N.J.—C
 NAER Corp., 11777 Santa Monica Blvd., West Los Angeles 25, Calif.—A,M,W,X
 NATIONAL CO., 61 Sherman St., Malden 48, Mass.—M,R
 National Electrical Machine Shops, 919 Jesup Blair Dr., Silver Springs, Md.—D,F,L,M,N
 Neosil Products Div. Rubber Associates, 850 Metropolitan Ave., Brooklyn 11, N.Y.—C,I,Z
 Neptune Electronic Co., 433 Broadway, New York 13, N.Y.—C,F,G,L,M,N,O,AB,AC
 New Products Co., 1069 E. 54th St., Indianapolis, Ind.—C,E,R,S,W,AB,AC
 Nichols Products Co., 325 W. Main St., Moorestown, N.J.—D,M,U
 North Electric Mfg. Co., S. Market St., Galion, Ohio—F,M,N,P,U,W,AC
 Pacific Mercury TV Mfg., 5955 Van Nuys Blvd., Van Nuys, Calif.—N,O
 Petroff, P. A., 127 Water St., New York 5, N.Y.—B,D,M,N,O,T
 PHAOSTRON CO., 151 Pasadena Ave., S. Pasadena, Calif.—N
 Philmore Mfg. Co., 113 University Pl., New York 3, N.Y.—B,G,AC
 Pioneer Electronics Corp., 24 Saunders St., Salem, Mass.—C
 Pix Mfg. Co., 5 Oliver St., Newark 2, N.J.—P,U
 Plymouth Electronics Corp., 50 Kingsbury St., Worcester, Mass.—B
 Precision Associates, 854 Cumberland St., Brooklyn 17, N.Y.—N,O
 Precision Plastic Products, 225 N. Racine Ave., Chicago 7, Ill.—A,P,AB,AC
 PRODELIN, 307 Bergen Ave., Kearny, N.J.—D
 Pyle-National Co., 1334 N. Kostner Ave., Chicago 51, Ill.—C,H,M,O
 Radio City Products Co., 101 West 31 St., New York 1, N.Y.—F,L
 Rajah Co., 58 Locust Ave., Bloomfield, N.J.—P

ELECTRONIC INDUSTRIES DIRECTORY

RADIO CORP. OF AMERICA, RCA VICTOR DIV., Eng'g. Products Div., Camden 2, N.J.—D,G,L,N
 RCA TUBE DEPT., 415 S. 5 St., Harrison, N.J.—A,K
 Remler Co., 2101 Bryant St., San Francisco 10, Calif.—F,G,M
 Research Instrument Co., 233 Broadway, New York 7, N.Y.—N,P
 Reynolds Metals Co., 2500 S. 3rd St., Louisville 1, Ky.—C
 Rhode Island Electronics Inc., Mill St., Lonsdale, R.I.—N,O
 Rich Electronics Inc., 212 N. W. 8 Ave., Miami 36, Fla.—O
 Riverside Metal Co., 1 Pavilion Ave., Riverside, N.J.—I
 Rodale Mfg. Co., Emmaus, Pa.—M
 Roftan Co., Topsfield, Mass.—B,C,D,F,G,H,I,J,L,M,N,P
 ROMAR PLASTICS INC., 1311 E. Main St., St. Charles, Ill.—AC
 Ruckelshaus Labs., J. G., 110 Pomeroy Rd., Madison, N.J.—W
 Screw Corp. of America, 103 Park Ave., New York 17, N.Y.—P
 Sealectro Corp., 186 Union Ave., New Rochelle, N.Y.—F,M,U,X
 Sealtron Co., 9701 Reading Rd., Cincinnati 15, Ohio—P
 Sears Co., M. J., Roxbury, N.Y.—F,G,M
 Selectar Industries, Inc., 3100 Ocean Parkway, Brooklyn 35, N.Y.—C,D,F,J,L,M,N,O
 Shakeproof Div., Ill. Tool Works, Elgin, Ill.—P
 Shaw Insulator Co., 160 Coit St., Irvington 11, N.J.—AB
 Smith, Inc., Herman H., 436 18 St. Brooklyn 15, N.Y.—A,B,C,D,E,L,M,P
 Spaulding Fibre Co., 310 Wheeler St., Tonawanda, N.Y.—P,AC
 Spencer-Kennedy Labs., 186 Mass. Ave., Cambridge 39, Mass.—D
 Sperti Faraday, Inc., 1077 Celestial St., Cincinnati 2, Ohio—P
 Standard Electric Time Co., 119 Logan St., Springfield, Mass.—L
 STANDARD ELECTRONICS CORP., 285 Emmet St., Newark 5, N.J.—N
 States Co., 19 New Park Ave., Hartford, Conn.—AB,AC
 Steel Co., Herman, Lafayette Bldg., Philadelphia 6, Pa.—F,M,U
 Stokes Molded Products, Taylor & Webster Sts., Trenton 4, N.J.—AB,AC
 Stone City Machine & Tool Co., 1206 7th St., Bedford, Ind.—P
 Stratoseal Mfg. Co., 3039 W. Fullerton Ave., Chicago 47, Ill.—K,M,P,R,Z,AB
 STUPAKOFF CERAMIC & MFG. CO., Latrobe, Pa.—R,Z
 Superex Electronics Corp., 23 Atherton St., Yonkers, N.Y.—V
 Switchcraft, Inc., 1328 N. Halsted St., Chicago, Ill.—C,F,G,M
 SYLVANIA ELECTRIC PRODUCTS INC., 1740 Broadway, New York 19, N.Y.—B,E,K,M,U,X
 Taylor Fibre Co., Norristown, Pa.—AB,AC
 Technical Appliance Corp., 1 Taco St., Sherburne, N.Y.—B
 Technicraft Labs. Inc. Thomaston-Waterbury Rd., Thomaston, Conn.—J
 Teletronic Labs., 1835 W. Rosecrans Ave., Gardena, Calif.—D
 Thomas & Betts Co., 36 Butler St., Elizabeth 1, N.J.—B,Y,AA
 Thompson-Bremer & Co., 520 N. Dearborn St., Chicago 10, Ill.—P
 Thompson Clock Co., H. C., 88 Federal St. Bristol, Conn.—C,D,F,G,H,L,M,N,O,P
 TINNEMAN PRODUCTS, INC., P.O. Box 6688, Dept. 16, Cleveland 1, Ohio—C, K
 TLG Electric Corp., 31 W. 27th St., New York 1, N.Y.—C
 Torwico Electronics, 967 Frelinghuysen Ave., Newark 5, N.J.—P,Z,AL
 Triad Transformer Corp., 4055 Redwood Ave., Venice, Calif.—Z
 Tri-Dex Co., P.O. Box 1207, Lindsay, Calif.—W,AB,AC
 Tru-Connector Corp., 416 Union St., Lynn, Mass.—B,C,D,J,M,R,S
 TV Development Corp., 2024 McDonald Ave., Brooklyn 23, N.Y.—B,C,D,G
 Ucinite Co., Div. United-Carr Fastener Corp., 459 Watertown St., Newtonville, Mass.—A,B,C,D,F,K,M,P
 United-Carr Fastener Corp., 81 Ames St., Cambridge 42, Mass.—A,K,M,P
 U.S. Components Inc., 454 E. 148th St., New York 55, N.Y.—C,D,E,F,H,I,L,M,R,S,T,U,V,X
 U.S. ENGG. CO., 521 Commercial St., Glendale 3, Calif.—P,R,AB,AC
 U.S. Gasket Co., 603 N. 10 St., Camden 1, N.J.—E,H,J,R,S

U.S. Wire & Cable Corp., Progress and Monroe Sts., Union, N.J.—C,D
 United Transformer Co., 150 Varick St., New York 13, N.Y.—C,G,Q
 Univox Corp., 102 Warren St., New York 7, N.Y.—V
 Vaco Products Co., 817 E. Ontario St., Chicago 11, Ill.—P
 Van Cleef Bros., 7800 S. Woodlawn Ave., Chicago 19, Ill.—AD
 Vector Electronic Co., 3352 San Fernando Rd., Los Angeles 65, Calif.—C
 Volkert Metal Stampings, John, 223-24 96 Ave., Queens Village 29, N.Y.—A,K,U,V,X
 Wade Electric Products Co., 211 Jacob, Sturgis, Mich.—C,O,P,T
 Waldom Electronics, 4625 W. 53rd, Chicago 10, Ill.—A,I
 Walsco Electronics Corp., 3225 Exposition Pl., Los Angeles 18, Calif.—A,F,U,Y
 Waltham Horological Corp., 711 Broad St., Lynn, Mass.—C,D,F,J,M,U
 Waltham Screw Co., 77 Rumford Ave., Waltham 54, Mass.—F
 WARREN PLASTICS CORP., Warren, Pa.—A,Z,AB,AC
 Welch Electric Co., 1221 Wade St., Cincinnati 14, Ohio—F,G
 Western Electronic Enterprises, 3348 W. Compton Blvd., Gardena, Calif.—C,D
 Western Int'l. Co., 45 Vesey St., New York 7, N.Y.—B,C,D,F,G,H,I,L,M
 Western Mfg. Co., 1400 W. 22 St., Kearney, Nebr.—D,H,J,M
 Weymouth Instrument Co., 1440 Commercial St., E. Weymouth 89, Mass.—D
 Wheaton Co., T.C., Millville, N.J.—Z
 Whitaker Cable Corp., 1301 Burlington Ave., N. Kansas City 16, Mo.—P,AA
 Whitney Blake Co., 1565 Dixwell Ave., New Haven 14, Conn.—C,D,H,I,M,U,V,X
 Whitso Inc., 9330 Byron, Schiller Pk., Ill.—F
 Wilmar Mfg. Co., 2715 E. 14th St., Kansas City 27, Mo.—N,O,AB
 Willard Storage Battery Co., 1220 Huron Rd., Cleveland, Ohio—P
 Winchester Electronics Inc., 15 Crescent St., Glenbrook, Conn.—U,V,X
 Wright Eng'g. Co., 180 E. Calif. St., Pasadena 1, Calif.—D,I
 Zierick Mfg. Corp., Beechwood & Rockdale Aves., New Rochelle, N.Y.—B,P
 Z & W Machine Products, 5100 St. Clair Ave., Cleveland 3, Ohio—B

23—CONTROL EQUIPMENT, COMMUNICATIONS

Controls, audio recording L
 Controls, broadcast input A
 Controls, frequency B
 Controls, illumination C
 Controls, motor & generator D
 Controls, photoelectric E
 Controls, photographic F
 Controls, power level G
 Controls, remote radio H
 Controls, tower lighting I
 Controls, ventilation K
 Tuners, automatic J

Adler Communications Labs., 1 Le Fevre Lane, New Rochelle, N.Y.—A
 Aero Electronics Co., 1512 N. Wells St., Chicago 10, Ill.—E
 Aeronautical Communications Equip. Inc., 3090 Douglas Rd., Miami 33, Fla.—H
 Aeronautical Radio Mfg. Co., 155 First St., Mineola, N.Y.—H
 Air Associates, Teterboro, N.J.—D,H,J
 Allied Int'l. Inc., 280 Park Ave., New York 17, N.Y.—G,I
 ALTEC LANSING CORP., 9356 Santa Monica Blvd., Beverly Hills, Calif.—A
 American Electronizing Corp., 2040 Colo. Ave., Santa Monica, Calif.—H
 AMPEX CORP., 934 Charter St., Redwood City, Calif.—L
 ANDREW CORP., 363 E. 75 St., Chicago 19, Ill.—I
 Askania Regulator Co., 240 E. Ontario St., Chicago 11, Ill.—E
 Atlantic Electronics Corp., 4 Manhasset Ave., Port Washington, N.Y.—B
 Atlas Metal Stamping Co., Castor & Kensington Aves., Philadelphia 24, Pa.—B,J
 Atlas Precision Products Co., 3801 Castor Ave., Philadelphia 24, Pa.—J
 Authorized Mfrs. Service, 919 Wyckoff Ave., Brooklyn 27, N.Y.—A,K
 Automatic Switch Co., 391 Lakeside Ave., Orange, N.J.—B
 Autotron Co., 128 W. Main, Danville, Ill.—I
 Avionex Electronics Corp., 2838 North Nautilus St., Burbank, Calif.—H
 Bar-Ray Products, 209 25 St., Brooklyn 8, N.Y.—F
 Bassett, Inc., Rex, 1314 N.E. 17 Court, Fort Lauderdale, Fla.—H
 Bendix Aviation Corp., Pacific Div., 1160 Sherman Way, N. Hollywood, Calif.—H
 BERKELEY SCIENTIFIC DIV. BECKMAN INSTRUMENTS INC., 220 Wright Ave., Richmond, Calif.—B

Gen. Co., David, 29 9th St., New York 14, N.Y.—H
 Regue Electric Mfg. Co., 52 Iowa Ave., Paterson 3, N.J.—B.D
 Rolsey Corp. of America, 118 E. 25 St., New York 10, N.Y.—F
 Rrach Mfg. Co., Div. General Bronze Corp., 200 Central Ave., Newark 3, N.J.—H
 Bristol Co., The, Waterbury 20, Conn.—G
 British Electronic Sales Co., 23-03 46th Rd., Long Island City 1, N.Y.—A.L
 Browning Laboratories, Inc., 750 Main St., Winchester, Mass.—B
 Brush Electronics Co., 3405 Perkins Ave., Cleveland 14, Ohio—L
 Budelman Radio Corp., 375 Fairfield Ave., Stamford, Conn.—H
 Huhl Optical Co., 1009 Beech Ave., Pittsburgh 33, Pa.—F
 Bulova Watch Co., 630 5 Ave., New York, N.Y.—B
 Century Lighting Inc., 521 W. 43rd St., New York 25, N.Y.—F.O
 C.G.S. Labs., Inc., 391 Ludlow St., Stamford, Conn.—B.H.J.
 CINEMA ENGG. CO., Div. Aerovox Corp., 1510 W. Verdugo Ave., Burbank, Calif.—A.L
 Codetypewriter Labs., 560 Fifth Ave., New York 19, N.Y.—H
 COLLINS RADIO CO., 855 33rd St., N.E. Cedar Rapids, Iowa—A.H
 Colortone Electronics, 238 William St., New York 38, N.Y.—B
 Conn. Telephone & Electric Corp., 70 Britannia St., Meriden, Conn.—B
 Daven Co., 191 Central Ave., Newark 4, N.J.—A.G.L.
 De-Tec-Tronic Labs. Inc., 1711 Terra Cotta Pl., Chicago 14, Ill.—E
 Dubrow Devel. Co., 235 Penn St., Burlington, N.J.—B.G.K.
 DUMONT LABS. INC., ALLEN B., 1000 Main Ave., Clifton, N.J.—F
 Dwyer Mfg. Co., F. W., 317 S. Western Ave., Chicago 12, Ill.—K
 Eagle Signal Corp., 202 20 St. Moline, Ill.—D
 Ebert Electronics Corp., 212-26 Jamaica Ave., Queens Villars 28, N.Y.—D
 Edgerton, Gernsmausen & Grier, Inc., 160 Brookline Ave., Boston 15, Mass.—E.F
 Ellico of N.Y., Inc., 70-72 E. 2nd St., Mineola, L.I., N.Y.—H
 Electric Eye Equip. Co., 6 W. Fairchild St., Danville, Ill.—E
 Electrical Service Co., 1271 Mission St., San Francisco 3, Calif.—E
 Electrodyne Co., Norwood, Mass.—E
 Electronic Control Corp., 1573 E. Forest Ave., Detroit 7, Mich.—E
 Electronic Research, 11550 39 St., N.E., Seattle 55, Wash.—E.H
 Electron-Radar Products, 1041 N. Pulaski Rd., Chicago 51, Ill.—E
 Electro-Physics Co., 287 Broadway, New York 7, N.Y.—E.F
 Electro-Sound Corp., 115 Halleck St., Boston, Mass.—L
 Electro-Tech Equip. Co., 308 Canal St., New York, N.Y.—E
 Electrotechnic Corp., 15601 Arrow Hwy., Azusa, Calif.—H
 Electro Vision Lab., 4227 Francis Lewis Blvd., Bayside 61, N.Y.—E.F
 El-Tronics, Inc., 5th & Noble Sts., Philadelphia 23, Pa.—E
 Eng'g. Research & Devel. Co., Addison, Ill.—E
 Erco Radio Laboratories, 637 Stewart Ave., Garden City, N.Y.—H
 FAIRCHILD CAMERA & INSTRUMENT CORP., Robbins Lane, Syosset, N.Y.—E.F
 FAIRCHILD RECORDING EQUIP. CO., Whitestone 57, N.Y.—A.L
 FEDERAL TELEPHONE & RADIO CO., DIV. I.T. & T., 100 Kingsland Rd., Clifton, N.J.—E
 Flexaut Co., 100 Park Ave., New York 17, N.Y.—K
 Forbes & Wagner Inc., 339 Central Ave., Silver Creek, N.Y.—J
 Franklin Electronics Inc., 415 W. Pike St., Philadelphia 40, Pa.—L
 Furnas Electric Co., 1000 McKee St., Batavia, Ill.—D
 Gables Eng'g. Inc., 247 Greco Ave., Coral Gables, Fla.—H
 GATES RADIO CO., Quincy, Ill.—A.B.H.L
 General Communications, Box 169, Fort Atkinson, Wis.—A.C
 GENERAL ELECTRIC CO., BROADCAST EQUIP. & COMMERCIAL EQUIP. DIV., Electronics Park, Syracuse, N.Y.—A
 GENERAL ELECTRIC CO., ELECTRONICS DIVISION, Syracuse, N.Y.—H
 GENERAL RADIO CO., 275 Mass. Ave., Cambridge 39, Mass.—C
 & M. Equipment Co., 7315 Varna Ave., North Hollywood, Calif.—H
 Gatham Audio Development, 2 W. 46 St., New York 36, N.Y.—K
 RAYBAR ELECTRIC CO., 420 Lexington Ave., New York 17, N.Y.—A.C
 Greenleaf Mfg. Co., 7814 Maplewood Ind. Ct., St. Louis 17, Mo.—D.E
 Galedy Electronics Co., 57 William St., New York 5, N.Y.—E
 HAMMARLUND MFG. CO., 460 W. 34 St., New York 1, N.Y.—A.H.I
 Hanson-Gorill-Brian, Inc., 1 Continental Hill, Glenn Cove, N.Y.—D

Harmon Electronics Co., 11431 Truman Rd., Independence, Mo.—H
 Hastings Instrument Co., Hampton, Va.—G.H
 Hufford Machine Works, Electronics Division, 2201 Carmelina Ave., Los Angeles 64, Calif.—D
 Hughey & Phillips, 3300 N. San Fernando Blvd., Burbank, Calif.—E.I
 Induction Motors Corp., 55-15 37 Ave., Woodside 77, N.Y.—D
 Insuline Corp. of America, 186 Granite St., Manchester, N.H.—L
 Interelectronics Corp., 2432 Grand Concourse, New York 58, N.Y.—A.K
 Int'l. Electronics Corp., 147 Parkhouse St., Dallas 2, Texas—A
 Inq Industries, 6110 Wilshire Blvd., Los Angeles 36, Calif.—E
 Jack Scientific Instrument Co., Bill, Box C-4, Solana Beach, Calif.—C.E.F
 Jarrell-Ash Co., 165 Newbury St., Boston 16, Mass.—F
 JOHNSON CO., E. F., Waseca, Minn.—I
 Joy Mfg., Oliver Bldg., Pittsburgh 22, Pa.—K
 Lane Electronics Co., 7254 Atoll Ave., N. Hollywood, Calif.—H
 Lavoie Labs. Inc., Morganville, N.J.—J
 Lear Inc., 1196 W. Pico Blvd., Los Angeles 64, Calif.—B.H.J.
 Leonard Electric Products Co., 67 34th St., Brooklyn 32, N.Y.—J
 Lumentite Electronic Co., 407 S. Dearborn St., Chicago 6, Ill.—E.H
 Lyso Co., 1401 Clinton St., Hoboken, N.J.
 Machine O'Mat Co., Inc., 1631 S. Michigan Ave., Chicago, Ill.—E
 McLean Eng'g. Labs., 260 Nassau St., Princeton, N.J.—K
 Mackenzie Products Co., 141 Brewery St., New Haven, Conn.—E
 Mag-Electric Products Inc., 14405 Crenshaw Ave., Gardiner, Calif.—D
 Magnetic Amplifiers Inc., 632 Tinton Ave., New York 65, N.Y.—D.E
 Magnex Corp., 90-28 Van Wyck Expressway, Jamaica 18, N.Y.—E.H
 Master Appliance Mfg. Co., 4 & Ontario Sts., Racine, Wis.—D
 Mattson-Cowley Corp., 1487 Lincoln Ave., Pasadena 3, Calif.—H
 Maxson Corp., W. L., 460 W. 34th St., New York 1, N.Y.—B
 Metrotype Corp., 525 W. 76 St., Chicago 20, Ill. B.D
 Meyer & Co., Hugo, 39 W. 60th St., New York 23, N.Y.—E
 Michigan Electronics Inc., 854 N. Rockwell St., Chicago 22, Ill.—A.K
 Micro Balancing, Inc., 191 Herrick Rd., Garden City Park, N.Y.—C.I
 Minneapolis-Honeywell Regulator Co., Minneapolis 8, Minn.—B.K
 Montgomery Mfg. Co., Owensville, Ind.—A
 Multi-Trol Lab., 4624 Washington Blvd., Chicago 44, Ill.—C.E.I
 Munston Mfg. & Service, Inc., Beech St., Islip, N.Y.—B
 National Instrument Co., 23 E. 26 St., New York 10, N.Y.—J
 Natural Lighting Corp., 612 W. Elk Ave., Glendale 4, Calif.—C.F
 North American Model Products, 9802 Warwick Rd., Warwick, Va.—H
 North Electric Mfg. Co., S. Market St., Gallion, Ohio—C.I
 Northern Radio Co., 143 W. 22nd St., New York 11, N.Y.—B
 Oberline Ltd., 6411 Hollywood Blvd., Hollywood 28, Calif.—A
 Ohmite Mfg. Co., 4835 W. Flournoy St., Chicago 44, Ill.—D
 Olympic Development Co., Div., Olympic Radio & Television Corp., 30 Commerce Rd., Stamford, Conn.—H
 Peters Co., O. S., 1353 N.Y. Ave., N.E., Washington 2, D.C.—B
 Petroff, Peter A., 127 Water St., New York 5, N.Y.—E.H
 Phebeco, Inc., 900 Kingston Rd., Baltimore 12, Md.—H
 Philmore Mfg. Co., 113 University Pl., New York 3, N.Y.—H
 Phoenix Precision Instrument Co., 3803 N. 5 St., Philadelphia 40, Pa.—E
 Photobell Co., 116 Nassau St., New York 38, N.Y.—C.D.E.I
 Picco Instruments & Controls Corp., 3593 Hayden Ave., Culver City, Calif.—D
 Potter Instrument Co., 116 Cutter Mill Rd., Great Neck, N.Y.—E
 Radex Corp., 2076 Elston Ave., Chicago 14, Ill.—K
 RADIO CORP. OF AMERICA, RCA VICTOR DIV., Front & Cooper St., Camden 2, N.J.—A.E.G.I.K
 Railway Communications, Smith Rd. & Glenwood, Raytown, Mo.—H
 Regulator Eng'g. & Devel. Co., 11545 W. Jefferson Blvd., Culver City, Calif.—B
 Reve Inc., 2 E. Franklin Ave., Minneapolis 4, Minn.—D
 Rich Electronics Inc., 212 N. W. 8 Ave., Miami 36, Fla.—H
 Riverbank Labs., Batavia Ave.—P. O. Box 65, Geneva, Ill.—B
 Robinette Co., W. C., 802 Fair Oaks Ave., S. Pasadena, Calif.—B
 RUST INDUSTRIAL CO., 608 Willow St., Manchester, N.H.—H

Ryan Industries, 19159 John B. St., Detroit 3, Mich.—H
 Schaefer Custom Eng'g., 2279 Allessandro St., Los Angeles 39, Calif.—H
 Schuttig & Co., 9th & Kearny Sts., N.E. Washington 17, D.C.—H
 Scientific Associates, 580 Virginia Ave., N.E., Atlanta, Ga.—B
 Selector Industries, Inc., 3100 Ocean Parkway, Brooklyn 35, N.Y.—H.J
 Servo-Tek Products Co., 1086 Goffe Rd., Hawthorne, N.J.—D
 SHALLCROSS MFG. CO., 520 Pusey Ave., Collingdale, Pa.—A
 Sorensen & Co., 375 Fairfield Ave., Stamford, Conn.—B
 S.O.S. Cinema Supply Co., 602 W. 52nd St., New York 19, N.Y.—E.F
 Spar Eng'g. & Devel. Inc., South & Paxson Ave., Wyncote, Pa.—H
 Spera Electronic Labs., 37-10 33 St., Long Island City 1, N.Y.—H.K
 Springfield Enterprises, P.O. Box 54, Springfield Gardens 13, N.Y.—E
 Standard Coil Products Co., 2329 N. Pulaski Rd., Chicago 39, Ill.—F
 STANDARD ELECTRONICS CORP., 285 Emmet St., Newark 5, N.J.—H
 Sterling Instruments Co., 15310 W. McNichols, Detroit 35, Mich.—E
 Tech Laboratories Inc., Bergen & Edsall Blvd., Palisades Park, N.J.—A
 Technical Material Corp., 700 Fenimore Rd., Mamuroneck, N.Y.—H
 Tele-Broadcasters Inc., 158 E. 56th St., New York, N.Y.—A.L
 Telescreen Corp., 36 Grove St., New Canaan, Conn.—H
 Television Co. of America, 1761 Lincoln Blvd., Santa Monica, Calif.—E
 Thompson Clock Co., H. C., 38 Federal St., Bristol, Conn.—B.D.E.F.H
 Union Spring & Mfg. Co., 1057 Summit Ave., Jersey City 7, N.J.—J
 Varo Mfg. Co., 1801 Walnut St., Garland, Tex.—B.C.D
 VECTRON, INC., 400 Main St., Waltham 54, Mass.—E.F
 Vinson Co., E. R., 1401 Middle Harbor Rd., Oakland 20, Calif.—E
 Ward Leonard Electric Co., 115 Macqueston Pkwy., Mt. Vernon, N.Y.—D
 Welch Electric Co., 1221 Wade St., Cincinnati 14, Ohio—D.E
 Weltronic Co., 19500 W. 8 Mile Rd., Detroit 19, Mich.—D
 West Coast Electronics Co., 5873 W. Jefferson Blvd., Los Angeles 16, Calif.—H
 Westrex Corp., 111 8 Ave., New York 11, N.Y.—H
 Williams, Brown & Earle, 904 Chestnut St., Philadelphia 7, Pa.—F
 Wincharger Corp., E. 7th & Division Sts., Sioux City 2, Iowa—I
 WHITE DENTAL MFG. CO., S. S., INDUSTRIAL DIV., 10 E. 40th St., New York 16, N.Y.—H
 Worner Electronic Dev., Rankin, Ill.—C.E.I
 Wunderlich Radio Co., 2 5th Ave., New York 11, N.Y.—B

**24—CONTROL EQUIPMENT,
INDUSTRIAL**

Alarms, industrial	A
Alarms, intrusion	B
Controls, chemical	AAC
Controls, combustion	C
Controls, computer	AAD
Controls, conductivity	D
Controls, density	E
Controls, dimension	F
Controls, door	G
Controls, dynamometer	AAE
Controls, elevator	M
Controls, film thickness	I
Controls, fire	AAC
Controls, fluid flow	J
Controls, food processing	K
Controls, gas	AAF
Controls, grading & sorting	L
Controls, guided missile	AAG
Controls, heat treating	M
Controls, humidity	N
Controls, illumination	O
Controls, inspection	P
Controls, liquid level	Q
Controls, machine safety	R
Controls, materials thickness	S
Controls, mechanical overload	T
Controls, moisture	U
Controls, motor & generator	V
Controls, package wrapping	W
Controls, pH	AAH
Controls, photoelectric	X
Controls, photographic	Y

Controls, position	Z
Controls, power level	AA
Controls, pressure	AB
Controls, printing	AC
Controls, register	AD
Controls, servo	AE
Controls, smoke density	AF
Controls, speed	AAM
Controls, strain	AG
Controls, surface finish	AAI
Controls, temperature	AH
Controls, telemetering	AAJ
Controls, torque	AI
Controls, traffic	AJ
Controls, TV visual	AK
Controls, ultrasonic	AL
Controls, vacuum	AM
Controls, ventilating	AN
Controls, volume	AAK
Controls, weight	AO
Controls, welding	AP
Counting Devices	AQ
Gyros	AR
Regulators, automatic current	AS
Regulators, automatic voltage	AT
Solenoid Valves	AU
Timers, counting	AV
Timers, cyclic	AW
Timers, impulse	AX
Timers, interval	AY
Timers, photoelectric	AZ
Timers, sequence	AAA
Timers, thermal	AAB

ELECTRONIC INDUSTRIES DIRECTORY

Abbott Plastics & Machine Corp., 6322 N. Clark St., Chicago 26, Ill.—AM
 Ace Instrument Co., Inc., 172 Pacific St., Brooklyn 2, N.Y.—C.J.X.Z.AB.AE.AM.AAF
 Acme Electronics, 300 N. Lake Ave., Pasadena 4, Calif.—V.X.Z.AE.AH.AI.AS.AT.AW.AAA
 Adel Div., General Metals Corp., 10777 Van Owen St., Burbank, Calif.—A.U.V
 Adler Communications Labs., 1 LeFevre Lane, New Rochelle, N.Y.—AK
 Advance Electronics Co., 451 Highland Ave., Passaic, N.J.—AQ.AV
 Aero Electronics, 1512 N. Wells, Chicago 10, Ill.—A.F.I.J.N.S.U.X.Z.AE.AG.AH.AI, AO, AQ, AV.AZ.AAA.AAD.AAG
 Ahrendt Instrument Co., 4910 Calvert Rd., College Park Md.—AE.AI.AV
 Airborne Accessories Corp., 1414 Chestnut Ave., Hillside 5, N.J.—AE
 Airlectron Inc., 295 Bloomfield Ave., Caldwell, N.J.—A.B.Q.X.Z.AD
 Allen-Bradley Co., 1326 S. 2nd St., Milwaukee 4, Wis.—V.AB.AH.AY
 Allied Eng'g. Div., Allied Int'l. Inc., 230 Park Ave., New York 17, N.Y.—AE.AG
 American Chronoscope Corp., 316 W. 1 St., Mt. Vernon, N.Y.—X.AY.AZ
 American Electroengineering Corp., 2040 Colo. Ave., Santa Monica, Calif.—AE
 American Instrument Co., 8050 Georgia Ave., Silver Spring, Md.—N.U
 American Machine & Foundry Co., Electronics Div., 1085 Commonwealth Ave., Boston 15, Mass.—AJ
 American Radio Co., 445 Park Ave., New York 22, N.Y.—AK
 American Vacuum Products Corp., 11779 Santa Monica Blvd., W. Los Angeles 25, Calif.—AE.AM.AAG
 Amzlo Corp., 2037 W. Division St., Chicago 22, Ill.—AW.AAA
 Ansley Electronics, 85 Tremont St., Meriden, Conn.—AL
 Applegate & Co., C. J., 1816 Grove St., Boulder, Colo.—AS.AT.AW
 Applied Physics Corp., 362 W. Colorado Blvd., Pasadena 2, Calif.—AAF
 Applied Science Corp., of Princeton, P.O. Box 44, Princeton, N.J.—AAJ
 A.R.F. Products, Inc., 7627 Lake St., River Forest, Ill.—G
 Arlin Products, Inc., 13541 Auburn Ave., Detroit 23, Mich.—AQ
 Arma Corp., Roosevelt Field, Garden City, N.Y.—AE.AR.AAC
 Arrow-Hart & Hegeman, 103 Hawthorne St., Hartford 6, Conn.—G.V.AN.AAA
 Askania Regulator Co., 240 E. Ontario St., Chicago 11, Ill.—C.D.E.F.J.M.Q.V.X.Z.AA, AH, AD, AE, AG, AI, AS, AT, AAD, AAF, AAJ, AAK
 Assembly Products, Main & Bell Sts., Chagrin Falls, Ohio—MAH
 Associated Engineering Corp., 65 Kent St., Brookline 46, Mass.—AT
 Atkomatic Valve Co., 645 W. Abbott St., Indianapolis, Ind.—AU
 Atlantic Electronics Corp., 4 Manhasset Ave., Port Washington, N.Y.—AE.AH.AS.AT
 Atlas Metal Stamping Co., Castor & Kensington Aves., Philadelphia 24, Pa.—AE
 Atomic Instrument Co., 84 Mass. Ave., Cambridge 39, Mass.—AQ.AV.AX.AY

Atomlab, Inc., 489 5 Ave., New York 17, N.Y.—AV.AX
 Audio Instrument Co., 133 W. 14th St., New York 11, N.Y.—AE.AAD
 Audio-Tone Oscillator Co., 6511 Main St., Long Hill, Conn.—Q.AH.AAJ
 Austin Co., Special Devices Div., 76 9 Ave., New York 11, N.Y.—F.P.Z.AE.AQ, AAD, AAE, AAG.AAJ
 Authorized Mfrs. Service Co., 919 Wyckoff Ave., Brooklyn 27, N.Y.—AS.AT.AAJ
 Automatic Temperature Control Co., 5212 Pulaski Ave., Philadelphia 44, Pa.—E.F.I.J.M, Q.S.Z.AB.AE.AI.AO.AQ.AW.AY.AAA.AAF
 Autotron Co., 128 W. Main St., Danville, Ill.—G.L.O.R.X.Z.AD.AE.AO.AQ.AV.AZ
 Avion Instrument Corp., 299 State Highway 17, Paramus, N.J.—E.AI.AAD.AAG
 Badger Meter Mfg. Co., 231 N. 30th St., Milwaukee 45, Wis.—J
 Bailey Meter Co., 1050 Ivanhoe Rd., Cleveland 10, Ohio—A.C.D.J.M.Q.AB.AE.AH.AAH
 Bahlwin-Lima-Hamilton Corp., Philadelphia 42, Pa.—AG.AI
 Barber-Colman Co., 1300 Rock St., Rockford, Ill.—M.N.Q.U.Z.AH.AN.AU
 Bar-Ray Products Inc., 209 25 St., Brooklyn 32, N.Y.—Y.AH
 Barton Electronics, 955 Asylum Ave., Hartford 5, Conn.—H.E.G.Q.S.T.X.AQ.AV.AW.AY.AZ
 Batsou Electronics Corp., J. A., 1031 S. 27 St., Omaha, Neb.—AW
 Baughman Co., E. J., 350 S. Central, Los Angeles 13, Calif.—AE, AX
 Becker Equip. Co., 3020 N. Cicero Ave., Chicago 41, Ill.—AW
 Beckman Instruments, Inc., 2500 Fullerton Rd., Fullerton 1, Calif.—AAH
 Belock Instrument Corp., 111-01 14th Ave., College Point 56, N.Y.—AE.AAA.AAG
 Bendix Aviation Corp., Pacific Div., 11600 Sherman Way, N. Hollywood, Calif.
 BERKLEY SCIENTIFIC, DIV. BECKMAN INSTRUMENTS INC., 2200 Wright Ave., Richmond, Calif.—L. P. Q. U. X. Z. AB, AH, AQ, AV, AW, AX, AY, AZ, AAG
 Birdsell Mfg. Co., 750 San Antonio Rd., San Antonio, Texas—AW
 Bircher Corp., 4371 Valley Blvd., Los Angeles 32, Calif.—C.D.E.F.G.H.I.J.K.L.M.N.O.P, Q.R.S.T.U.V.W.X.Y.Z.AA.AB, AC, AD, AE, AF, AG, AH, AI, AJ, AK, AL, AM, AN, AO, AP, AQ, AR, AS, AT, AAC, AAD, AAE, AAF, AAG, AAH, AAI, AAJ, AAK, AAL, AAM
 Bogue Electric Mfg. Co., 52 Iowa Ave., Paterson 3, N.J.—QV
 Bone Eng'g. Corp., 701 W. Broadway, Glendale 4, Calif.—J
 Borg Equip. Div., Borg Corp., George 120 S. Main St., Janesville, Wis.—AE
 BOURNS LABS., 6135 Magnolia Ave., Riverside, Calif.—AB
 Brach Mfg. Co., Div. General Bronze Corp., 200 Central Ave., Newark 3, N.J.—AE
 Brinnell Co., College Highway, Simsbury, Conn.—R.T.AI
 Bristol Co., Waterbury 20, Conn.—G.K.N.Q.Z, AA, AB, AF, AG, AH, AM, AW, AX, AAA
 Bristol Eng'g. Corp., Lincoln & Pond Sts., Bristol, Pa.—AS,AT,AAF
 British Electronic Sales Co., 23-03 45th Rd., Long Island City 1, N.Y.—AK
 Brooks Rotameter, Box 432, Lansdale, Pa.—J
 Brown Instrument Div., Minneapolis-Honeywell Regulator Co., Wayne and Windrim Ave., Philadelphia 44, Pa.—A.C.D.E.J.K, M, N, Q, U, AB, AE, AH, AI, AM, AO, AAF, AAH, AAK, AAL
 Browning Laboratories, Inc., 750 Main St., Winchester, Mass.—B
 BRUSH ELECTRONICS CO., 3405 Perkins Ave., Cleveland 14, Ohio—P,AG,AL,AP,AAI
 Buhl Optical Co., 1009 Beech, Pittsburgh—Y
 Bunnell & Co., J. H., 81 Pines St., Brooklyn 1, N.Y.—Q
 Burling Instrument Co., 16 River Rd., Chatham, N.J.—AH
 Burlington Instrument Co., 203 N. 3 St., Burlington, Iowa—AS,AT
 BURROUGHS CORP., ELECTRONIC INSTRUMENTS DIV., 1209 Vine St., Philadelphia 7, Pa.—S, AQ, AV, AY, AAD
 B/W Controller Corp., 220 E. Maple Rd., Birmingham, Mich.—Q
 Caltron Products Co., 1310 S. Hobart Blvd., Los Angeles 6, Calif.—J, AU
 Capehart-Farnsworth Div., I.T.&T., Ft. Wayne, Ind.—AK
 Centralab Div., Globe Union, Inc., 900 E. Keefe Ave., Milwaukee 1, Wis.—AAK
 Central Scientific Co., 1700 Irving Park Rd., Chicago 13, Ill.—AH, AAH
 Century Geophysical Corp., 3406 W. Washington Blvd., Los Angeles 18, Calif.—AE, AG, AL
 Century Lighting Inc., 621 W. 43rd St., New York 25, N.Y.—O, Y, AK
 C.G.S. Labs 391 Ludlow, Stamford, Ct.—AAG

Cherry-Channer Corp., 1488 Skokie Blvd., Highland Park, Ill.—AW, AAA
 Clark Controller Co., 1146 E. 152 St., Cleveland 10, Ohio—V
 Clark Cooper Co., Market St., Palmyra, N.J.—AH, AU
 Clegg Laboratories, Inc., 142 S. Livingston Ave., Livingston, N.J.—L, AH, AS, AT
 Codetypor Laboratories, 550 5th Ave., New York 19, N.Y.—AY, AAA
 Colvin Labs., 12 Court, Morristown, N.J.—AB
 Combustion Control Corp., 718 Beacon St., Boston 15, Mass.—C
 Computer Corp. of America, 149 Church St., New York 7, N.Y.—AS, AT
 Consolidated Engineering Corp., 300 N. Sierra Madre Villa, Pasadena 15, Calif.—AB, AG, AH, AM, AAD, AAF, AAL
 Control Corp., 718 Central Ave., Minneapolis 14, Minn.—AAJ
 Control Devices Inc., 9918 Chalevoix Ave., Detroit 14, Mich.—L, P, AO, AQ
 Control Electronics Co., 1925 New York Ave., Huntington Station, N.Y.—AE
 Control Eng'g. Corp., 560 Providence Highway, Norwood, Mass.—C, J, AB, AH, AO
 Counter & Control Corp., 5225 W. Electric Ave., Milwaukee 14, Wis.—F, AQ, AV, AW, AX, AY
 Curtiss Wright Corp., Electronics Div., 631 Central Ave., Carlstadt, N.J.—AE
 Cutler-Hammer Inc., 436 N. 12 St., Milwaukee 1, Wis.—C, K, M, O, Q, T, V, W, X, Z, AB, AC, AD, AE, AH, AI, AN, AO, AS, AT, AU, AV, AZ, AAA, AAB, AAE, AAF
 DAGE ELECTRONICS INC., 71 N. 2nd Ave., Beech Grove, Ind.—AK, AAJ, AAM
 Davies Labs., Inc., 4705 Queensbury Rd., Riverdale, Md.—AAD, AAJ
 Defender Instrument & Regulator Co., 815 Clark Ave., St. Louis 2, Mo.—A, B, J, AH, AM
 Deitz Co., S. J., 38 River Edge Rd., River Edge, N.J.—B, D, L, O, Q, R, W, X, AC, AD, AF, AQ, AV, AW, AX, AY, AZ, AAA
 Delaware Optical Labs., 36 Williams St., Lansdowne, Pa.—E, F, L, AD, AQ
 Delco-Remy Div., General Motors Corp., P. O. Box 640, Anderson, Ind.—AS, AT
 Deltron Inc., P.O. Box 192, Glenside, Pa.—AH
 Demco Products, P.O. Box 5042, Philadelphia 11, Pa.—AQ, AV
 Designers for Industry, 2915 Detroit Ave., Cleveland 13, Ohio
 Detectolab, Inc., 6544 Sheridan Rd., Chicago 26, Ill.—AQ, AV, AX
 Detect-O-Ray Co., 2622 N. Halsted St., Chicago 14, Ill.—B, X, AF, AZ
 De-Tec-Tronic Labs, Inc., 1711 Terra Cotta Pl., Chicago 14, Ill.—C, E, G, L, Q, X, Z, AF, AN
 Devtronics, Inc., 221 N. Hermitage Ave., Trenton, N.J.—A, C, D, J, Q, R, X, AD, AH, AQ, AS, AT, AV, AW, AX, AY, AZ, AAA, AAC, AAL
 Diamond Power Specialty Corp., P.O. Box 415, Lancaster, Ohio—AK
 Diatron Co., 3327 Dixie Dr., Houston 21, Tex.—AH, AI
 Dietz Co. H. G., 12-16 Astoria Blvd., Long Island City 2, N.Y.—AH, AM, AN, AW, AX, AAA
 Digital Instrument Co., 212 Almeria Ave., Coral Gables, Fla.—E, AQ, AV, AW, AX, AAA
 Dillon & Co., W. C., 14620 Keswick St., Van Nuys, Calif.—T, AAE
 Dimco-Gray, 207 E. 6, Dayton 2, Ohio—AY
 Dixie Controls Co., Box 7013, Norfolk 9, Va.—AY
 DoAll, 254 N. Laurel, Des Plaines, Ill.—F, M, P
 Duclam Corp., 1400 Soldiers Field Rd., Boston 35, Mass.—Z, AE, AAJ
 Dondar Devices, 321 E. 6th St., Medford, Ore.—B
 Dorothea Mechanisms, Inc., Gale, 81-01 Broadway, Elmhurst, L.I., N.Y.—AX, AY, AAA, AAB
 Douglas Instrument Lab., 176 Norfolk Ave., Boston 19, Mass.—AT
 Dressen-Barnes Corp., 250 N. Vinedo Ave., Pasadena 8, Calif.—R, AA, AS, AT
 Dubrow Development Co., 235 Penn St., Burlington, N.J.—AQ
 DUMONT LABS., INC., ALLEN B. TV Transmitter Dept., Mobile Comm. Dept., 1500 Main St., Clifton, N.J.—AK, AAM
 Duncan & Bayley, 755 Hertel Ave., Buffalo 7, N.Y.—T, Z, AE, AI
 Dwyer Mfg. Co., F. W., 317 S. Western Ave., Chicago 12, Ill.—AB, AN
 Eagle Signal Corp., 202 20 St., Moline, Ill.—V, AJ, AV, AX, AAA
 Ebert Electronics Corp., 212-26 Jamaica Ave., Queens Village 28, N.Y.—V, W, AC, AN, AP
 ECLIPSE-PIONEER DIV., BENDIX AVIATION CORP., Teterboro, N.J.—AR, AS, AT
 Edgerton, Germeshausen & Grier, 160 Brookline Ave., Boston 15, Mass.—X, Y
 EDISON INC., THOMAS A., INSTRUMENT DIV., 93 Lakeside Ave., W. Orange, N.J.—A, AH, AAB, AAC
 Eldema Corp., 5827 E. Beverly Blvd., Los Angeles 22, Calif.—AQ
 Electric Controller & Mfg. Co., 2700 E. 79th St., Cleveland 4, Ohio—M, V, AP
 Electric Eye Equip. Co., 6 W. Fairchild St., Danville, Ill.—X, AC, AD
 Electric Regulator Corp., Pearl St., Norwalk, Conn.—AE, AS, AT, AAM
 Electrical Service Co., 1271 Mission St., San Francisco 3, Calif.—B, L, R, X, AQ, AV, AZ
 Electrodyne, Norwood, Mass.—L, X, AD

Electrofilia Inc., 7116 Laurel Canyon Blvd., N. Hollywood, Calif.—D. I. J. M. P. S. W. AO, AS, AT, AAK, AAL

Electro-Mec Laboratory, 19 Murray St., New York 7, N.Y.—ZAE

Electronic Control Corp., 1573 E. Forest Ave., Detroit 7, Mich.—H.C.G.I.R.T.X.AF.AH.AI, AJ.AQ.AY.AZ

Electronic Control Systems, 2138 Westwood Blvd., Los Angeles 25, Calif.—P.U.AAD, AAG.AAM

Electronic Development Lab., 43-07 23 Ave., Long Island City 5, N.Y.—B

Electronic Measurements Co., Lewis St. & Maple Ave., Eatontown, N.J.—AS,AT

Electronic Research, 11550 39 St. N.E., Seattle 55, Wash.—AP,AT,AZ

Electron-Radar Products, 1041 N. Pulaski Rd., Chicago 51, Ill.—C.X.AE.AF.AZ.AAB

Electro-Physics Co., 287 Broadway, New York 7, N.Y.—B.O.X.Y

Electro-Seal Corp., 946 North Ave., Des Plaines, Ill.—A.P.T.V.AH.AQ.AV.AW, AY, AAA.AAG

Electro-Tech-Equip. Co., 308 Canal St., New York 13, N.Y.—A.B.M.Q.R.V.X.AF.AH.AQ, AT.AU.AV.AW.AX.AY.AZ.AAA

Electro-Technics Inc., 198 Albion Ave., Paterson, N.J.—R.AE

Electro Vision Lab., 30-16 Crescent St., Long Island City 2, N.Y.—B.X.Y.Z.AQ.AV.AW, AX.AZ.AAA

El-Tronics Inc., 5 & Noble Sts., Philadelphia 23, Pa.—B.G.Q.R.X.AQ.AV.AX

Emmett Machine & Mfg. Inc., 2249 14 St. SW, Akron 14, Ohio—AQ.AU.AW.AAA

Endevco Corp., 689 S. Fair Oaks Ave., Pasadena 2, Calif.—P

Eng'g. Research Associates Inc., Div. Remington Rand Inc., 1902 W. Minnehaha Ave., St. Paul 4, Minn.—L.AQ.AAD

Eng'g. Research & Devel. Co., Addison, Ill.—F.I.K.L.R.W.X.AD.AQ

Espey Mfg. Co., 628 E. 72 St., New York 21, N.Y.—AAJ

Ess Instrument Co., 96 S. Washington Ave., Bergenfield, N.J.—C.E.P.W.X.AD.AF.AQ

FAIRCHILD CAMERA & INSTRUMENT CORP., Syosset, N.Y.—B.X.Y.AE.AZ

Farmer Electric Co., 21 Mossfield Rd., Waban 68, Mass.—Q.AY.AAA

Farmers Eng'g. & Mfg. Co., Irwin, Pa.—P

Federal Electric Corp., 6446 Santa Monica Blvd., Los Angeles 38, Calif.—AQ

FEDERAL TELEPHONE & RADIO CO., DIV. I.T. & T., 100 Kingsland Rd., Clifton, N.J.—K.I.P.X.Z.AE.AH.AQ

Fenwal Inc., Pleasant St., Ashland, Mass. J.N.Q.AE.AAB

Fields Instrument Div., Robertshaw-Fulton Controls Co., 2920 N. 4 St., Philadelphia 33, Pa.—A.H.D.I.J.K.M.N.P.Q.R.S.U.Z.AE, AG.AH.AI.AO.AH.AAK.AAL

Filters, Inc., 30 Sagamore Hill Dr., Port Washington, N.Y.—V

Fischer & Porter Co., 19 Warminster Rd., Hatboro, Pa.—J.Q.AB.AH

Flader, Inc., Fredric, 583 Division St., N. Tonawanda, N.Y.—AB,AO

Flexaust Co., 100 Park Ave., New York 17, N.Y.—AN

FORD INSTRUMENT CO., DIV. THE SPERRY CORP., 31-10 Thomson Ave., Long Island City 1, N.Y.—Z.AC.AE.AY, AAD.AAG

Foxboro Co., 38 Neponset Ave., Foxboro, Mass.—D.E.J.K.N.Q.S.U.Z.AB.AH.AI.AO

Franklin Control Corp., 1975 S. Allis St., Milwaukee 7, Wisc.—V.AI.AAM

Furnas Electric Co., 1000 McKee St., Batavia, Ill.—V.AB

GENERAL COMMUNICATIONS, P.O. Box 169, Fort Atkinson, Wisc.—O.AK,AT

GENERAL CONTROLS CO., 801 Allen Ave., Glendale 1, Calif.—N.AH.AM.AU

General Devices, Inc., P.O. Box 253, Princeton, N.J.—AG.AH.AAJ

GENERAL ELECTRIC CO., APPARATUS DIV., 1 River Rd., Schenectady 5, N.Y.—G, J, K, M, P, Q, R, T, W, Z, AA, AB, AC, AD, AE, AF, AI, AL, AM, AN, AO, AP, AT, AV, AZ, AAL

General Magnetics Inc., 135 Bloomfield Ave., Bloomfield, N.J.—AS

GENERAL PRECISION LAB., INC., 63 Bedford Rd., Pleasantville, N.Y.—AK

GENERAL RADIO CO., 275 Mass. Ave., Cambridge 39, Mass.—O,V

General Riveters Inc., Electro-Mechanical Div., Elmwood & Hertel, Buffalo 7, N.Y.—T.Z.AE.AI.AE.AAG

GANNINI & CO., G. M., 914 E. Green St., Pasadena 1, Calif.—Z.AAD.AAJ

Gibbs Mfg. & Research Corp., 450 N. Main St., Janesville, Wisc.

Glomere Industries, Inc., 5713 Euclid Ave., Cleveland 3, Ohio—Q.T.AA.AB.AC.AG.AI, AO.AAE

G-M Labs, Inc., 4300 N. Knox Ave., Chicago 41, Ill.—AE

Griffith & Gorrell, Haworth, N.J.—AV, AX, AAA

Globe Industries, Inc., 1784 Stanley Ave., Dayton 4, Ohio—AR

G & M Equipment Co., 7815 Varna Ave., N. Hollywood, Calif.—AK

Gonset Co., 801 S. Main St., Burbank, Calif.—AK

Gotham Instruments Div., American Machine & Metals, Sellersville, Pa.—J.K.N.Q.U.AB, AH.AM

Gow-Mac Instrument Co., 100 Kings Rd., Madison, N.J.—AAF

GRAYBAR ELECTRIC CO., 420 Lexington Ave., New York 17, N.Y.—AAL

G-V Controls Inc., 28 Hollywood Plaza, E. Orange, N.J.—AH,AS,ATA,AB

Gulton Mfg. Co., 212 Durham Ave., Metuchen, N.J.—AB,AG,AI,AL,AA,GA,AL

Haley Electronics Co., 57 William St., New York 5, N.Y.—Q.X.AQ

Hansen Co., Wm., 165 Silverbrook Ave., Niles, Mich.—X

Hanson-Gorrill-Brian Inc., 1 Continental Hill, Glen Cove, N.Y.—V.X.AE.AH.AT.AZ.AAD, AAG

Hartman Eng'g. Co., 182 Oakland St., Springfield 8, Mass.—B.AAJ

Hastings Instrument Co., Hampton, Va. AB

Haydon Co., A. W., 232 N. Elm St., Waterbury, Conn.—AV.AW.AY.AAA

Haydon Mfg. Co., 245 E. Elm St., Torrington, Conn.—AQ.AV.AW.AX.AY.AZ.AAA

Hays Corp., E. 8 St., Michigan City, Ind.—C.J.M.Q.AAF

Hays Mfg. Co., 12th & Liberty Sts., Erie 6, Pa.—J.AU

Healy-Ruff Co., 772 Hampden Ave., St. Paul 14, Minn.—QAB

Hercules Elec. Mach'y. & Equip. Co., 1442 E. Wash. Blvd., Los Angeles, 21, Calif.—AW

Hewlett-Packard Co., 395 Page Mill Rd., Palo Alto, Calif.—AV.AX.AY.AZ

Hoke Inc., 136 S. Dean St., Englewood, N.J.—J.AB.AM

Honeywell Aero Div., Minn.—Honeywell, Minneapolis 13, Minn.—AR

Hufford Machine Works, Electronics Division, 2201 Carmelina Ave., Los Angeles 64, Calif.—V.Z.AE.AS.ATA,AG

Hughes & Phillips, 3300 N. San Fernando Blvd., Burbank, Calif.—X

Hunter Mfg. Co., 1164 E. Court St., Iowa City, Iowa—AW

Huppert Co., K. H., 6830 Cottage Grove Ave., Chicago 37, Ill.—M.AH.AW.AAB

Hycan Mfg. Co., 2961 E. Colorado St., Pasadena 8, Calif.—Y.AW.AAG

Hydro-Aire Inc., Sub. Crane Co., Burbank, Calif.—AY

Idea, Inc., Regency Div., 7900 Pendleton Pike, Indianapolis 26, Ind.—C

Induction Motors Corp., 55-15 37 Ave., Woodside 77, N.Y.—V.AI

Industrial Control Co., Straight Path & Arlington Ave., Wyandanch, N.Y.—Z.AE.AI

Industrial Electronics Co., Hanover St., Hanover, Mass.—B.C.Q.R.S.X.AD.AF.AQ.AT.AV, AW.AX.AY.AZ.AAA

Industrial Electronic Eng'rs., 3973 Lankershim Blvd., N. Hollywood, Calif.—K.L.Z, AO.AQ.AAA

Industrial Electronics, 8060 Wheeler St., Detroit 10, Mich.—X.AB.AG.AO.AZ

Industrial Instruments Inc., 89 Commerce Rd., Cedar Grove, N.J.—D

Industrial Nucleonics Corp., 1205 Chesapeake Ave., Columbus 12, Ohio—I.S.AO

Industrial Timer Corp., 131 Ogden St., Newark 4, N.J.—AW.AX.AY.AAA

Inet, Inc., 8655 S. Main St., Los Angeles 3, Calif.—AA,AS,AT

Interelectronics Corp., 2432 Grand Concourse, New York 58, N.Y.—AH

INT'L RESEARCH ASSOC., 2221 Warwick Ave., Santa Monica, Calif.—AT

Inq Industries, 6110 Wilshire Blvd., Los Angeles 36, Calif.—B.D.L.N.P.Q.R.U.W.X.Z.AC.AD, AG.AO.AQ.AU.AV.AW.AX.AZ.AAA

Jack Scientific Instrument Co., Hill, Box C-4, Solana Beach, Calif.—AV.AW.AY.AAA

Jacobs Instrument Co., 4718 Bethesda Ave., Bethesda 14, Md.—AAD

JAN Hardware Mfg. Co., 75 N. 11th St., Brooklyn 11, N.Y.—R

Jarrell-Ash Co., 165 Newbury St., Boston 16, Mass.—Y

Jarvis Electronics Corp., 6058 Fullerton Ave., Chicago 39, Ill.—AE

Jerrold Electronics Corp., 26th & Dickinson Sts., Philadelphia 46, Pa.—AK

J-P-T Instruments, 441 Chapel St., New Haven, Conn.—AV

Jordan Electronic Mfg. Co., 119 E. Union St., Pasadena 1, Calif.—A.E.Q.S.AF

Joy Mfg. Co., Oliver Bldg., Pittsburgh 22, Pa.—AN

Kaiser Metal Products Inc., Bristol, Pa.—AE, AQ.AAD

Kalbfell Labs, Inc., 1090 Morena Blvd., San Diego 10, Calif.—AK.AAM

Kearfoot Co., 1378 Main Ave., Clifton, N.J.—Z.AE.AI.AR.AAD.AAG

Kidde & Co., Walter, 1056 Main St., Belleville 9, N.J.—AH

Kliegl Bros., 321 W. 50th St., New York 19, N.Y.—O,Y

Kilgen Aircraft Div., of Kilgen Organ Co., 4632 W. Florissant Ave., St. Louis 15, Mo.—AJ

Kinetix Inst. Co., 902 Broadway, New York 10, N.Y.—AE

Kurman Electric Co., 35-18 37th St., Long Island City 1, N.Y.—AV.AW.AX.AY.AAA

Kybernetics Corp., 1100 Raymond Blvd., Newark 5, N.J.—A.J.O.X.Z.AB.AH.AK.AQ.AAJ, AAL

Laboratory for Electronics, Inc., 75 Pitts St., Boston 14, Mass.—U.AJ

Laboratory Equipment Corp., Hilltop Rd., St. Joseph, Mich.—AAL

Lambda Electronics Corp., 103-02 Northern Blvd., Corona 68, N.Y.—AS,AT

LaMotte Chemical Products, Baltimore 1, Md.—AAH.AAL

Landis & Gyr, 45 W. 45th St., New York 36, N.Y.—AQ

Lee Electric & Mfg. Co., 2806 Clearwater St., Los Angeles 39, Calif.—M.AS,AT

Leeds & Northrup Co., 4970 Stenton Ave., Philadelphia 44, Pa.—C.D.M.A.F.AH.AAH

Lektra Labs, Inc., 154 11 Ave., New York 11, N.Y.—X.Y.AV.AW.AX.AY.AZ.AAA

Librascope Inc., 1807 Flower St., Glendale 1, Calif.—AE.AAD

Link Aviation, Inc., Binghamton, N.Y.—AE, AAD

Liquidepth Indicators Inc., 43-22 10 St., Long Island City 1, N.Y.—Q

I. & O. Research & Devel. Corp., 134 N. Wayne Ave., Wayne, Pa.—AE.AH.AI

Lord-Taber Co., Inc., 40 Ontario St., Canandaigua, N.Y.—AAC

Lumenite Electronic Co., 407 S. Dearborn St., Chicago 5, Ill.—A.Q.R.X.AF.AX.AAA

Lynch Carrier Systems, 96 Jessie St., San Francisco 5, Calif.—AAJ

Lysco Mfg. Co., 1401 Clinton St., Hoboken, N.J.—X

Macdonald Co., W. S., 33 University Rd., Cambridge 38, Mass.—AH

Machine O'Matic, Inc., 1631 S. Michigan Ave., Chicago, Ill.—W.X

Mack Electric Devices Inc., 37 Glenside Ave., Wyncote, Pa.—A.V.AH

MacKenzie Products Co., 141 Brewery St., New Haven, Conn.—L.P.X.AX

Mag-Electric Products Inc., 14405 Crenshaw Ave., Gardiner, Calif.—V.AE.AS,AT

Magnaflex Corp., 7300 W. Lawrence Ave., Chicago 31, Ill.—P,AG

Magnetic Amplifiers Inc., 632 Tinton Ave., New York 55, N.Y.—V.X.AE.AI

Magnetic Instrument Co., 82 Main St., W. Orange, N.J.—AS,AT

Magnex Corp., 90-28 Van Wyck Expressway, Jamaica 18, N.Y.—X.Z.AB.AE.AQ

Maico Co., 21 N. 3rd St., Minneapolis 1, Minn.—AE

MALLORY & CO., P. R., 3029 E. Washington St., Indianapolis 6, Ind.—AW.AAA

Manning, Maxwell & Moore, 250 E. Main St., Stratford, Conn.—Q.AB.AH.AM

Marconi's Wireless Telegraph Co., 23 Beaver St., New York 4, N.Y.—AT

Masco Products Co., 2119 S. Sepulveda Blvd., Los Angeles 25, Calif.—W.AW.AY.AAA, AAG.AAJ

Master Appliance Mfg. Co., 4 & Ontario Sts., Racine, Wisc.—V

Maurer Inc., J. A., 37-01 31st St., Long Island City 1, N.Y.—AW.AX.AY.AAA

Maxxon Corp., W. L., 460 W. 34th St., New York 1, N.Y.—AE.AAD.AAG.AAJ

May Eng'g. Co., 6055 Lankershim Blvd., N. Hollywood, Calif.—AV

McLean Eng'g. Labs., 260 Nassau St., Princeton, N.J.—AN

McNeill Eng'g. Co., 4057 W. Van Buren, Chicago 24, Ill.—AF

Mechanical Industries Production Co., 217 Ash St., Akron 7, Ohio—V.AH

Mercoid Corp., 4201 Belmont Ave., Chicago 41, Ill.—A.Q.AB.AH.AM

Mercury Electronic Co., Box 450, Red Bank, N.J.—AS,AT

Merix Chemical Co., 1021 E. 55th St., Chicago 15, Ill.—D.N.AAL

Metals & Controls Corp., General Plate Div., 33 Forest St., Attleboro, Mass.—AH

Metron Instrument Co., 432 Lincoln St., Denver 3, Colo.—AAM

Metrotype Corp., 6100 Archer Rd., Summit, Ill.—J.X.AC.AE.AH.AQ.AAJ

Meyer & Co., Hugo, 39 W. 60th St., New York 23, N.Y.—F.P.X.Y.AAG

Micro Balancing Inc., 191 Herricks Rd., Garden City Park, N.Y.—X

Minneapolis-Honeywell Regulator Co., Minneapolis 8, Minn.—A.C.D.E.J.K.M.N.Q.R.U.V, Z, AA, AB, AE, AF, AG, AH, AI, AN, AQ, AR, AU, AAC, AAF, AAH, AAL

Minnesota Electronics Corp., 1058 University Ave., St. Paul 4, Minn.—I

Mission-Western Engineers, 132 W. Colorado St., Pasadena, Calif.—AAE

Model Electric Prod. Corp., Asbury Park, N.J.—R,V

Montgomery Mfg. Co., Owensville, Ind.—AAA

Moog Valve Co., East Aurora, N.Y.—J.Z.AB, AE.AU.AAG

Motorola Inc., 4545 W. Augusta St., Chicago, Ill.—AH

Mullenbach Electrical Mfg. Co., 2300 E. 27 St., Los Angeles 58, Calif.—AP

Multi-Products Co., 449 E. Ten Mile Road, Hazel Park, Mich.—G

Multi-Tron Lab., 4624 Washington Blvd., Chicago 44, Ill.—O.X.AM.AP.AW.AZ.AAD

National Research Corp., 160 Charlemont St., Newton Highlands 61, Mass.—AM

Networks Electronic Corp., 14806 Oxnard St., Van Nuys, Calif.—S,X

Newark Controls Co., 15 Ward St., Bloomfield, N.J.—A.Q.AAC

New Rochelle Tool Corp., 320 Main St., New Rochelle, N.Y.—M

Norco Mfg. Co., 392 Bleecker St., New York 14, N.Y.—O.P.
 North Electric Mfg. Co., S. Market St., Gallon, Ohio—H. A.J. AS. AT. AV. AX. AAA. AAD. AAG. AAJ
 Northeastern Eng'g. Corp., S. Bedford St., Manchester, N.H.—A.R.AE.AM.AAG.AAJ
 Nuclear Instrument & Chemical Corp., 223 W. Erie St., Chicago 10, Ill.—E.AV.AY
 Nuclear Research & Devel. Co., 6425 Etzel Ave., St. Louis 14, Mo.—AQ
 Nucleonic Co. of America, 497 Union St., Brooklyn 31, N.Y.—AQ
 O'Brien Electric Corp., 6514 Santa Monica Blvd., Hollywood 38, Calif.—A
 Ohmart Corp., 2236 Bogen St., Cincinnati 14, Ohio—E.L.K.Q.S.AAK.AAL
 Ohmite Mfg. Co., 3601 Howard St., Skokie, Ill.—V.AAK
 Olympic Development Co., Div. Olympic Radio & Television Corp., 30 Commerce Rd., Stamford, Conn.—Z.AE.AH
 Opad-Green Co., 71-24 Warren St., New York 7, N.Y.—V
 Optical Film Engineering Co., 2731 N. 6th St., Philadelphia 33, Pa.—AM
 Orthon Corp., 196 Albion Ave., Paterson, N.J.—E.I.AS.AT
 Pacific Mercury TV Mfg. Corp., 5955 Van Nuys Blvd., Van Nuys, Calif.—AE.AG.AK. AAG.AAJ.AAL
 Pacific Scientific Co., 25 Stillman St., San Francisco 7, Calif.—M.AE.AAG
 Pantek Co., Box 212, El Segundo, Calif.—AQ.AV.AW.AY.AZ
 Par Products Corp., 926 N. Citrus Ave., Hollywood 38, Calif.—Y
 Pease Co., C. F., 2601 W. Irving Park Rd., Chicago 18, Ill.—Y
 Penn Industrial Instrument Corp., 4110 Haverford Ave., Philadelphia 4, Pa.—A.J.Q.AB.AH. AM
 Pereny Equip. Co., 893 Chambers Rd., Columbus 12, Ohio—AH
 Peschel Electronics Inc., 13 Garden St., New Rochelle, N.Y.—P.AS.AT
 Peters Co., C. S., 1353 NY Ave., N.E., Washington 2, D.C.—AE.AG
 Petroff, Peter A., 127 Water St., New York 5, N.Y.—X.AZ
 Pfanstiehl Chemical Co., 104 Lake View Ave., Waukegan, Ill.—AG
 Phoco, Inc., 900 Kingston Rd., Baltimore 12, Md.—AE.AAG.AAJ.AAL
 Phila. Scientific Glass Co., 4 Eckard Ave., Abington, Pa.—U.AH.AM.AP
 Phoenix Precision Instrument Co., 3803 N. 5 St., Philadelphia 40, Pa.—A.E.I.J.O.P.Q.X. Y.AE.AF.AG.AQ.AS.AT.AZ.AAC.AAI
 Photobell Co., 116 Nassau St., New York 38, N.Y.—B. D. E. F. G. I. L. O. P. Q. R. S. U. V. X. Y. AD. AF. AJ. AP. AQ. AV. AZ. AAB. AAH
 Photovolt Corp., 95 Madison Ave., New York 16, N.Y.—AY.AZ.AAH
 Photoswitch Inc., 77 Broadway, Cambridge 42, Mass.—B. D. G. Q. R. X. AD. AP. AQ. AV. AW. AX. AY. AZ. AAA
 Physical Research Labs., Inc., 1909 Park Ave., New York 35, N.Y.—N.U.AJ.AL
 Pico Instruments & Controls Corp., 3593 Hayden Ave., Culver City, Calif.—V.AE. AH.AI.AAD.AAG.AAJ
 Pico Products Co., Whitney St., Framingham, Mass.—AI
 Plastics & Electronics Corp., 272 Northland Ave., Buffalo 8, N.Y.—AAG
 Polyphase Instrument Co., 705 Haverford Rd., Bryn Mawr, Pa.—AG.AI
 Portable Electric Tools Inc., 200 W. 83 St. Chicago 20, Ill.—AF
 Post Machinery Co., 140 Elliot St., Beverly, Mass.—X.AQ
 Potter Instrument Co., 115 Cutter Mill Rd., Great Neck, N.Y.—W.X.Z.AQ.AV.AW. AX. AY.AZ.AAA.AAJ
 Power Designs Inc., 119-22 Atlantic Ave., Richmond Hill, New York 19, N.Y.—AS.AT
 Power Transformer Co., 532 Hulberry St., Newark 5, N.J.—M.AS.AT
 Precision Thermometer & Instrument Co., 1434 Brandwine St., Philadelphia 30, Pa.—E
 Price Electric Corp., Frederick, Md., AY. AAA
 Process & Instruments, 15 Stone Ave., Brooklyn 33, N.Y.—A.M.AF.AAH.AAL
 "Q" Glass Co., 470 Broad St., Bloomfield, N.J.—AM
 Radiophone Co., 600 E. Evergreen Ave., Monrovia, Calif.—AAG
 RAYTHEON MFG. CO., 100 River St., Waltham 54, Mass.—AE.AP.AAM
 Rea Co., J. B., 11941 Wilshire Blvd., Los Angeles 25, Calif.
 Recora Co., 56 W. 103 St., Chicago 28, Ill.—B.R.AQ
 Refrigeration Systems, Inc., 646 W. Washington Blvd., Chicago 6, Ill.—N.AB.AH
 Regulator Eng'g. & Devel. Co., 11545 W. Jefferson Blvd., Culver City, Calif.—AS.AT
 Reliance Electric & Eng'g. Co., 1088 Ivanhoe Rd., Cleveland 10, Ohio—V
 Remco Mfg. Co., 545 N. LaSalle St., Chicago 10, Ill.—A.W.AAA
 Resdel Eng'g., 2351 Riverside Dr., Los Angeles 39, Calif.—AF.AL.AAG.AAJ
 Research Electronics Labs., Roslyn, Pa.—D.L.X.AH.AM.AQ.AX.AAA
 Revere Copper and Brass Inc., 230 Park Ave., New York 17, N.Y.—AP



Revere Corp. of America, 845 N. Colony Rd., Wallingford, Conn.—J.Q
 Richards Co., Arkley S., 35 Winchester St., Newton Highlands 61, Mass.—AH
 Richardson-Allen Corp., 116-15 15 Ave., College Point, L.I., N.Y.—AP.AS.AT
 Rich-Roth Labs., 1240 Main St., Hartford 3, Conn.—E.J.Q.AL.AAD
 Ripley Co., 1 Factory St., Middletown, Conn.—AD
 Robinette Co., W. C., 802 Fair Oaks Ave., S. Pasadena, Calif.—F.Z.AB.AD.AE
 Rockwell Eng'g. Co., 4063 N. New Jersey St., Indianapolis 5, Ind.—Y.AB.AE.AG.AI.AM. AO.AY.AAA.AAM
 Rowe Industries, 1702 Wayne St., Toledo 9, Ohio—A
 Rubicon Co., Ridge Ave. at 35th St., Philadelphia 32, Pa.—X
 Ruge-de Forest Inc., 50 Moulton St., Cambridge 38, Mass.—AH
 Ryan Industries Inc., 19159 John R. St. Detroit 3, Mich.
 Sanders Associates, Inc., 137 Canal St., Nashua, N.H.—AE.AAG
 Schaevitz Eng'g., Crescent Blvd. & Drexel Ave., Pennsauken Twp., Camden 1, N.J.—F.S.Z.AE.AO
 Schwien Eng'g. Co., 16217 Lindbergh St., Van Nuys, Calif.—AR.AAG
 Sciaky Bros., 4915 W. 67th St., Chicago 38, Ill.—AP.AV.AY
 Seay Instrument Co., 6521 N. Lamar Blvd., Austin 5, Tex.—Z.AE
 Servo Corp. of America, 2020 Jericho Tpke., New Hyde Park, L.I., N.Y.—Z.AE.AH.AI. AAD.AAG.AAJ
 Servo-Tek Products Co., 1086 Goffe Rd., Hawthorne, N.J.—Q.V.Z.AE.AAM
 Servomechanisms, Inc., 500 Franklin Ave., Garden City, N.Y.—AE.AAD.AAG
 Sherman Industrial Electronics Co., 505 Washington Ave., Belleville, N.J.—M.AY
 Small Motors Inc., 2076 Elkton Ave., Chicago 14, Ill.—V.AE
 Sorenson & Co., 375 Fairfield Ave., Stamford, Conn.—AA.AS.AT
 S.O.S. Cinema Supply Corp., 602 W. 52nd St., New York 19, N.Y.—I.X.Y
 Spar Eng'g. South & Paxson Aves., Wyncote Pa.—AE
 Special Instruments Lab., Inc., 312 W. Vine St., Knoxville, Tenn.—AC.AQ
 Special Products Co., 9115 Brookville Rd., Silver Spring, Md.—X
 Specialties, Inc., Skunks Miscry Rd., Syosset, L.I., N.Y.—F.Z.AE
 Sperry Gyroscope Co., Great Neck, N.Y.—AR. AAG
 Springfield Enterprises, P.O. Box 54, Springfield Gardens 13, N.Y.—X
 Square Root Mfg. Corp., 391 Saw Mill River Rd., Yonkers 2, N.Y.—AQ.AAM
 STACKPOLE CARBON CO., Tannery St., St. Marys, Pa.—AAK
 Standard Coil Products Co., 2329 N. Pulaski Rd., Chicago 39, Ill.—Y.AB.AE.AH
 Standard Electric Time Co., 119 Logan St., Springfield, Mass.—AV.AY

THE EXCLUSIVE MANUFACTURERS' LOCALIZER INDEX

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Lists Manufacturers alphabetically by name and address. Includes manufacturers' local representatives, branch and regional offices, executives and regional personnel, brand names, products, services, telephone numbers, and territory covered. Provides the shortest means of contacting any manufacturer . . . cuts correspondence; speeds services.



Standard Electronic Research Corp., 2 East End Ave., New York 21, N.Y.—I.P.S.AE.AH
 STANDARD ELECTRONICS CORP., 285 Emmet St., Newark 5, N.J.—AK
 Steiner-Ives Co., 483 Springfield Rd., Union, N.J.—AM
 Sterling Instruments Co., 15310 W. McNichols Rd., Detroit, Mich.—F.J.K.P.Q.R.S.T.X.AA. AH.AE.AH.AI.AO.AAD.AAE
 Stevens Mfg. Co., 69 S. Walnut St., Mansfield, Ohio—AH
 Ströndberg Eng'g. Labs. 416 W. Market St., Greensboro, N.C.—N.U
 Streeter-Amet Co., 4101 N. Ravenswood Ave., Chicago 13, Ill.—AE.AH.AI.AJ.AQ.AV.AX. AY.AAA
 Struthers, Dunn Inc., 150 N. 13 St., Philadelphia 7, Pa.—AW.AAA.AAB
 Superex Electronics Corp., 23 Atherton St., Yonkers, N.Y.—U
 Swarthout Co., 18511 Euclid Ave., Cleveland 12, Ohio—J.K.Q.S.AB.AH
 Synchronomic Productions, 766 Broadway, Bayonne, N.J.—W
 Tabet Mfg. Co., 1336 Ballentine Blvd., Norfolk, Va.—X
 Taco West Corp., 525 N. Noble St., Chicago 22, Ill.—MAH
 Teac Corp., 139 E. 23rd St., New York 10, N.Y.—AW.AX
 Tech Laboratories Inc., Bergen & Edsall Blvd., Palisades Park, N.J.—AAAJ
 Technical Products Co., 19 N. Dunlap, Medical Center, Memphis 1, Tenn.—E.L.K.N.O. P. S. U. X. AH. AL. AM. AN. AO. AQ. AV. AY. AZ. AAF. AAH. AAI. AAL
 Telechron Dept., General Electric Co., Homer Ave., Ashland, Mass.—AY
 Telecomputing Corp., 133 E. Santa Anita Ave., Burbank, Calif.—AQ
 Telephonics Corp., Park Ave., Huntington, N.Y.—AL
 Teleregister Corp., 445 Fairfield Ave., Stamford, Conn.—AQ
 Telescreen Corp., 36 Grove St., New Canaan, Conn.—F.I.Q.S.AF
 Teletronic Laboratories Inc., 1835 W. Rosecrans, Gardena, Calif.—AW.AX.AY.AAA
 Teletronics Lab., 54 Kinkel St., Westbury, L.I., N.Y.—RAK
 Television Utilities Corp., 1315 Jericho Turnpike, New Hyde Park, L.I., N.Y.—AK.AAM
 Tenistron, Inc., Pin Hill, Harvard, Mass.—AH.AAA
 TEXAS INSTRUMENTS INC., 6000 Lemmon Ave., Dallas 9, Texas—AE.AL.AAG.AAJ
 Thermo Elec. Mfg. Co., 465 Huff, Dubuque, Iowa—AH
 Thermo Instruments Co., 1310 Old County Rd., Belmont, Calif.—N.Q
 Thompson Clock Co., H. C., 38 Federal St., Bristol, Conn.—A.B.T.V.X.Y.AC.AD.AO.AQ. AS.AT.AU.AV.AW.AX.AZ.AAA.AAB
 Thor Transformer & Electronics, Inc., 750 San Antonio Rd., Palo Alto, Calif.—AP
 Thwing-Albert Instrument Co., Penn St. & Pulaski Ave., Philadelphia 44, Pa.—AH.AAH
 Timetrol Co., 2919 Gladstone Ave., Rockford, Ill.—AP.AW.AX.AAA
 Tork Clock Co., 1 Grove St., Mt. Vernon, N.Y.—AW.AAA
 Torsion Balance Co., Monhegan St., Clifton, N.J.—E.P.AO
 Tracerlab, Inc., 130 High St., Boston 10, Mass.—I.J.Q.S.AO.AQ.AV.AX.AY
 TRANSCOIL CORP., 107 Grand St., New York 13, N.Y.—AE
 Transmitter Equip. Mfg. Co., 345 Hudson St., New York 14, N.Y.—AE.AT
 Trans-Sonics Inc., Bedford Airport, Bedford, Mass.—AB.AE.AH.AG
 Ulanet Co., George, 413 Market St., Newark 5, N.J.—AH.AAB
 Ultrasonic Corp., 61 Rogers St., Cambridge 42, Mass.—D.W.AE.AL.AS.AT.AV.AAA
 Ultrasonic Eng'g. Box 46, Maywood, Ill.—X.AJ
 Ultra-Violet Products, 145 Pasadena Ave., S. Pasadena, Calif.—K.P
 United Electric Controls, 85 School, Watertown 75, Mass.—Q.AB.AH
 Universal Match Corp., Armament Div., Box 191, Ferguson 21, Mo.—W.X.Y.AQ.AZ
 U.S. Electronics Corp., 275 Warren St., Lyndhurst, N.J.—AU
 U. S. Testing Co., 1415 Park Ave., Hoboken, N.J.—B. G. P. Q.R.S.T.U.V.X.Y.AB.AE.AG. AH. AI. AM. AN.AO.AQ.AV.AW.AX.AY. AAA.AAC.AAF.AAG.AAH.AAK
 U.S. Time Corp., 500 5 Ave., New York 3, N.Y.—AR.AAG
 Univox Corp., 102 Warren St., New York 3, N.Y.—X.AZ
 Vacuum-Electronic Eng'g. Co., 86 Denton Ave., New Hyde Park, L.I., N.Y.—AM.AU
 Vacuum Tube Products, 506 S. Cleveland St., Oceanside, Calif.—AM.AY
 Valpey Crystal Co., 1244 Highland St., Hattisdon, Mass.—AI
 Valverde Labs., 252 Lafayette St., New York 12, N.Y.—AH
 Vapor Heating Corp., 6420 W. Howard St., Chicago 31, Ill.—AH.AN
 Vapor Recovery Systems Co., 2820 N. Alameda St., Compton, Calif.—Q.AAJ
 Varo Mfg., 1801 Walnut, Garland, Tex.—AS.AT
 VECTRON, INC., 400 Main St., Waltham 44, Mass.—X.Y.Z.AE.AQ.AR.AZ.AAA

Veeder-Root Inc., 70 Sargeant St., Hartford 2, Conn.—AQ
 Vibro-Ceramics Corp., Metuchen, N.J.—AL
 Vickers Electric Co., Vickers, Inc., 1835 Locust St., St. Louis 8, Mo.—O.T.V.X.AA.AE.AI, AS.AT
 Vinson Co., E. R., 1401 Middle Harbor Rd., Oakland 20, Calif.—B.G.K.R.X.AZ.AAL
 Wakmann Watch Co., 15 W. 47 St., New York 36, N.Y.—AV.AW.AY.AAA
 Waldorf Instrument Corp., Park Ave., Huntington, N.Y.—Z.AE.AR
 Wang Laboratories, 296 Columbus Ave., Boston 16, Mass.—AQ
 Ward Leonard Electric Co., 115 MacQueston Pkwy., Mt. Vernon, N.Y.—V.AAB
 Warrick Co., Charles F., 1964 W. Eleven Mile Rd., Berkley, Mich.—AQ
 Washington Institute of Technology Inc., 4810 Calvert Pk., College Park, Md.—AM
 WAVELINE INC., Passaic Ave., Caldwell, N.J.—B
 Welch Electric Co., 1221 Wade St., Cincinnati, Ohio—E.X.A.F.A.L.AO.AZ
 Weltronic Co., 19500 W. 8 Mile Rd., Detroit 19, Mich.—V.AP.AS.AT.AV.AAA
 West Instrument Corp., 525 N. Noble St., Chicago 22, Ill.—AH
 Western Mfg. Co., 1400 W. 22 St., Kearney, Nebr.—B
 Westinghouse Electric Co., Box 868, Pittsburgh 30, Pa.—V
WESTON ELECTRICAL INSTRUMENT CORP., 614 Frelinghuysen Ave., Newark 5, N.J.—N.O.X.AH
 Wheelco Instruments Div., Barber-Colman Co., 1300 Rock St., Rockford, Ill.—C.M, AF.AH.AAB.AAJ
 White Industries, Inc., 421 W. 54 St., New York 19, N.Y.—AT
 Wiegand Co., Edwin L., 7500 Thomas Blvd., Pittsburgh 8, Pa.—AH
 Wilcox Research Co., 11122 Aqua Vista St., N. Hollywood, Calif.—X.Y.AL
 Williams, Brown & Earle, 904 Chestnut St., Philadelphia 7, Pa.—I.P.Y.AH.AY.AZ.AAH, AAL
 Winslow Co., 9 Liberty St., Newark 5, N.J.—M.AH.AAC
 Worner Electronic Devices, Rankin, Ill.—B, C.E.O.Q.X.A.F.AZ
Z & W Machine Products, Electronics Div., 5100 St. Clair Ave., Cleveland 3, Ohio—S, AAG

25—CRYSTALS & ACCESSORIES
CRYSTALS

Crystals, barium titanate A
 Crystals, frequency control J
 Crystals, hermetically sealed K
 Crystals, quartz B
 Crystals, rochelle salt C
 Crystals, scintillation Q
 Crystals, synthetic sapphire M
 Crystals, tourmaline D
 Crystals, transducer L

CRYSTAL ACCESSORIES

Crystal blanks N
 Crystal cartridges E
 Crystal clamps O
 Crystal electrodes F
 Crystal heaters P
 Crystal sockets G
 Holders H
 Probes I

Aeronautical Electronics, Inc., Raleigh-Durham Airport, Raleigh, N.C.—B.H.J.K
 Aeronautical Radio Mfg. Co., 155 1st St., Mineola, N.Y.—B.J
 Airtron Inc., 1103 W. Elizabeth Ave., Linden, N.J.—H
 Alear Instruments Inc., 20-21 Wagaraw Rd., Fair Lawn, N.J.—A.B.H.L
 Allied Industries, 2500 Woodland Ave., Louisville 10, Ky.—H
 American Machine & Foundry Co., Electronics Div., 1085 Commonwealth Ave., Boston 15, Mass.—E
 American Microphone Co., 370 S. Fair Oaks Ave., Pasadena 1, Calif.—E
AMERICAN PHENOLIC CORP., 1830 S. 54 Ave., Chicago 50, Ill.—G
 Aviat. Bros., 33 Perry Ave., Attleboro, Mass.—O
 Bassett, Rex Inc., 1314 N.E. 17 Court, Ft. Lauderdale, Fla.—B.H.J.K
BENDIX AVIATION CORP., 11600 Sherman way, N. Hollywood, Calif.—A
BENDIX RADIO, DIV. BENDIX AVIATION CORP., Baltimore 4, Md.—B.J.K
 Bircher Corp., 4371 Valley Blvd., Los Angeles 32, Calif.—A.B.C.D.J.K.L.O
BILLEY ELECTRIC CO., Union Station Bldg., Erie, Pa.—B.J.K.L
 Bodnar Industries Inc., 19 Railroad Ave., New Rochelle, N.Y.—B.J
 Bram Chemical Co., 820 65 Ave., Philadelphia 26, Pa.—A.B
 Brecon Labs., 1520 Evergreen Rd., Williamsport, Pa.—B

BRUSH ELECTRONICS CO., 8405 Perkins Ave., Cleveland 14, Ohio—A,B,C,E,F,L
 Budd-Stanley Co., 43-01 22nd St., Long Island City 1, N.Y.—G.H.I
 Burwood Corp., 4921 Exposition Blvd., Los Angeles, Calif.—H
CENTRALAB, DIV. OF GLOBE-UNION INC., 900 E. Keefe Ave., Milwaukee 1, Wisc.—A.E.G.H.L
CINCH MFG. CO., 1026 S. Homan Ave., Chicago 24, Ill.—G
 Clark Crystal Co., 2 Farm Rd., Marlboro, Mass.—B
 Commercial Radio Monitoring Co., P.O. Box 7037, Kansas City, Mo.—J
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 Dimeco-Gray Co., 207 E. 6 St., Dayton 2, Ohio—L
 Dorn Equip. Corp., 58 Broad St., Boston 10, Mass.—F,N,O,Z
 Drake Mfg. Co., 1713 W. Hubbard St., Chicago 22, Ill.—O,P,Z
 EBY INC., H. H., 4700 Stenton Ave., Philadelphia 44, Pa.—L
 Eldema Corp., 5627 E. Beverly Blvd., Los Angeles 22, Calif.—Q,Z
 Elm Labs., 18 S. Broadway, Dobbs Ferry, N.Y.—E,H,T
 Emeloid Co., 1239 Central Ave., Hillside, N.J.—E,F,H,L,O,T,U,W
 ERCA Tool Die & Stamping Co., 19 Ash St., Brooklyn 22, N.Y.—T
 Erie Resistor Corp., 644 W. 12th St., Erie, Pa.—E,H,I,L,T,U
 Feay Co., Neal, 427 Olive St., Santa Barbara, Calif.—E,H,I,J,K,T,W
 Federal Screw Products Inc., 224 W. Huron St., Chicago 10, Ill.—L,N,O,P,Q,Z
 GEE-LAR MFG. CO., 819 Elm St., Rockford, Ill.—K,L,M,P,Q,U,V,X
 General Cement Mfg. Co., 919 Taylor Ave., Rockford, Ill.—A,L,M,O,P,Q,U,V,X

OMISSIONS

This electronic industries directory has been compiled with the utmost care and thoroughness. Listings have been omitted in all cases where, after three requests, a company has failed to return our directory questionnaire or otherwise verify its activity.

GENERAL ELECTRIC CO., Apparatus Div., 1 River Rd., Schenectady 5, N.Y.—N,O,P,S
 GENERAL ELECTRIC CO., LAMP DIV., Nela Park, Cleveland 12, Ohio—N,Q,Z
 General Products Corp., Union Springs, N.Y.—L
 GENERAL RADIO CO., 275 Mass Ave., Cambridge 39, Mass.—E,L
 Gite Molding Corp., 4600 W. Huron St., Chicago 41, Ill.—F,H,L,T
 Glass & Bro., Harry G., 10 Van Cortlandt Ave., E., New York 65, N.Y.—J,T
 Hart Mfg. Co., 110 Bartholomew Ave., Hartford 1, Conn.—P,Q
 HELIPOT CORP., 916 S. Meridian Ave., S. Pasadena, Calif.—E
 HEMINWAY & BARTLETT MFG. CO., 500 5 Ave., New York 36, N.Y.—A
 Herzog Miniature Lamp Works, 12-23 Jackson Ave., Long Island City, N.Y.—P,Q
 Hopp Press Inc., 460 W. 34 St., New York 1, N.Y.—H,T,W
 Hudson Lamp Co., 528 Elm St., Arlington, N.J.—N,Q,Z
 Industrial Devices, Edgewater, N.J.—P
 Industrial Television Inc., 369 Lexington Ave., Clifton, N.J.—E,L
 Insulating Fabricators of New England Inc., 69 Grove St., Watertown 72, Mass.—E,I,T
 Inauline Corp. of America, 186 Granite St., Manchester N.H.—J,K,L,T,U
 JAN Hardware Mfg. Co., 75 N. 11th St., Brooklyn 11, N.Y.—L,S
 JFD Mfg. Co., 6101 16th Ave., Brooklyn 4, N.Y.—A,L,U,V
 JOHNSON CO., E. F., Wasca, Minn.—E,H,L,N,O,P,Q,R,Z
 KELLOGG SWITCHBOARD & SUPPLY CO., 79 W. Monroe, Chicago, Ill.—F,N,O,P,Q,Z
 Keystone Electronics Corp., 423 Broome St., New York 12, N.Y.—R,S
 Keystone Watch Case Div., Riverside Metal Co., 1 Pavilion Ave., Riverside, N.J.—H
 Klise Mfg. Co., 50 Cottage Grove St., SW Grand Rapids 2, Mich.—M
 Krenzel Mfg. Co., 227 Fulton St., New York 7, N.Y.—D,H,J,T
 Kurz-Kasch, Inc., 1420 S. Broadway, Dayton 1, Ohio—L
 Labelon Tape Co., 450 Atlantic Ave., Rochester 3, N.Y.—D
 Leecraft Mfg. Co., 60 Greene St., New York 12, N.Y.—N,O,P,Q,Z
 Luminous Resins, 166 W. Washington St., Chicago 2, Ill.—E,F
 MALLORY & CO. P. R., 8029 E. Washington St., Indianapolis 6, Ind.—L,L
 Marco Industries Co., 207 S. Helena St., Anaheim, Calif.—Z
 Matchless Electric Co., 1700 Washington Blvd., Chicago 12, Ill.—N,Q
 Mayfair Molded Products Corp., 4440 Elston Ave., Chicago 39, Ill.—V
 Metalcraff, Inc., 1619 S. Federal Ave., Mason City, Iowa—T
 Metal Products Co., Craighead St., Nashville 4, Tenn.—T
 Meyercord Co., 5323 W. Lake, Chicago, Ill.—D
 Mica Insulator Co., P.O. Box 1076, Schenectady 1, N.Y.—E,I,J,T
 Mullen Mfg. Co., James, 150 Exchange St., Malden, Mass.—E,G,L,R,S
 Miller Dial & Name Plate Co., 4400 N. Temple City Blvd., El Monte, Calif.—E,T
 Miller Electric Co., P. O. Box 1827, Jacksonville, Fla.—T,W
 Molded Insulation Co., 335 E. Price St., Philadelphia 44, Pa.—L
 Molding Corp. of America, 40 Church St., Pawtucket, R.I.—L
 NAER Corp., 11777 Santa Monica Blvd., West Los Angeles 25, Calif.—L
 Nameplates, Inc., 425 E. 101st St., Brooklyn 12, N.Y.—J,T
 NATIONAL CO., 61 Sherman St., Malden 48, Mass.—E,G,K,L,R,S,U
 Natural Lighting Corp., 1124 E. Colo. Blvd., Glendale 5, Calif.—T
 Neosil Products Div. Rubber Associates, 850 Metropolitan Ave., Brooklyn 11, N.Y.—L
 New Products Co., 1071 E. 54 St., Indianapolis 20, Ind.—C,H,I,J,K,L,T
 Nichols Products Co., 325 W. Main St., Moorestown, N.J.—E,U,W
 North American Model Products, Inc., 9802 Warwick Rd., Warwick, Va.—T
 North Electric Mfg. Co., S. Market St., Galion, Ohio—F
 North Shore Nameplate Co., Bank of Manhattan Bldg., Bayside, L.I., 61, N.Y.—T
 Owens-Illinois Glass Co., Madison & St. Clair Sts., Toledo 1, Ohio—L,T
 Oxford Electric Corp., 3911 S. Michigan Ave., Chicago 15, Ill.—N,Q
 Pacific Transducer Corp., 11921 W. Pico Blvd., Los Angeles 64, Calif.—K
 Palmer, Inc., M. V., 4002 Fruit Valley Rd., Vancouver, Wash.—F
 Petroff, P. A., 127 Water St., New York 5, N.Y.—E,G,U
 PHAOSTRON CO., 151 Pasadena Ave., S. Pasadena, Calif.—E,L
 Philmore Mfg. Co., 113 University Pl., New York 3, N.Y.—L,O,P,Q
 Pix Mfg. Co., 5 Oliver St., Newark 2, N.J.—Y
 Plasticraft Products Co., 1 Station Pl., W. Nyack, N.Y.—T,W
 Poray, Inc., 3369 W. Grand Ave., Chicago 51, Ill.—C,H,T,W

Ports Mfg. Co., 3265 Belmont Ave., Fresno 2, Calif.—T,W
 Precise Measurements Co., 942 Kings Hwy., Brooklyn 23, N.Y.—W
 Precision Plastic Products, 225 W. Recipe Ave., Chicago 7, Ill.—H,I,J
 Premier Metal Etching Co., 21-03 44th Ave., Long Island City 1, N.Y.—E,H,J,U
 Radio City Products Co., 101 West 31 St., New York 1, N.Y.—K,L
 Ralston Record Co., 110 Cedar Ave., Pitman 15, N.J.—L
 RAYTHEON MFG. CO., Waltham 54, Mass.—L
 Research Instrument Co., 233 Broadway, New York 7, N.Y.—G,T,W
 Reiner Electronics Co., 152 W. 25 St., New York 1, N.Y.—L
 Republic Spec. Service, 232 Washington St., New York 7, N.Y.—D
 Rhode Island Electronics, Inc., Mill St., Lonsdale, R.I.—U
 Richardson Co., Lockland, Cincinnati 15, Ohio—L
 Rigidized Metals Corp., 657 Ohio St., Buffalo 3, N.Y.—J
 Rohan Co., Topsfield, Mass.—K,L,N
 ROMAR PLASTICS INC., 1311 E. Main St., St. Charles, Ill.—L,U
 SAMPSON CHEMICAL & PIGMENT CORP., 2830 W. Lake St., Chicago 12, Ill.—D,E,J,T,U
 Screw Corp. of America, 103 Park Ave., New York 17, N.Y.—K
 Sierra Electronic Corp., 1050 Brittan Ave., San Carlos 2, Calif.—E
 Sillocks-Miller Co., 10 W. Parker Ave., Maplewood, N.J.—E,F,N,U
 Silver Bay Equip. Co., 5004 20th NW Seattle 7, Wash.—H,J,T,W
 Smith, Inc., Herman H., 436 18 St., Brooklyn 15, N.Y.—N,O,P,Q,U
 Spaulding Fibre Co., 310 Wheeler St., Tonawanda, N.Y.—H
 Stemac Co., 1277 S. Cherokee St., Denver 10, Colo.—T
 Sun Dial Corp., P.O. Box 326, Caldwell, N.J.—E,F,H,O,T,U,W
 Switzer Bros., 4732 St. Clair Ave., Cleveland 3, Ohio—D
 SYLVANIA ELECTRIC PRODUCTS, 1740 Broadway, New York 19, N.Y.—H,L
 Tech-Master Corp., 443 Broadway, New York 13, N.Y.—K
 Technicraft Supply Co., 1156 Commonwealth Ave., Boston 34, Mass.—E
 TECHNOLOGY INSTRUMENT CORP., 531 Main St., Acton, Mass.—L
 Telephonics Corp., Park Ave., Huntington, N.Y.—F,K
 Tele Plastics Co. Div. Willmax Mfg. Co., 202 Broadway, Brooklyn 11, N.Y.—E,H
 Thompson Clock Co., H. Co., 84 Federal St., Bristol, Conn.—C,D,G,H,I,K,L,N,O,P,Q,T,U,V,W,X
 Toman & Co., E., 8700 W. 47th St., Lyons, Ill.—T
 Topflight Tape Co., 116 E. Market St., York, Pa.—T,Y
 Transite Electronics, Corp., 5720 W. Armitage Ave., Chicago 39, Ill.—O,Q
 TUNG-SOL ELECTRIC INC., 95 8 Ave., Newark 4, N.J.—N,Q
 T-V Products Co., 152 Sandford St., Brooklyn 5, N.Y.—U
 Ucinite Co., Div. United-Carr Fastener Corp., 459 Watertown St., Newtonville, Mass.—N,P,Q,U
 United-Carr Fastener Corp., 31 Ames St., Cambridge 42, Mass.—N,U,X
 Universal Aviation Equipment, 362 5th Ave., New York 1, N.Y.—E,F,J,L,Q,T,W
 U. S. ENG'G. CO., 521 Commercial St., Glendale 3, Calif.—K,R,S,U
 U. S. Radium Corp., 535 Pearl St., New York 7, N.Y.—E,J,L,T
 Vari-Equip. Co., 35 Grove St., White Plains, N.Y.—L
 Waldom Electronics Inc., 911 N. Larrabee St., Chicago 10, Ill.—E,H,I,J,K,L,T,R,S,U,W
 Walsco Electronics Corp., 3225 Exposition Pl., Los Angeles 18, Calif.—A,K,L
 Western Color-Graphics, 39 S.E. Salmon St., Portland 14, Ore.—H,I,Q,T,W
 Willson Camera Co., 1401 Lawrence Rd., Havertown, Pa.—T

28—DRAFTING ROOM EQUIPMENT

Drafting chairs L
 Drafting instruments A
 Drafting paper B
 Drafting tables C
 Electric erasers D
 Ink E
 Lighting equipment F
 Pencils & accessories G
 Reproducing machines, blueprint H
 Scale drawing machines M
 Sensitized paper I
 Slide Rules J
 Symbol stamps N
 Tracing cloth K

ELECTRONIC INDUSTRIES DIRECTORY

Acheson Colloids Co., 1950 Washington Ave., Port Huron, Mich.—E
 Art Specialty Co., 3245 W. Lake St., Chicago 24, Ill.—F
 Berger Scientific Supplies, 342 Madison Ave., New York 17, N.Y.—A,J
 Bowen & Co., 4712 Bethesda Ave., Bethesda, Md.—A
 Bruning Co., Charles, 4700 Montrose Ave., Chicago 41, Ill.—A,B,C,D,E,F,G,H,I,J,K
 C-Thru Ruler Co., 827 Windsor St., Hartford, Conn.—A,J
 Dietzgen Co., Eugene, 2425 Sheffield Ave., Chicago, Ill.
 DuPont de Nemours & Co., E.I., 10th & Market Sts., Wilmington, Del.—I
 Eagle Pencil, 703 E. 13 St., New York, N.Y.—G
 Eberhard Faber Pencil Co., 37 Greenpoint Ave., Brooklyn 22, N.Y.—G
 Electrofilm Inc., 7116 Laurel Canyon Blvd., N. Hollywood, Calif.—H,J
 GENERAL ANILINE & FILM CORP., Ozalid Div., Johnson City, N.Y.—H,I
 Gerber Scientific Instrument Co., 162 State St., Hartford, Conn.—C
 GRAYBAR ELECTRIC CO., 420 Lexington Ave., New York 17, N.Y.—F
 Griffin Co., John, 2157 James Ave., St. Paul 5, Minn.—G,N
 Hollison Mills, Lenox St., Norwood, Mass.—K
 Kent Metal Mfg. Co., 490 Johnson Ave., Brooklyn 37, N.Y.—F
 Keuffel & Esser, Hoboken, N.J.—A
 Label Tape Co., 450 Atlantic Ave., Rochester 3, N.Y.—G
 Patrick Brothers Inc., 1938 N. Springfield Ave., Chicago 47, Ill.—F
 Pease Co., C. F., 2601 W. Irving Park Rd., Chicago 18, Ill.—C,H,I,L
 Peck & Harvey, 5650 N. Western Ave., Chicago 45, Ill.—H
 Post Co., Frederick, 3650 N. Avondale, Chicago, Ill.—A,H,C,D,E,G,H,I,J,K,L
 Precise Measurements Co., 942 Kings Highway, Brooklyn 23, N.Y.—A,M,N
 Technical Products Co., 19 N. Dunlap, Medical Center, Memphis 1, Tenn.—A,C,J,L
 Thompson Clock Co., H.C., 38 Federal St., Bristol, Conn.—A,B,C,D,E,F,G,H,I,J,K
 Universal Drafting Machine, 7960 Lorain Ave., Cleveland 2, Ohio—A
 Verd-a-Ray Corp., 615 Front St., Toledo 6, Ohio—F
 Vibroscope Co., 6 E. 39 St., New York, N.Y.—A
 Williams, Brown & Earle, 904 Chestnut St., Philadelphia 7, Pa.—A,B,C,D,E,F,G,H,I,J,K,L

29—FILTERS

Filters, antenna A
 Filters, audio H
 Filters, bandpass B
 Filters, color L
 Filters, IF E
 Filters, interference F
 Filters, line M
 Filters, microwave K
 Filters, needle scratch I
 Filters, noise suppressing J
 Filters, telemetering N
 Filters, toroidal C
 Filters, vestigial sideband G
 Filters, wavetrap D

Acme Electronics Inc. (Sub. Aerovox Corp.) 2724 Peck Rd., Monrovia, Calif.—A,B,C,D,E,F,G,H,J
 Acro Products Co., 369 Shurs Lane, Philadelphia 28, Pa.—B,H
 Acro Transformer & Mfg. Corp., 26-02 4 St., Long Island City 2, N.Y.—B,H
 Advance Electronics Co., 8510 N. End Ave., Oak Park 37, Mich.—A,D,F
 Aerolite Electronics Corp., 507 26 St., Union City, N.J.—C,E
 Aeronautical Radio Mfg. Co., 155 1st St., Mineola, N.Y.—F,J
 AEROVOX CORP., 740 Belleville Ave., New Bedford, Mass.—B,E,F,I,J
 Ahrendt Instrument Co., 4910 Calvert Rd., College Park, Md.—C
 Air Associates, Teterboro, N.J.—F
 Airmax Products Co., P. O. Box 137, Middle River Baltimore 20, Md.—B,C,F,H
 All-Tronics, Inc., 2 Secatog Ave., Port Washington, N.Y.—F,J
 Aladdin Radio Industries, 703 Murfreesboro Rd., Nashville, Tenn.—F,J
 American Electronics Co., 1203 Bryant Ave., New York 69, N.Y.—A
 Amplifier Corp. of America, 398 Broadway, New York 13, N.Y.—H

Anchor Electronics, Inc., 717 Sip St., Union City, N.J.—A,B,D,E
 Artted Co., Inc., 367 Worthington St., Springfield 3, Mass.—A,B,D,E
 ASTRON CORP., 255 Grant Ave., E. Newark, N.J.—B,E,F,H,J
 Atlantic Transformer Corp., 30 Hynes Ave., Groton, Conn.—H
 Atlas Coil Winders, Inc., 39 Manhattan St., Stamford, Conn.—B
 Automatic Mfg. Corp., 65 Gouverneur St., Newark 4, N.J.—D,E
 Balco Research Labs., 49 Edisor Pl., Newark 2, N.J.—A,B,D,F
 Barker & Williamson, 237 Fairfield Ave., Upper Darby, Pa.—A,B,D,F
 Barlow Electrical Mfg. Co., 155 E. 128th St., New York 35, N.Y.—A
 Basler Electric Co., 601 5th St., Highland, Ill.—H,C,F,H
 Bird Electronic Corp., 1800 E. 38th St., Cleveland 14, Ohio—A
 Birnbach Radio Co., 145 Hudson St., New York 13, N.Y.—A,H
 Bittermann Electric Co., Barlow & Grove Sts., Canaan, Conn.—C
 Broadway Coil Co., 5638 N. Broadway, Chicago 40, Ill.—A,B,E,F,H
 BUD RADIO INC., 2118 E. 55 St., Cleveland 8, Ohio—F
 BURNELL & CO., 45 Warburton Ave., Yonkers 2, N.Y.—B,C,G,H,N
 Calbest Eng'g & Electronics Co., 828 N. Highland Ave., Hollywood 38, Calif.—B,D,E,F
 Caledonia Electronics & Transformer Corp., P.O. Box 298, Caledonia, N.Y.—H
 Cambridge Thermionic Corp., 445 Concord Ave., Cambridge 38, Mass.—A,B,D,E
 Carad Corp., 2350 Bay Rd., Redwood City, Calif.—B,C,J
 CENTRALAB DIV., GLOBE-UNION INC., 900 E. Keefe Ave., Milwaukee 1, Wis.—H
 Centronics Corp., 21-04 122nd St., College Point 66, N.Y.—A,B,D,E,F
 Century Geophysical Corp., 3406 W. Washington Blvd., Los Angeles 18, Calif.—B
 CGS Laboratories, Inc., 391 Ludlow St., Stamford, Conn.—A,B,E
 Chicago Electronic Eng'g. Co., 3223 Armitage Ave., Chicago 47, Ill.—B
 Chicago Magnetic Control, 1616 Damon Ave., Chicago, Ill.—B
 Chicago Standard Transformer Corp., Addison & Elkton, Chicago 18, Ill.—H,C,H
 Church Co., George H., 5109 Halifax Ave., Minneapolis 10, Minn.—F,J
 CINEMA ENG'G DIV., AEROVOX CORP., 1100 Chestnut St., Burbank, Calif.—H
 Coilcraft, Inc., Jandus Rd., Cary, Ill.—D
 Coil Eng'g & Mfg. Co., 200 Main St., Roanoke, Ind.—H
 COMMUNICATION ACCESSORIES CO., Hickman Mills, Mo.—B,C,H
 Conn. Telephone & Electric Co., 70 Britannia St., Meriden, Conn.—C
 Control Electronics Co., 1925 New York Ave., Huntington Station, N.Y.—A,G
 Cornell-Dubilier Electric Corp., 333 Hamilton Blvd., S. Plainfield, N.J.—A,B,E,F,H,J
 Danbury-Knudsen, Inc., 15 Thorpe St., Danbury, Conn.—B
 DeCoursey Eng'g. Lab., P. O. Box 235, Los Angeles 25, Calif.—B,C,H,J
 Delta Radio Co., 115 Worth St., New York 13, N.Y.—A,B,C,D,E,F
 DeMornay-Bonardi, Inc., 780 S. Arroyo Pkwy., Pasadena, Calif.—K
 Deutschmann Corp., Tohe, Providence Highway, Norwood, Mass.—A,B,C,D,E,F,H,J
 Digital Products, Inc., 7643 Fay Ave., LaJolla, Calif.—D
 D & R Ltd., 402 E. Gutierrez St., Santa Barbara, Calif.—H
 Drake Co., R. L., 18 E. Central Ave., Miamisburg, Ohio—B,D,F,J
 Dressen-Barnes Corp., 250 N. Vinedo Ave., Pasadena 8, Calif.—C
 Dubrow Development Co., 235 Penn St., Burlington, N.J.—B,C,H
 DUMONT LABS. INC., Instrument Div., 760 Bloomfield Ave., Clifton, N.J.—L
 Dunkle Coil Co., 3257 W. 6 St., Los Angeles, Calif.—D
 DX Radio Products Co., 2300 Armitage Ave., Chicago 47, Ill.—H
 Eldico of N.Y., Inc., 70-72 E. 2nd St., Mineola, L.I., N.Y.—B,D,F
 ELECTRALAB, INC., 105 1st St., Cambridge 41, Mass.—B,D,F
 Electro Assemblies, Inc., 2935 W. Belmont Ave., Chicago 18, Ill.—B
 Electronic Transformer Co., 207 W. 25 St., New York, N.Y.—B,H
 Electro-Technics, Inc., 198 Albion Ave., Paterson, N.J.—A,B,D
 Elk Electronic Labs., Inc., 333 W. 52nd St., New York 19, N.Y.—B,E
 El-Rad Mfg. Co., 2800 W. Cullom Ave., Chicago 18, Ill.—D
 Empire Coil Co., 85 Beechwood Ave., New Rochelle, N.Y.—A,E,H
 EPSCO Electronics, 140 Liberty St., New York, N.Y.—D,F
 Enco Products Inc., 2500 Atlantic Ave., Brooklyn 7, N.Y.—B,H
 Erie Resistor Corp., 644 W. 12th St., Erie, Pa.—J
 Esc Corp., 578 E. 161st St., New York 56, N.Y.—A,B,D,E,F,G
 Fairchild Recording Equip Co., Whitestone 57, N.Y.—H

East & Co., John E., 3101 N. Pulaski Rd., Chicago 41, Ill.—F
FEDERAL TELEPHONE & RADIO CO., Div. I.T.&T. Corp., 100 Kingsland Rd., Clifton, N.J.—B
Ferranti Electric Inc., 30 Rockefeller Plaza, New York 20, N.Y.—H
Filtron Co., 131-15 Fowler Ave., Flushing, L.I., N.Y.—F
Fisher Radio Corp., 21-21 44th Dr., Long Island City 1, N.Y.—H,I,J
Forbes & Wagner Inc., 339 Central Ave., Silver Creek, N.Y.—A,D,E
FRED TRANSFORMER CO., 1718 Weirfield St., Brooklyn 27, N.Y.—B,C,H
GALBRAITH & SON, 450 6th Ave., New York 11, N.Y.—F
Gates Radio Co., 123 Hampshire St., Quincy, Ill.—A,B,C,H
GENERAL ELECTRIC CO., Radio-TV Dept., Electronics Park, Syracuse, N.Y.—D
GENERAL RADIO CO., 275 Mass. Ave., Cambridge 39, Mass.—B,H
Geotronic Labs., Inc., 1314 Cedar Hill Ave., Dallas 11, Texas—B
GERTSCH PRODUCTS, 11846 Miss. Ave., Los Angeles 25, Calif.—B
Gotham Audio Development Corp., 2 W. 46 St., New York 36, N.Y.—H
Gramer Transformer Corp., 2734 N. Pulaski Rd., Chicago 39, Ill.—C
GUDEMAN CO., 9200 Exposition Blvd., Los Angeles 34, Calif.—B,C,F,H,J
GUDEMAN CO., 340 W. Huron St., Chicago 10, Ill.—F,J
GULTON MFG. CORP., 212 Durham Ave., Metuchen, N.J.—B,H
Hamlyn Electronics Corp., 32 Holman Blvd., Hicksville, N.Y.—A,B,E,F,H
Harmon Electronics Co., 11431 Truman Rd., Independence, Mo.—B,D
Hillburn Electronic Products Co., 55 Nassau Ave., Brooklyn 22, N.Y.—A,D
HI Q Div. Aerovox Corp., Olean, N.Y.—B,D,F
Hogan Labs., Inc., 155 Perry St., New York 14, N.Y.—B,G,H
Hopkins Eng'g. Co., 2082 Lincoln Ave., Altadena, Calif.—B,C,D,F,H,J
Hughey & Phillips, P. O. Box 686, Encino, Calif.—A
Hycor Co., 11423 Vanowen St., N. Hollywood, Calif.—B
IPEA, Inc., Regency Div., 7900 Pendleton Pike, Indianapolis 26, Ind.—B,F
Industrial Condenser Co., 3243 N. Calif Ave., Chicago 18, Ill.—F,J
Insuline Corp. of America, 186 Granite St., Manchester, N.H.—A,J
Jerrold Electronics Corp., 26th & Dickinson Sts., Philadelphia 46, Pa.—F
JFD Mfg. Co., 6101 16 Ave., B'klyn., N.Y.—A
Jobbins Electronic Enterprises, 500 Hamilton Ave., Menlo Park, Calif.—B
JOHNSON CO., E. F., Waaseca, Minn.—A
Johnson Electronics, P. O. Box 2023, Municipal Airport, Orlando, Fla.—B,D
Johnson Labs., Industries, Willard Rd., Norwalk, Conn.—A,B,D
Kalbfell Labs., 1090 Morena Blvd., San Diego 10, Calif.—B,H
KELLOGG SWITCHBOARD & SUPPLY, 79 W. Monroe St., Chicago 3, Ill.—B,C
Kings Electronics Co., 40 Marbledale Rd., Tuckahoe, N.Y.—A
Kluge Co., Myron E., P.O. Box 26, Platte Center, Nebr.—A,F
Krohn-Hite Instrument Co., 580 Mass. Ave., Cambridge 39, Mass.—B,F,H
K-V Transformer Corp., 20 E. Franklin St., Danbury, Conn.—B,F
LEAR, Inc., 11516 W. Pico Blvd., Los Angeles 64, Calif.—A,B,E,F
Lenkurt Electric Co., 1105 County Rd., San Carlos, Calif.—B,C
Leonard Electric Products Co., 67 34 St., Brooklyn 32, N.Y.—A,B,C,D,E,F,G,H,I,J
LePace Mfg. Co., 75-19 64th St., Glendale 27, N.Y.—B
Lieco, Inc., 147 Ocean Ave., Lynbrook, N.Y.—K
Magnetic Instrument Co., 82 Main St., W. Orange, N.J.—B,C,D,F,H
Magnetics Research Co., 142 King St., Chappaqua, N.Y.—C
Magnex Corp., 90-28 Van Wyck Expressway, Jamaica 18, N.Y.—A,B,D
MALLORY & CO., P.R., 3029 E. Washington St., Indianapolis 6, Ind.—F
Mattson-Cowley Corp., 1487 Lincoln Ave., Pasadena 3, Calif.—A,B
May Eng'g Co., 6055 Lankershim Blvd., No. Hollywood, Calif.—B
Mercury Mfg. Corp., Main Office—45 Brown St., Buffalo 11, N.Y.—B
Merit Coil & Transformer Corp., 4427 N. Clark St., Chicago 40, Ill.—B,D
Micamold Radio Corp., 1087 Flushing Ave., Brooklyn 37, N.Y.—B,C,F,J
MICO INSTRUMENT CO., 75 Trowbridge St., Cambridge 38, Mass.—C
Microlab, Inc., 71 Okner Pkwy., Livingston, N.J.—A,B
Microtran Co. Div. Crest Labs., 84-11 Rockaway Beach Blvd., Rockaway Beach, L.I., N.Y.—H
Miller Co., J.W., 5917 S. Main St., Los Angeles 3, Calif.—B,D,E,F,I,J
Milwaukee Transformer Co., 5231 N. Hopkins St., Milwaukee 9, Wis.—A,B,C,E,F,H,I,J

Mitchell Industries Inc., Box 17, Municipal Airport, Mineral Wells, Texas—J
Mohawk Business Machines Corp., 944 Halsey St., Brooklyn 37, N.Y.—H
Monitor Products Co., 815 Fremont Ave., S. Pasadena, Calif.—E
Munston Mfg. & Service, Inc., Beech St., Islip, N.Y.—A,B,H
National Capacitor Co., 585 Washington St., Quincy 69, Mass.—B
National Electronics Mfg. Corp., 42-08 Vernon Blvd., Long Island City 1, N.Y.—F
Neptune Electronics Co., 433 Broadway New York 13, N.Y.—B,C,H
Networks Electronic Corp., 14806 Oxnard St., Van Nuys, Calif.—H,C
Non-Linear Systems, Box "S," Del Mar, Calif.—D
North Hills Electric Co., 246-32 54th Ave., Douglaston, L.I. 62, N.Y.—A,B,D,E,F
Ortho Filter Corp., 196 Albion Ave., Paterson 2, N.J.—A,B,C,D,E,F,G,H,I,J
Peerless Electrical Products, Div. Altec Lansing Corp., 9356 Santa Monica Blvd., Beverly Hills, Calif.—H
Permoflux Corp., 4900 W. Grand Ave., Chicago 39, Ill.—H
Petroff, Peter A., 127 Water St., New York 5, N.Y.—A
PHOTOCIRCUITS CORP., Glen Cove, N.Y.—A,B,D,E,F,G
Photovolt Corp., 95 Madison Ave., New York 16, N.Y.—F
Plymouth Electronics Corp., 50 Kingsbury St., Worcester, Mass.—A
Polyphase Instrument Co., 705 Haverford Rd., Bryn Mawr, Pa.—B
Portchester Instrument Corp., 114 Wilkins Ave., Portchester, N.J.—K
Potter Co., 1950 Sheridan Rd., North Chicago, Ill.—F,J
Precision Electronics Inc., 9101 King Ave., Franklin Park, Ill.—A
Premier Instrument Corp., 52 W. Houston St., New York 12, N.Y.—K
PRODELIN, INC., 307 Hergen Ave., Kearny, N.J.—G
Pulse Techniques, Inc., 1411 Palisade Ave., W. Englewood, N.J.—H
PYRAMID ELECTRIC CO., 1445 Hudson Blvd., N. Bergen, N.J.—F
QLC Corp., 10 Aubrey St., Summit, N.J.—E
Q-Line Mfg. Corp., 1562 61st St., Brooklyn 19, N.Y.—A
RADIO CORP. OF AMERICA, Tube Div., 415 S. 5th St., Harrison, N.J.—B,H
Radio Industries, Inc., 5225 N. Ravenswood Ave., Chicago 40, Ill.—A,B,D,E,F
Radio Music Corp., 84 S. Water St., Port Chester, N.Y.—B,H,I
Radionic Controls, Box 237, Herrin, Ill.—B,H
Railway Communication, Inc., Raytown, Mo.—B,C,H,M
RAYPAR, INC., 7800 W. Addison St., Chicago 34, Ill.—C
Resdel Eng'r., 2351 Riverside Dr., Los Angeles 39, Calif.—A,B,D,F
Rhode Island Electronics, Inc., Mill St., Lonsdale, R.I.—B,C,F
Rollins Corp., P.O. Box 213, Mulberry St., Lewes, Dela.—H
Ruckelshaus Labs., J. G., 110 Pomeroy Rd., Madison, N.J.—J
Saratoga Industries, Ballston Ave., Saratoga Springs, N.Y.—B,C,H
Scott, Inc., Hermon Hosmer, 385 Putnam Ave., Cambridge 39, Mass.—B,H,I,J
Selectar Industries, Inc., 3100 Ocean Parkway, Brooklyn 35, N.Y.—A,B,D,F
Setco Div. Stromberg-Carlson, 3127 Holmes St., Dallas 15, Texas—B,C
Signal Equipment Co., 2706 3 Ave., Seattle 1, Wash.—B,F,J
Silver Bay Equip. Co., 5004 20th NW, Seattle 7, Wash.—B,D
Sonar Radio Corp., 3050 W. 21st St., Brooklyn 24, N.Y.—B,F,H
Southern Electric & Transmission Co., 3127 Holmes St., Dallas, Texas—B
Southern Electronics Corp., 239 W. Orange Grove Ave., Burbank, Calif.—B,H
Southwestern Industrial Electronics Co., 2831 Post Oak Rd., Houston, Texas—B,C,H
Sparton Radio TV, 2400 E. Ganson St., Jackson, Mich.—D
Specialties, Inc., Skunks Misery Rd., Syosset, L.I., N.Y.—B
Spencer-Kennedy Labs., 186 Mass. Ave., Cambridge 39, Mass.—B,H
Sperry Gyroscope Co., Great Neck, N.Y.—K
SPRAGUE ELECTRIC CO., 233 Marshall St., North Adams, Mass.—F
Square Root Mfg. Co., 391 Saw Mill River Rd., Yonkers, N.Y.—A,B,C,D,E,F,H,J
Standard Coil Products Co., 2329 N. Pulaski Rd., Chicago 39, Ill.—A,B,D
STANDARD ELECTRONICS CORP., 285 Emmet St., Newark 5, N.J.—G
Stanwyck Winding Co., 137 Walsh Ave., Newburgh, N.Y.—A,D
Stephens Mfg. Corp., 8538 Warner Dr., Culver City, Calif.—B
Superox Electronics Corp., 23 Atherton St., Yonkers, N.Y.—A,B,D,E,F
Technical Appliance Corp., 1 Taco St., Sherburne, N.Y.—A,D
Technical Materiel Corp., 700 Fenimore Rd., Mamaroneck, N.Y.—B,C,H
Technicraft Labs., Inc., Thomaston-Waterbury Rd., Thomaston, Conn.

Tele-Matic Industries, Inc., 1 Joralemon St., Brooklyn 2, N.Y.—A,D,E,F
Television Labs, Inc., 5045 W. Lake St., Chicago 44, Ill.—B
Telesivo Corp., 1415 W. Golf Rd., Des Plaines, Ill.—F
TEXAS INSTRUMENTS INC., 6000 Lemmon Ave., Dallas 9, Texas—B,C,E,F,H,J
Thordarson-Meisner Mfg., Mt. Carmel, Ill.—F
T. J. Mfg. Corp., 1020 S. Josephine St., Martinsville, Ind.—A,B,E
Torwico Electronics, 967 Frelinghuysen Ave., Newark 5, N.J.—B,C,H
Transformer Engineers, 161 E. California St., Pasadena 1, Calif.—B
Transformers Inc., 532 North St., Endicott, N.Y.—B,C,H
Transformer Technicians, 2608 N. Cicero Ave., Chicago 39, Ill.—B,H
Triad Transformer Corp., 4055 Redwood Ave., Venice, Calif.—B,C,H,I
Tri-Dex Co., P. O. Box 1207, Lindsay, Calif.—E
United Pressed Products Co., 741 W. Harrison St., Chicago 7, Ill.—A,D
United Technical Labs., Morristown, N.J.—A,B,F
Universal Mfg. Co., 410 Hillside Ave., Hillside, N.J.—C
U.S. ELECTRONICS CORP., 275 Warren St., Lyndhurst, N.J.—A,B,D,E,F,H,I,J
Union Spring & Mfg. Co., 1057 Summit Ave., Jersey City 7, N.J.—A,B,D
Vanguard Electronics Co., 3384 Motor Ave., Los Angeles 34, Calif.—D,E
VECTRON, INC., 400 Main St., Waltham 54, Mass.—B,C,E,H
Vidaire Electronics Mfg. Co., 576 W. Merrick Rd., Lynbrook, Long Island, N.Y.—A,B,D,E,F,J
Vidson Electric Corp., 902 E. Michigan St., Indianapolis 2, Ind.—F
Vokar Corp., Huron River Dr., Dexter, Mich.—F
WAVEFORMS, INC., 333 6th Ave., New York 14, N.Y.—H
West Coast Electronics Co., 5873 W. Jefferson Blvd., Los Angeles 16, Calif.—A,B,D
White Industries, Inc., 421 W. 54 St., New York 19, N.Y.—B,E,F,J
White Instrument Labs., 203 Riverside Dr., Austin 4, Tex.—H
Wilcox Research Co., 1122 Aqua Vista St., N. Hollywood, Calif.—E,F,G
Wilmar Mfg. Co., 2715 E. 14th St., Kansas City 27, Mo.—A,E,F,H
Wirt Co., 5221 Greene St., Philadelphia 44, Pa.—E
Yonkers Industries, 28-30 School St., Yonkers, N.Y.—F
Z & W Machine Products, 5100 St. Clair Ave., Cleveland 3, Ohio—A

30—GAGES

Gages, comparator	A
Gages, dimension	B
Gages, displacement	C
Gages, fuel, electronic	D
Gages, inspection, electronic	E
Gages, ionization	F
Gages, needle pressure	G
Gages, pirani	J
Gages, pressure, electronic	H
Gages, strain	K
Gages, surface roughness	L
Gages, temperature	N
Gages, vacuum	I
Gages, wire	M

Acme Industrial Co., 200 N. Leflin St., Chicago 7, Ill.—L
Aero Electronics Co., 1512 N. Wells St., Chicago 10, Ill.—A,B,C,D,E
Air Associates, Teterboro, N.J.—C,D
Alina Corp., 401 Broadway, New York 13, N.Y.—A
American Instrument Co., 8050 Georgia Ave., Silver Spring, Md.—K
American Vacuum Products Corp., 11779 Santa Monica Blvd., W. Los Angeles 25, Calif.—I
Arlin Products, Inc., 13541 Auburn Ave., Detroit 23, Mich.—A,E
Atlantic Research Corp., 901 N. Columbus St., Alexandria, Va.—H
Autel Electronics Corp., 1950 Farmingdale Rd., Westfield, N.J.—E,H
Authorized Mfrs. Service Co., 919 Wyckoff Ave., Brooklyn 27, N.Y.—E
Automatic Temperature Control Co., 5212 Pulaski Ave., Philadelphia 44, Pa.—A,B,C,N
Aviation Eng'g Corp., 58-15 Northern Blvd., Woodside, L.I., N.Y.—D
Avien Aviation Eng'g Div., Avien-Knickerbocker, Inc., 58-15 Northern Blvd., Woodside 77, N.Y.—D,N
Baldwin-Lima-Hamilton Corp., Philadelphia 42, Pa.—H
Barton Electronics Inc., 955 Asylum Ave., Hartford 5, Conn.—E
BERKELEY SCIENTIFIC DIV. BECKMAN INSTRUMENTS INC., 2200 Wright Ave., Richmond, Calif.—E,H

Bone Eng'g Corp., 701 W. Broadway, Glendale 4, Calif.—D
 BOURNS LABS., 6135 Magnolia Ave., Riverside, Calif.—C,D,H,I
 Bristol Co., Waterbury 20, Conn.—D,I
 BRUSH ELECTRONICS CO., 3406 Perkins Ave., Cleveland 14, Ohio—E,K,I
 Buffalo Instrument Corp., 1780 Elmwood Ave., Buffalo 7, N.Y.—C
 Cambridge Instrument Co., 3033 Grand Central Terminal, New York 17, N.Y.—F
 Central Sales & Mfg. Corp., Denville, N.J.—F,I
 Central Scientific Co., 1700 W. Irving Park Rd., Chicago, Ill.—I
 Clegg Laboratories, Inc., 142 S. Livingston Ave., Livingston, N.J.—A,E
 Colvin Labs., 12 Court St., Morristown, N.J.—C
 CONSOLIDATED VACUUM CORP., 736 Ridge Rd., Rochester 3, N.Y.—F,G,I
 Control Eng'g. Corp., 560 Providence Highway, Norwood, Mass.—H
 Defender Instrument & Regulator Co., 815 Clark Ave., St. Louis 2, Mo.—I
 Dice Co., J. W., 1 Engle St., Englewood, N.J.—E
 Dillon & Co., W. C., 14620 Keswick St., Van Nuys, Calif.—K
 DoAll Co., 254 N. Laurel Ave., Des Plaines, Ill.—A
 Douglas Instrument Labs., 176 Norfolk Ave., Boston 19, Mass.—F,G
 FITEL-McCULLOUGH, INC., 798 San Mateo Ave., San Bruno, Calif.—F
 Electric Eye Equip. Co., 6 W. Fairchild St., Danville, Ill.—E
 Electrofilm Inc., 7116 Laurel Canyon Blvd., N. Hollywood, Calif.—B,E,L,M
 Electronic Control Corp., 1573 E. Forest Ave., Detroit 7, Mich.—B
 Electronic Products Co., 4755 Telegraph Rd., Los Angeles 22, Calif.—H
 Electron-Radar Products, 1041 N. Pulaski Rd., Chicago 51, Ill.—G
 Ellison Draft Gage Co., 548 W. Monroe St., Chicago 6, Ill.—I
 Endeveo Corp., 689 S. Fair Oaks Ave., Pasadena 2, Calif.—E,H,I
 Fielden Instrument, 2920 N. 4 St., Philadelphia 33, Pa.—A,C,D,E,H,K,L
 Flader Inc., Frederic, 583 Division St., N. Tonawanda, N.Y.—H
 GENERAL ELECTRIC CO., Apparatus Div., 1 River Rd., Schenectady 5, N.Y.—C,F,I,K,L
 GENERAL ELECTRIC CO., Tube Dept., 1 River Rd., Schenectady 5, N.Y.—G,H,I
 Gilmore Industries, Inc., 5713 Euclid Ave., Cleveland 3, Ohio—H
 Gotham Instruments Div., American Machine & Metals, Sellersville, Pa.—I
 Greenleaf Mfg. Co., 7814 Maplewood Ind. Ct., St. Louis 17, Mo.—D,E,H
 Gulton Mfg. Corp., 212 Durham Ave., Metuchen, N.J.—C,E,H,K,L
 Hastings Instrument Co., Superhighway at Pine Ave., Hampton, Va.—H,I
 Hayda Bros., P.O. Box 1226, Plainfield, N.J.—I
 Hays Corp., E. 8th St., Michigan City, Ind.—H
 Industrial Electronics, 8060 Wheeler St., Detroit 10, Mich.—A,B,C,E,H,K
 Industrial Electronics Co., Hanover, Mass.—B,D,M
 Industrial Nucleonics Corp., 1205 Chesapeake Ave., Columbus 12, Ohio—E
 Industrial Scientific Co., 34 W. 33 St., New York 1, N.Y.—E
 Iq Industries, 6110 Wilshire Blvd., Los Angeles 36, Calif.—A,B,C,E
 Leiman Bros. Inc., 146 Christie St., Newark 5, N.J.—I
 Mackenzie Products Co., 141 Brewery St., New Haven 11, Conn.—A,B,C,E
 Manning Maxwell & Moore, 250 E. Main St., Stratford, Conn.—H,I
 Metron Instrument Co., 432 Lincoln St., Denver 9, Colo.—A
 Metrotype Corp., 6100 Archer Rd., Summit, Ill.—C
 Minneapolis-Honeywell Regulator Co., Minneapolis 8, Minn.—G,H,K
 Multi-Tron Lab., 4624 Washington Blvd., Chicago 44, Ill.—F,G,I
 National Research Corp., 160 Charlemont St., Newton Highlands 61, Mass.—F,G,I
 Pacific Transducer TT Corp., 11921 W. Pico Blvd., Los Angeles 64, Calif.—J
 Peters Co., O. S., 1353 N.Y. Ave., N.E., Washington 2, D.C.—A,B,K
 PHAOSTRON CO., 151 Pasadena Ave., S. Pasadena, Calif.—E
 Phoenix Precision Instr. Co., 3803 N. 5th St., Philadelphia 40, Pa.—K
 Photobell Co., 116 Nassau St., New York 38, N.Y.—B,E
 Photocircuits Corp., New St., Glen Cove, N.Y.—K
 Photocon Research Prod., 421 N. Foothill Blvd., Pasadena 8, Calif.—E,H
 Poole Mfg. Engineers, 150 Express St., Dallas, Tex.—B,E
 Precision Thermometer & Instrument Co., 1434 Brandywine St., Philadelphia 30, Pa.—I
 Process & Instruments, 15 Stone Ave., Brooklyn 33, N.Y.—F,I
 "Q" Glass Co., 470 Broad St., Bloomfield, N.J.—F,I

ELECTRONIC INDUSTRIES DIRECTORY

Radio Research Labs., 172 Front St., Marietta, Ohio—G,I
 Research Electronics Labs., Roslyn, Pa.—F,H,I
 Roanwell Corp., 662 Pacific St., Brooklyn 17, N.Y.—A
 Rubicon Co., Ridge Ave. at 35th St., Philadelphia 32, Pa.—A
 Ruge-de Forest Inc., 84 Mass. Ave., Cambridge 39, Mass.—H
 Rutishauser Corp., 490 S. Fair Oaks Ave., Pasadena 1, Calif.—C,H
 Scientific Spec. Corp., Snow & Union St., Brighton 35, Mass.—I
 Simmonds Aerocessories, 105 White Plains Rd., Tarrytown, N.Y.—D
 Simpson Electric Co., 5200 W. Kinzie St., Chicago 44, Ill.—M
 Size Control Co., 2500 W. Washington Blvd., Chicago 12, Ill.—B,E,M
 Standard Electronic Research Corp., 2 East End Ave., New York 21, N.Y.—E
 Standard Gage Co., Poughkeepsie, N.Y.—A,B
 Statham Laboratories, Inc., 12401 W. Olympic Blvd., Los Angeles 64, Calif.—C,H,K
 Stokes Machine Co., F. J., 5500 Tabor Rd., Philadelphia 20, Pa.—I
 Sun Electric Corp., Harlem & Avondale Aves., Chicago 31, Ill.—I
 Technical Products Co., P.O. Box 93, Memphis 1, Tenn.—A,B,E,F,G,H,I,K,L
 Technograph Printed Electronics, Inc., 185 Valley St., Tarrytown, N.Y.—K
 Telescreen Corp., 36 Grove St., New Canaan, Conn.—B,D
 Tensitron, Inc., Pin Hill, Harvard, Mass.—I
 TV Utilities Corp., 1315 Jericho Tpke, New Hyde Park, L.I., N.Y.—D,H
 Thermo Instruments Co., 1310 Old County Rd., Belmont, Calif.—D
 Tracerlab, Inc., 130 High St., Boston 10, Mass.—F
 Trans-Sonics Inc., Bedford Airport, Bedford, Mass.—H,K
 U.S. Testing Co., 1415 Park Ave., Hoboken, N.J.—H,K
 Vacuum Tube Products, 506 S. Cleveland St., Oceanside, Calif.—F,G,I
 Vapor Recovery Systems, 2820 N. Alameda St., Compton, Calif.—D
 Weksler Thermometer Corp., 49 W. 32nd St., New York 12, N.Y.—I
 WELCH MFG. CO., W. M., 1515 Sedgwick St., Chicago 10, Ill.—G,I
 Western Electronic Enterprises, 3348 W. Compton Blvd., Gardena, Calif.—I
 Weston Labs. Inc., Oak Hill Rd., Harvard, Mass.—F
 Whittington Pump & Eng'g Corp., 1126 Prospect St., Indianapolis 3, Ind.—I
 Winslow Co., 9 Liberty St., Newark 5, N.J.—G,I

31—HARDWARE

Bolts A
Bushings B
Cable clamps C
Clips, alligator AP
Clips, crystal diode AQ
Clips, fahnstock AR
Clips, grid AS
Clips, spring D
Clips, test E
Code markers F
Contact points G
Cord, lacing AT
Couplings H
Fasteners I
Felt parts J
Gaskets K
Gears L
Grommets M
Hinges N
Locks O
Mirrors P
Mounting brackets Q
Nails R
Nuts S
Pins T
Plugs U
Retaining rings V
Rivets W
Screw Machine products AAS
Self tapping screws X
Set screws Y
Standard screws Z
Shaft couplings, flexible AA

Shaft couplings, rigid AB
Shaft seals AY
Slides, equipment AAA
Shafts, flexible AC
Shafts, rigid AD
Shockproof mounts AE
Spacers AU
Springs AF
Stampings AG
Strain reliefs AH
Tube clamps AV
Washers, brass AI
Washers, ceramic AW
Washers, felt AJ
Washers, fiber AK
Washers, lock AL
Washers, metal AM
Washers, mica AX
Washers, plastic AN
Washers rubber AO
Wire mesh AZ

Abalon Precision Mfg. Corp., 540 Casanova St., Bronx 59, N.Y.—AG,AAS
 Abel Mfg. Co., 32-21 37th Ave., Long Island City 1, N.Y.—Q,AG
 Accurate Electronics Corp., 1312 Ontario St., N.W., Cleveland 13, Ohio—C,T,U,AG,AH,AI,AK,AN
 Accurate Spring Mfg. Co., 3811 W. Lake St., Chicago 24, Ill.—AF,AG,AS,D
 Ace Spring Mfg. Co., 78 W. Houston St., New York 12, N.Y.—AF
 Acme Industrial Co., 200 N. Laflin St., Chicago 7, Ill.—B,T
 Acme Telectronix, Div. NEA Service, 1200 W. 3rd St., Cleveland 13, Ohio
 Acromark Co., 601 Morrell St., Elizabeth 4, N.J.—F,AG
 Adel Div., General Metals Corp., 10777 Van Owen St., Burbank, Calif.—I,M,Q,AG,AAQ
 Aero-Coupling Corp., Burbank, Calif.—H
 Aerolite Electronics Corp., 507 26 St., Union City, N.J.—B, C, D, E, G, H, I, K, M, Q, AK, AM, AN, AO, AP, AQ, AR, AS, AU, AAA
 Aeronautical Radio Mfg. Co., 155 1 St., Mineola, N.Y.—C
 Aeroquip Corp., 300 S. East Ave., Jackson, Mich.—H
 Aetna Felt Co., 204 Centre St., New York 13, N.Y.—J,K
 Airborne Accessories Corp., 1414 Chestnut Ave., Hillside 5, N.J.—L
 AIRCRAFT RADIO CORP., Boonton, N.J.—I,AA
 AIRTRON INC., 1109 W. Elizabeth Ave., Linden, N.J.—K
 Akron Rubber Co., 53 Warren St., New York 7, N.Y.—B,K,M,Q,P,AJ,AK,AN
 Alcon Metal Products, 1750 N. Kimball Ave., Chicago 47, Ill.—C,Q,AM
 ALDEN PRODUCTS CO., 117 N. Main St., Brockton 64, Mass.—D,E,I,AG,AS
 Alina Corp., 401 Broadway, New York 13, N.Y.—L
 Allen Mfg. Co., 133 Sheldon St., Hartford, Conn.—Y
 Allied Allegri Machine Co., 141 River Rd., Nutley 10, N.J.—P,AG,AL,AM,AN,AO
 Allied Research & Eng'g Inc., 1041 N. Las Palmas Ave., Hollywood 38, Calif.—P
 Allmetal Screw Products Co., Garden City, N.Y.—A,I,R,S,T,W,X,Y,Z,AL,AM,AA,AS
 American Brass Co., Waterbury 20, Conn.—M,AL,AM
 American Laubscher Corp., 333 W. 52 St., New York 19, N.Y.—A, B, L, S, T, V, W, AF, AG
 AMERICAN LAVA CORP., Chattanooga 5, Tenn.—B,H,AD,AU,AW
 American Mica Insulation Co., Manassquan, N.J.—AF,AG,AK,AN
 American Nut & Bolt Fastener Co., 2029 Doerr St., Pittsburgh 33, Pa.—AG,AL,AL,AM
 AMERICAN PHENOLIC CORP., 1830 S. 54 Ave., Chicago 50, Ill.—C,M
 American Radio Hardware Co., 152 Mac-Queston Parkway S., Mount Vernon, N.Y.—B, C, D, E, H, M, Q, S, T, U, AR, AG, AI, AK, AM, AN, AP, AR, AS, AU, AV
 American Screw Co., 1670 W. Main St., William-antic, Conn.—I,S,Z
 American Wood Working Co., 1682 N. Lowell Ave., Chicago 39, Ill.—B,T,U
 Anchor Metal Co., 244 Boerum St., Brooklyn 6, N.Y.—K,AG,AL
 Antenna Products, 3628 W. Lincoln Ave., Chicago 13, Ill.—Q
 Anti-Corrosive Metal Products Co., River Rd., Castleton-on-Hudson, N.Y.—A, I, R, S, T, W, X, Y, Z, AL, AM
 Arch Gear Works, 97 Holmes St., North Quincy 71, Mass.—L
 Associated Eng'g Corp., 65 Kent St., Brookline 46, Mass.—E
 Associated Production Co., 162 N. Clinton St., Chicago 6, Ill.—AAS
 Atlas E-E Corp., Bedford Airport, Bedford, Mass.—D,S,AG,AQ,AV
 Atlas Precision Products Co., 3801 Castor Ave., Philadelphia 24, Pa.—L,AA

Auburn Mfg. Co., Stack St., Middletown, Conn.—B, J, K, M, AG, AI, AJ, AK, AM, AN, AO, AU
 Augat Bros., 33 Perry Ave., Attleboro, Mass. AI
 Automatic Mfg. Corp., 65 Gouverneur St., Newark 4, N.J.—Q
 Automatic Metal Products Corp., 315 Berry St., Brooklyn 11, N.Y.—AAS
 Automatic & Precision Mfg. Co., 252 Hawthorne Ave., Yonkers 5, N.Y.—K, AO
 Autoscrew Co., 216 W. 18 St., New York 11, N.Y.—I, R, S, T, W, Y, Z, AI, AL, AM
 Baer Co., N. S., 1 Montgomery St., Hillside 5 N.J.—K, M, AG, AI, AK, AM, AN, AO
 Baker & Co., 113 Astor St., Newark 5, N.J.—G
 Barker & Williamson, 237 Fairfield Ave., Upper Darby, Pa.—H, AA
 Barry Corp., 761 Pleasant St., Watertown 72, Mass.—AE
 Bayside Watch Tool Co., 20-02 Utopia Parkway, Whitestone 57, N.Y.—AAS
 Beaver Gear Works, Rockford, Ill.—I
 Bead Chain Mfg. Co., 8 Mountain Grove St., Bridgeport 5, Conn.—AG
 Belock Instrument, College Point, N.Y.—H, L, Q, AB, AD, AU
 Birnbach Radio Co., 145 Hudson St., New York 13, N.Y.—A, B, C, D, E, R, U, Y, Z, AA, AC, AI, AP, AR, AU
 Birther Corp., 4371 Valley Blvd., Los Angeles 32, Calif.—AV
 Blaco Mfg. Co., 6541 Euclid Ave., Cleveland 3, Ohio—AG
 Blazon Mfg., 6021 Dempster St., Morton Grove, Ill.—AN
 B & M Elec. Co., 838 4th Ave., Brooklyn 32, N.Y.—U, AH
 Bowmar Instrument, 2415 Pennsylvania St., Ft. Wayne 4, Ind.—I
 Brainin Co., C. S., 320 Washington St., Mount Vernon, N.Y.—G
 Bristol Co., Waterbury 20, Conn.—Y
 Buchanan Electrical Products, 236 Route 22, Hillside, N.J.—B
 Bucks County Enterprises, Quakertown Municipal Airport, Quakertown, Pa.—Q, AG
 Burndy Eng'g Co., Norwalk, Conn.—C, H, I, S, T, U
 Cambridge Thermionic Corp., 445 Concord Ave., Cambridge 38, Mass.—AV, AAS
 CENTRALAB, DIV. OF GLOBE-UNION INC., 900 E. Keefe Ave., Milwaukee 1, Wisc.—H, Q, AG, AH, AV
 Central Screw Co., 3501 S. Shields, Chicago 9, Ill.—L, S, X, Z
 Chase Brass & Copper Co., 236 Grand St., Waterbury Conn.—A, R, J, M, R, S, T, W, Z, AG, AI, AL, AM, AAS
 Chicago Expansion Bldg., 1338 W. Concord Pl., Chicago 22, Ill.—A, I, AG
 CINCH MFG. CORP., 1026 S. Homon Ave., Chicago 24, Ill.—C, D, I, Q, AF, AG, AN, AQ, AS
 CITATION PRODUCTS CO., 233 E. 146 St., New York 51, N.Y.—B, H, O, U, AB, AG, AN, AAS
 Colortone Electronics, 238 William St., New York 38, N.Y.—AAS
 Communication Products Co., Marlboro, N.J.—C
 Continental-Diamond Fibre Co., Newark, Del.—M, AK, AN
 Corry-Jamestown Mfg. Corp., 44 N. Center St., Corry, Pa.—AG
 Creative Plastics Corp., Rt. 25-A, Stony Brook, N.Y.—B, M, AN
 Curran Machine Works, 20-20 Steinway St., Long Island City, N.Y.—A, B, I, Q, AG
 Delaware Optical Labs., 36 William St., Lansdowne, Pa.—P
 Deleo Radio Div., General Motors Corp., 1446 S. Home Ave., Kokomo, Ind.—B, AG, AAS
 Dimeco-Gray Co., 207 E. 6 St., Dayton 2, Ohio—I
 Division Lead Co., 836 W. Kinzie St., Chicago 22, Ill.—L, M, AM
 DoAll Co., 254 N. Laurel Ave., Des Plaines, Ill.—A
 Dorn Equipment Corp., 88 Broad St., Boston 10, Mass.—U, AN, AAS
 Du-Co Ceramics Co., Box 587, Butler, Pa.—B, M
 Durable Rubber Products Co., 549 W. Fulton St., Chicago 6, Ill.—AO
 Dynakon Corp., 9623 Clinton, Cleveland, Ohio—AD
 Dzus Fastener Co., P. O. Box 185, Babylon, N.Y.—I
 Eastern Specialty Co., 3627 N. 8th St., Philadelphia 40, Pa.—E, AAS
 EBY INC., HUGH H., 4700 Stenton Ave., Philadelphia 44, Pa.—U, AG, AAS
 Elastic Stop Nut Corp. of America, 2330 Vauxhall Rd., Union, N.J.—I, S, T
 Elec Tool & Screw Corp., 1930 Broadway, Rockford, Ill.—C, AG, AV
 Electrofilm Inc., 7116 Laurel Canyon Blvd., N. Hollywood, Calif.—C, G, M, AK, AL, AM, AN, AV
 Electronic Mechanics, Inc., 101 Clifton Blvd., Clifton, N.J.—K, AN
 Eldi Electronic Devices, 204 W. Houston St., New York 14, N.Y.—E
 ERCA Tool Die & Stamping Co., 19 Ash St., Brooklyn 22, N.Y.—C, M, AG, AM
 Erie Resistor Corp., 644 W. 12th St., Erie, Pa.—AG
 Escro Mfg. Co., Box 344, Summit, Ill.

Federal Shock Mount Corp., 1077 Intervale Ave., Bronx, N.Y.—AE
 Federal Screw Products Inc., 224 W. Huron St., Chicago 10, Ill.—A, C, I, M, S, W, X, Y, Z, AG, AI, AK, AL, AM, AP, AR, AS, AU, AAS
 FEDERAL TELEPHONE & RADIO CO., Div. I.T.&T., 100 Kingsland Rd., Clifton, N.J.—AK
 Felters Co., 210 South St., Boston 11, Mass.—J
 Felt Products Mfg. Co., 1504 Carroll Ave., Chicago 7, Ill.—J, K, AI, AJ, AK, AM, AN, AO
 Felts Corp., Microdot Div., 1826 Fremont Ave., S. Pasadena, Calif.—H
 Ferner Co., R. Y., 110 Pleasant St., Malden 48, Mass.—Z
 Fish-Schurman Corp., 70 Portman Rd., New Rochelle, N.Y.—P
 Formica Co., 4614 Spring Grove Ave., Cincinnati 32, Ohio—AN
 Forsberg Mfg. Co., 125 Seaview Ave., Bridgeport 1, Conn.—AAS
 Franklin Fibre-Iamitex Corp., Wilmington 99, Dela.—AK, AN
 Freeway Washer & Stamping Co., 4911 Grant Ave., Cleveland 5, Ohio—AG, AI, AK, AM, AN
 Fretco Inc., 406 N. Craig St., Pittsburgh 13, Pa.—Q
 GARDE MFG. CO., 588 Eddy St., Providence 3, R.I.—K, AU
 Garlock Packing Co., 402 E. Main St., Palmyra, N.Y.—K, AN, AO
 Gasket Eng'g Co., 2444 Charlotte St., Kansas City 8, Mo.—K, AI, AJ, AK, AL, AM, AN, AO
 GEE-LAR MFG. CO., 819 Elm St., Rockford, Ill.—H, P, Q, AF
 General Cement Mfg. Co., 919 Taylor Ave., Rockford, Ill.—A, R, C, D, H, J, M, P, S, T, U, W, X, Y, Z, AI, AJ, AK, AL, AM, AP, AQ, AR, AT, AU, AAS
 GENERAL ELECTRIC CO., Monowatt Dept., 95 Hathaway St., Providence 7, R.I.—C
 GENERAL ELECTRIC CO., Tube Dept., 1 River Rd., Schenectady 5, N.Y.—Q
 GENERAL ELECTRIC CO., Apparatus Div., 1 River Rd., Schenectady 5, N.Y.—B, G
 General Electric Co., Wiring Device Dept., 95 Hathaway St., Providence 7, R.I.—C, U
 GENERAL RADIO CO., 275 Mass. Ave., Cambridge 39, Mass.—U
 Gibson Electric Co., 8350 Frankstown Ave., Pittsburgh 21, Pa.—G
 GRAPHITE METALIZING CO., 1015 Nepperhan Ave., Yonkers, N.Y.—B, G
 Gramar Mfg. Co., Wright St., Lynn, Mass.—AAS
 GRANT PULLEY & HDW. CORP., 81-85 Whitestone Pkwy., Flushing 54, N.Y.—AAA
 Gries Reproducer Corp., 5 Second St., Rochelle, N.Y.—L, S, W, AAS
 Harper Co., H. M., 8200 Lehigh Ave., Morton Grove, Ill.—A, I, S, W, X, Y, AI, AL, AM, AAS
 Harwood Mfg. Co., 466 W. Superior St., Chicago 10, Ill.—B, C, U, AA, AB
 Hassall, Inc., John, P.O. Box 2240, Westbury, L.I., N.Y.—R, W, AAS
 Helior Mfg. Corp., 238 Lewis St., Paterson, N.J.—H, Q
 Heli-Coil Corp., Shelter Rock Lane, Danbury, Conn.—B, I
 Hercules' Elec. Mach'y & Equip. Co., 1442 E. Washington Blvd., Los Angeles 21, Calif.—G
 Heyman Mfg. Co., 600 Michigan Ave., Kenilworth, N.J.—AG, AH
 Hobbs Mfg. Co., 26 Salisbury St., Worcester 5, Mass.—AI
 Holub Industries, 413 DeKalb Ave., Sycamore, Ill.—C, I
 Hopkins Eng'g Co., 2082 Lincoln Ave., Altadena, Calif.—AG, AAS
 Huck Mfg. Co., 2480 Bellevue Ave., Detroit 7, Mich.—A, W
 HUDSON TOOL & DIE CO., 412 S. 14 St., Newark 7, N.J.—AG
 I.E. Mfg. Co., 325 N. Hoyne Ave., Chicago 12, Ill.—A, M, Q, I, S, Z, AG, AI, AL, AM, AN, AO, AV, AAS
 Illinois Electric Porcelain Co., 510 N. Pearl St., Macomb, Ill.—B
 Imperial Radar & Wire Corp., 818 E. 233 St., New York 66, N.Y.—C
 Independent Mfg. Co., 5 Bellevue Ave., E Riverton, N.J.—C, K, Q, AG, AM
 Indiana Metal Products Corp., Rochester, Ind.—I, X, Z
 Industrial Devices, Edgewater, N.J.—E
 Industrial Electrical Works, 1509 Chicago St., Omaha, Nebr.
 Industrial Hardware Mfg. Co., 109 Prince St., New York 12, N.Y.—AG
 Industrial Mica Corp., 233 S. Van Brunt St., Englewood, N.J.—AX
 Industrial Retaining Ring Co., 8 W. Sidney Ave., Mount Vernon, N.Y.—V
 Industrial Television, 369 Lexington Ave., Clifton, N.J.—D
 Instrument Specialties Co., 244 Bergen Blvd., Little Falls, N.J.—AF
 Insulating Fabricators of N.E., 69 Grove St., Watertown 72, Mass.—AK, AN
 Insuline Corp. of America, 186 Granite St., Manchester, N.H.—E, G, K, M, N, Q, S, T, U, V, AA, AB, AE, AI, AK, AM, AN, AO, AP, AS, AV, AAS
 International Electronic Research Corp., 175 W. Magnolia Blvd., Burbank, Calif.—AV
 Janco Corp., 3111 Winona Ave., Burbank, Calif.—AE
 JAN Hardware Mfg. Co., 75 N. 11th St., Brooklyn 11, N.Y.—B, H, K, AA, AB, AE, AV, AAS

Javex, Box 646, Redlands, Calif.—G, T, Y, AG
 JFD Mfg. Co., 6101 16 Ave., Brooklyn 4, N.Y.—E, M, U
 Jiffy Clip Mfg. Co., 128 Clinton Ave., Huntington, N.Y.—E
 Johns-Manville, 22 E. 40th St., New York 16, N.Y.—K
 JOHNSON CO., E. F., Waseca, Minn.—H, AA, AB, AC, AD
 Johnson Eng'g. Inc., 97 Summit Ave., Summit, N.J.—T, AD, AAS
 Kaywoff Products Co., Overton, Nebr.—C, M, AE, AN, AO
 KELLOGG SWITCHBOARD & SUPPLY, 79 W. Monroe St., Chicago 3, Ill.—AT
 Keystone Watch Case Div., Riverside Metal Co., 1 Pavilion Ave., Riverside, N.J.—AG
 Klincher Locknut Corp., 2153 Hillside Ave., Indianapolis, Ind.—IS
 Kling Metal Spinning Co., 174 Centre St., New York 13, N.Y.—AG
 Kolton Electric Mfg. Co., 123 N. J. Railroad Ave., Newark 5, N.J.—AG
 Krueger & Hudepohl, 3rd & Vine Sts., Cincinnati 2, Ohio—AG
 Kulka Electric Mfg. Co., 633 S. Fulton Ave., Mount Vernon, N.Y.—C, U, AH
 Kupfrian Mfg. Co., 367 State St., Binghamton, N.Y.—B, AA, AH, AC
 Laidman & Co., 1308 N. Halsted St., Chicago 2, Ill.—J, K, AJ, AK, AO
 Lamson & Sessions Co., 1971 W. 85 St., Cleveland 2, Ohio—X, Y, Z
 Larson Co., Chas. O., Ave. G & C & N.W. RR., Sterling, Ill.—A, H, I, AG
 LEE ELECTRONIC LABS., 233 Dudley St., Boston 19, Mass.—AG
 Lewis Spring & Mfg. Co., 2656 W. North Ave., Chicago 47, Ill.—AF
 Lindy & Co., 248 Herricks Rd., Mineola, L.I., N.Y.—A, B, C, D, E, F, G, J, K, L, N, O, P, Q, S, T, V, AF, AG, AI, AJ, AK, AL, AM, AN, AO, AP, AQ, AR, AS, AU, AV, AAS
 Linear Inc., State Rd. & Levick St., Philadelphia 35, Pa.—K, V, AO
 Lion Fasteners Inc., 500 Main St., Honeye Falls, N.Y.—I
 Long Inc., Thomas J., 215 Stonehenge Lane, Carle Place, L.I., N.Y.—AG, AN
 Lord Mfg. Co., 1635 13 St., Erie, Pa.—H, AA, AE
 Lorentzen, Inc., H. K., 391 W. Broadway, New York 12, N.Y.—I
 Lundy Associates, 694 Main St., Waltham 54, Mass.—B
 Lynn Electronic Research Co., 9 W. Magnolia, Burbank, Calif.—AU, AAS
 Malco Tool & Mfg. Co., 4025 W. Lake St., Chicago 24, Ill.—AG
 MALLORY CO., P. R., Indianapolis 6, Ind.—G
 Mandex Mfg. Co., 2608 W. 16 St., Chicago 8, Ill.—AG
 Master Appliance Mfg. Co., 4 & Ontario Sts., Racine, Wisc.—B, M
 Mayfair Molded Products Corp., 4440 Elston Ave., Chicago 30, Ill.—B, K, M, AO
 MB Mfg. Co., 1060 State St., New Haven 11, Conn.—M, AE
 Metal Textile Corp., Roselle, N.J.—K, AM
 Metals & Controls Corp., Gen'l Plant Div., 34 Forest St., Attleboro, Mass.—G
 METHODE MFG. CORP., 2021 W. Churchill St., Chicago 47, Ill.—V, AG
 Metron Instrument Co., 432 Lincoln St., Denver 3, Colo.—L
 Mica Insulator Co., P.O. Box 1076, Schenectady 1, N.Y.—B, K, L, M, Q, AB, AD, AN
 Mid-West Spring Mfg. Co., 4632 S. Western Ave., Chicago 9, Ill.—AF, AG
 Milford Rivet & Machine Co., Milford, Conn.—W
 Miller Mfg. Co., James, 150 Exchange St., Malden, Mass.—H, AA, AB, AS, AV
 Milwaukee Stamping Co., 800 S. 72 St., Milwaukee 14, Wisc.—AG, AAS
 Modern-Aire Mfg. Corp., 4436 W. Roosevelt Rd., Chicago 24, Ill.—Q, S, Z, AK
 Modern Wire Co., 39-30 Review Ave., Long Island City 1, N.Y.—AP, AR
 Molding Corp. of America, 40 Church St., Pawtucket, R.I.—M
 Moore Co., Howard J., 266 William St., New York, N.Y.—J, K, AJ, AK, AN, AO
 MUELLER ELECTRIC CO., 1583 E. 31 St., Cleveland 14, Ohio—E, AP
 Multi-Tron Laboratory, 4624 W. Washington Blvd., Chicago 44, Ill.—AG
 NATIONAL CO., 61 Sherman St., Malden 48, Mass.—S, AA, AB, AC, AS, AV
 National Electrical Machine Shops, 919 Jeap Blair Dr., Silver Spring, Md.—N, O, AV
 National Electric Products Corp., 140 Stanwix St., Pittsburgh 22, Pa.—Q
 National Electronic Mfg. Corp., 42-08 Vernon Blvd., Long Island City 1, N.Y.
 National Gasket & Washer Mfg. Co., 124 E. 25 St., New York 10, N.Y.—J, K, AG, AI, AJ, AK, AM, AN, AO, AU
 National Instrument Co., 23 E. 26 St., New York 10, N.Y.—L
 National Research Corp., 70 Memorial Dr., Cambridge, Mass.—I
 National Tel-Tronics Corp., 35 St. Casimir Ave., Yonkers, N.Y.—V
 Neasil Products Div. Rubber Associates, 850 Metropolitan Ave., Brooklyn 11, N.Y.—K, M, AE, AY
 Newcomb Spring Corp., 3902 7th Ave., Brooklyn, N.Y.—AF

New Departure, Div., GM. Bristol, Conn.
 New Hampshire Ball Bearings, Inc., 20
 Grove St., Peterborough, N.H.
 New Products Co., 1069 E. 54th St., Indian-
 apolis, Ind.—Q
 Nichols Products Co., 325 W. Main St.,
 Moorestown, N.J.—AN
 Northern Metal Products, 9595 W. Grand Ave.,
 Franklin Park, Ill.—AG
 North Shore Nameplate Co., Bank of Man-
 hattan Bldg., Bayside 61, L.I., N.Y.—F
 Nylok Corp., E. 14 St. & Grand Central Ave.,
 Elmira Heights, N.Y.—I
 Oak Mfg. Co., 1260 Clybourn, Chicago, Ill.—H
 Olympic Metal Products Co., P. O. Box 71, Phil-
 lipsburg, N.J.—AG
 Pacific Universal Products Co., 168 Vista
 Ave., Pasadena 8, Calif.—P
 Page-Fogwell Corp., 1311 Riverside Dr., Los
 Angeles 31, Calif.—U
 Palnut Co., 61 Cordier, Irvington, N.J.—I.S
 Pancro Mirrors, Inc., 2958 Los Feliz Blvd.,
 Los Angeles 39, Calif.—P
 Parker-Kalon Corp., 200 Varick St., New
 York 14, N.Y.—I.X.Y
 Parts Producing Corp., 1861 2 Ave., New
 York 28, N.Y.—H.L.A.A.B
 Penn. Eng. & Mfg. Corp., Box 311 Doylest-
 own, Pa.—I
 Penn. Fibre & Specialty Co., 2030 E. West-
 moreland St., Philadelphia 34, Pa.—B.J.K.L,
 M.A.G.A.I.A.J.A.K.A.L.A.M.A.N.A.O
 Petroff, Peter A., 127 Water St., New York 5,
 N.Y.—B.C.G.L.Q.A.A.A.C.A.F.A.P.A.A.S
 PHAOSTRON CO., 151 Pasadena Ave., S.
 Pasadena, Calif.—D.E.Q.A.E.A.P
 Phcoll Mfg. Co., 5700 Roosevelt Rd., Chicago 50,
 Ill.—A.I.S.X.Y.Z.A.I
 Philmore Mfg. Co., 113 University Pl., New
 York 3, N.Y.—G.A.P.A.R
 Pix Mfg. Co., 5 Oliver St., Newark 2, N.J.—
 B.C.G.K.M.W.A.F.A.G.A.I.A.M
 Plastcraft Products Co., 1 Station Plaza,
 West Nyack, N.Y.—AN
 Plymouth Electronics Corp., 50 Kingsbury St.,
 Worcester, Mass.—C.Q
 Ponn Machine Cutting Co., 25 Curve St., Bos-
 ton 11, Mass.—K
 PRECISION PAPER TUBE CO., 2035 W.
 Charleston St., Chicago 47, Ill.—AK.AN
 Precision Plastic Products, 225 N. Racine
 Ave., Chicago 7, Ill.—AJ.AK.AN.AO
 Premier Instrument Corp., 52 W. Houston St.,
 New York 12, N.Y.
 Progressive Mfg. Torrington, Conn.—I.S.W.Z
 Pyle-National Co., 1334 N. Kostner Ave.,
 Chicago 51, Ill.—C.U
 Q-Line Mfg. Corp., 1562 61st St., Brooklyn
 19, N.Y.—A.B.C.Q.S.W.X.Y.A.G.A.L.A.M.A.V
 Quaker City Gear Works, Bethayres, Pa.—I
 Rada Products Co., 2911 W. Carroll Ave.,
 Chicago 12, Ill.—Q.A.G
 Radio Frequency Labs., Boonton, N.J.—S
 Radio Merchandise Sales, 2016 Bronxdale
 Ave., New York 60, N.Y.—M
 Rapid Specialties Co., 325 W. Huron St., Chi-
 cago 10, Ill.—E
 Raytor Corp., 5th St. & Cannon Ave., Lans-
 dales, Pa.—C.Q.A.G.A.I.A.M.A.V
 Red Seal Electric Co., 6321 Detroit Ave., Cleve-
 land 2, Ohio—B.A.K.AN
 Reed & Prince I Duncan Ave., Worcester 1,
 Mass.—A.I.S.W.X.Y.Z.A.A.S
 Reliable Spring & Wire Forms Co., 3167 Ful-
 ton Rd., Cleveland 9, Ohio—D.A.F
 Remler Co., 2101 Bryant St., San Francisco
 10, Calif.—AV
 Research Devel Mfg., 425 E. Collom St., Phila-
 delphia 44, Pa.—I.A.D.A.A.S
 Rhode Island Electronics, Inc., Mill St., Lons-
 dale, R.I.—C.Q.A.A.A.B.A.D.A.G.A.I.A.M
 Rhodes & Sons, 12 Porter St., Taunton, Mass.
 —R
 Richardson Co., Lockland, Cincinnati, Ohio
 —V.AN
 ROBINSON AVIATION INC., Teterboro Air
 Terminal, Teterboro, N.J.—AE
 Rodale Mfg. Co., 6 & Minor Sts., Emmaus, Pa.
 —B.M.U
 Roffan Co., Topsfield, Mass.—U.A.A.C
 Rollon Rubber Products, 1805 Jerome Ave.,
 Bronx 53, N.Y.—K.M.A.H.AO
 Rostan Corp., 5660 59th St., Maspeth 78,
 L.I., N.Y.—A.G.A.A.S
 Russell, Burdshall & Ward, Portchester, New
 York—A.R.W.X.Y.Z
 Screw Corp. of America, 103 Park Ave., New
 York 17, N.Y.—A.I.W.X.Y.Z
 Semon Bache & Co., 636 Greenwich St., New
 York 14, N.Y.—P
 Set Screw Mfg., 422 Main, Bartlett, Ill.—Y
 Shakeproof Inc., St. Charles Rd., Elgin, Ill.—
 C.I.L.M.S.U.V.W.X.A.G.A.L
 Smith, Inc., Herman H., 436 18 St., Brooklyn
 15, N.Y.—A.B.C.D.E.H.J.M.S.U.X.Y.Z.A.B,
 A.D.A.F.A.G.A.I.A.K.A.M.A.A.R
 Smith Mfg. Co., Nathan R., 105 Pasadena Ave.,
 S. Pasadena, Calif.—AG
 South Chester Corp., Lester, Pa.—I.W
 South River Metal Products Co., 377 Old
 Bridge Turnpike, South River, N.J.—A.Q,
 S.A.G.A.M
 Spaulding Fibre Co., 310 Wheeler St., Tona-
 wanda, N.Y.—R.K.M.S.A.K.A.N.A.A.S
 Spring Packing Corp., 332 S. Michigan Ave.,
 Chicago, Ill.—J
 Standard Pressed Steel Co., Box 899, Jenkin-
 town, Pa.—A.I.S.Y.Z.A.A.S
 Stanley Works, 195 Lake St., New Britain,
 Conn.—N

ELECTRONIC INDUSTRIES DIRECTORY

Star Expansion Products Co., 147 Cedar St.,
 New York 6, N.Y.—I.S.U.A.G.A.A.S
 Star Fuse Co., 235 Canal St., New York 13,
 N.Y.—E
 Star Stainless Screw Co., 190 Union Ave.,
 Paterson, 1, N.J.—A.B.C.H.I.N.R.S.T.U.W,
 X.Y.Z.A.F.A.G.A.J.A.K.A.A.S
 Staver Co., 41-51 N. Saxon Ave., Bay Shore,
 N.Y.—AG.AV
 Steel Co., Herman D., Lafayette Bldg., Phila-
 delphia 6, Pa.—A.B.G.I.L.S.U.V.Y.A.I
 Sterling Bolt Co., 375 W. Erie St., Chicago
 11, Ill.—A.C.H.I.S.V.W.X.Y.Z.A.I.A.J.A.K.A.L,
 A.M. AN. AO. A.A.S
 Stewart Mfg. Corp., F. W., 4311 Ravenswood
 Ave., Chicago 13, Ill.—AA.AC
 Stokes Molded Products, Taylor & Webster
 Sts., Trenton 4, N.J.—AN.AO
 Stone City, P. O. Box 351, Bedford, Ind.—D, I,
 N.Q.A.G.A.I.A.K.A.M
 Stronghold Screw Products, 216 W. Hubbard
 St., Chicago 10, Ill.—A.I.S.W.X.Y.Z.A.I.A.L,
 A.M
 Swiss Jewel Co., Lafayette Bldg., Philadelphia
 6, Pa.—A.A.S
 SYLVANIA ELECTRIC PRODUCTS, 1740
 Broadway, New York 19, N.Y.—AG
 Taylor Fibre Co., Norristown, Pa.—AK.AN
 Television Products Co., 1147 N. McCadden
 Pl., Hollywood 38, Calif.—AAA
 Tempo T-V Products Co., 2450 Ramona Blvd.,
 Los Angeles 33, Calif.—Q.V
 Thomas & Betts Co., 36 Butler St., Elizabeth
 1, N.J.—AH
 Thomas & Sons, Inc., William, 91 Pearl St.,
 Brooklyn 1, N.Y.—AG.AV
 Thompson-Bremer & Co., 520 N. Dearborn
 St., Chicago 10, Ill.—S.A.L.A.M
 Thompson Clock Co., H. C., 38 Federal St.,
 Bristol, Conn.—A.D.E.G.J.K.L.M.Q.S.T.U.X,
 Y.Z.A.T.A.J.A.K.A.L.A.M.A.N.A.O
 THOR CERAMICS, INC., 225 Belleville Ave.,
 Bloomfield, N.J.
 Times Facsimile Corp., 540 W. 58th St., New
 York 19, N.Y.—AV
 TINERMAN PRODUCTS, INC., P.O. Box
 6688, Cleveland 1, Ohio—C.D.I.S.AU
 Trico Fuse Mfg. Co., 2348 N. 5th St., Mil-
 waukee 12, Wis.—C.E.AV
 Tri-Dex Co., P.O. Box 1207, Lindsay, Calif.—
 AN.AU
 T-V Products Co., 152 Sandford St., Brooklyn
 5, N.Y.—C.Q.A.E.A.G
 Ucinite Co., Div. United-Carr Fastener Corp.,
 459 Watertown St., Newtonville, Mass.—
 I.M.T.U.A.G
 Uniform Tubes Inc., Level Rd., Collegeville 2,
 Pa.—A.A.S
 United-Carr Fastener Corp., 31 Ames St.,
 Cambridge 42, Mass.—C.I.M.U.S.A.E.A.G
 United Screw & Bolt Corp., 2513 W. Culler-
 ton St., Chicago 8, Ill.—A.I.S.X.Y.Z.A.G.A.I,
 A.M.A.A.S
 U. S. ENGINEERING CO., 521 Commercial
 St., Glendale 3, Calif.—B.A.B.AU
 Universal Mfg. Co., 410 Hillside Ave., Hillside,
 N.J.—AG
 Universal Specialty Co., P. O. Box 1892, Bos-
 ton 5, Mass.—S
 U. S. Gasket Co., 602 N. 10 St., Camden 1,
 N.J.—B.K.M.A.C
 Utilities Service Co., #1 Pine St., Allentown,
 Pa.—A.C.T.A.M
 Vallorbs Jewel Co., P.O. Box 958 Lancaster,
 Pa.—A.A.S
 Varflex Corp., 508 W. Court St., Rome, N.Y.
 —AT
 Video Industries Co., 42 Palmer Pl., Port
 Chester, N.Y.—A.C.S.A.G.A.L.A.M
 Volkert Metal Stampings, Inc., John, 223-34
 96th Ave., Queens Village 29, N.Y.—AG
 Waldes Kohinoor Inc., 47-16 Austel Pl., Long
 Island City 1, N.Y.—I.V.A.L
 WALL MFG. CO., Grove City, Pa.—AG.A.A.S
 Walsco Electronics Corp., 3225 Exposition Pl.,
 Los Angeles 18, Calif.—A. B. C. D. I. M. N.
 Q. R. S. T. U. V. W. X. Y. A. F. A. G. A. J.
 A. K. A. L. A. M. A. R. A. S. A. U. A. A. S
 Waltham Horological Corp., 711 Broad St.,
 Lynn, Mass.—AG.A.A.S
 Waltham Screw Co., 77 Rumford Ave., Wal-
 tham 54, Mass.—A.B.G.I.S.Y.Z.A.I.A.A.S
 WARENE PLASTICS CORP., Warren, Pa.
 —AE
 WECKERSS CO., 5621 N. Avondale Ave.,
 Chicago 30, Ill.—C
 Wenzel Projector Co., 2509 S. State St., Chi-
 cago 16, Ill.—AR
 Western Gear Works, P. O. Box 182, Los
 Angeles, Calif.—L
 Western Int'l. Co., 45 Vesey St., New York 7,
 N.Y.—D.E.U.A.A.B
 Westfield Metal Products Co., 163 Elm St.,
 Westfield, Mass.—S
 Westline Products, 600 E. 2nd St., Los An-
 geles 54, Calif.—F
 WHITE & SONS, JAMES L., 374 Verona Ave.,
 Newark 4, N.J.—C.L

WHITE CO., S. S., Industrial Div., 10 E. 40
 St., New York 16, N.Y.—AC
 Whitehead Stamping Co., 1661 W. Lafayette
 Blvd., Detroit 16, Mich.—C.P.A.G.A.I.A.K.A.M
 Willard Storage Battery Co., 1220 Huron Rd.,
 Cleveland, Ohio—C
 Wilmar Mfg. Co., 2715 E. 14th St., Kansas
 City 27, Mo.—H
 Wilmington Fibre Specialty Co., P. O. Drawer
 1028, Wilmington 99, Del.—K.M.A.G.A.K
 Wire Stripper Co., 1725 Eastham Ave., E.
 Cleveland 12, Ohio—A.B.A.A.S
 Worcester Pressed Aluminum Corp., 13 Hope
 Ave., Worcester, Mass.—AG
 Wrought Washer Mfg. Co., 2275 S. Bay St.,
 Milwaukee 7, Wis.—AG.A.I.A.M
 York Co., Otto H., 69 Glenwood Pl., E.
 Orange, N.J.—AZ
 Zierick Mfg. Corp., Beechwood & Rockdale
 Ave., New Rochelle, N.Y.—AG.A.P.A.R.A.S

32—HEADPHONES

Headphones, crystal A
Headphones, dynamic B
Headphones, hearing aid C
Headphones, magnetic D

Aeronautical Radio Mfg. Co., 155 1st St.,
 Mineola, N.Y.—B.D
 Allied Electronic Equip. Co., 425 Brannan
 St., San Francisco 7, Calif.—B.D
 British Electronic Sales, 23-03 45 Rd., L.I.
 N.Y.—C
 BRUSH ELECTRONICS CO., 3405 Perkin-
 Ave., Cleveland 14, Ohio—A.C
 Cannon Co., C.F.—Springwater, N.Y.—D
 Communication Devices Co., 2331 12 Ave., New
 York City 27, N.Y.—D
 Conn. Telephone & Electric Co., 70 Britannia
 St., Meriden, Conn.—B
 Consolidated Radio Products Co., 350 W.
 Erie St., Chicago 10, Ill.—C.D
 Dictograph Products Inc., 95-25 149th St.,
 Jamaica 35, N.Y.—C
 Ectro, Inc., 425 Sandusky St., Delaware
 Ohio—A
 Fenton Co., 15 Moore St., New York 4, N.Y.—
 C.D
 G. & M. Equipment Co., 7315 Varna Ave.,
 N. Hollywood, Calif.—A.B
 GULTON MFG. CORP., 212 Durham Ave.,
 Metuchen, N.J.—A
 Insuline Corp. of America, 186 Granite St.,
 Manchester, N.H.—D
 Interelectronics Corp., 2432 Grand Con-
 course, New York 58, N.Y.—B.C
 Lear, Inc., 11916 W. Pico Blvd., Los Angeles
 64, Calif.—D
 MacKay Radio and Telegraph Co., 345 Hud-
 son St., New York, N.Y.—D
 Magnaflex Corp., 7300 W. Lawrence Ave.,
 Chicago 31, Ill.—J.N
 Miles Reproducer Co., 812 Broadway, New
 York 3, N.Y.—C
 Permaflux Corp., 4900 W. Grand Ave., Chi-
 cago 39, Ill.—A.B.D
 Philmore Mfg. Co., 113 University Pl., New
 York 3, N.Y.—D
 Roanwell Corp., 662 Pacific St., Brooklyn 17,
 N.Y.—B.D
 Sears Co., M.J. Roxbury, N.Y.—B.D
 SONOTONE CORP., Elmsford, N.Y.—B.C.D
 S.O.S. Cinema Supply Corp., 602 W. 52nd St.,
 New York 19, N.Y.—A
 Soundscribe Corp., 146 Munson St., New
 Haven 4, Conn.—B
 Telephonics Corp., Park Ave., Huntington
 N.Y.—B.D
 Telex, Inc., 1633 Eustis St., St. Paul 1, Minn.—
 B.C.D
 Trimm, Inc., Libertyville, Ill.—D
 U S Recording Co., 1121 Vermont Ave., N.W.
 Washington 5, D.C.—A.B

33—INDICATORS

Indicators, antenna position A
Indicators, broadcast B
Indicators, data display AO
Indicators, density C
Indicators, detonation D
Indicators, deviation AP
Indicators, dielectric constant E
Indicators, electronic AR
Indicators, film thickness F
Indicators, fluid conductivity G
Indicators, fluid flow H
Indicators, frequency J
Indicators, hardness K
Indicators, humidity L
Indicators, illumination M
Indicators, liquid level N
Indicators, materials thickness O
Indicators, moisture C
Indicators, null AN
Indicators, ocean depth F
Indicators, oxygen C
Indicators, PH F
Indicators, photographic exposure F

Indicators, positioning T
 Indicators, power level U
 Indicators, pressure V
 Indicators, radiation W
 Indicators, R-F X
 Indicators, servo Y
 Indicators, shorted turn Z
 Indicators, smoke & combustion AA
 Indicators, sound level AB
 Indicators, specific gravity AC
 Indicators, speed AQ
 Indicators, strain AD
 Indicators, telemetering AE
 Indicators, temperature AF
 Indicators, timing AG
 Indicators, torque AH
 Indicators, turbidity AI
 Indicators, vacuum AJ
 Indicators, volume AK
 Indicators, weight AL
 Indicators, wind speed AN

Advance Electronics Co., 451 Highland Ave., Passaic, N.J.—I
 Aero Electronics Co., 1512 N. Wells St., Chicago 10, Ill.—E,F,H,I,K,M,N,O,T,Y,AD,AG,AH,AL,AM
 Aerolux Light Corp., 653 11 Ave., New York 36, N.Y.—W
 Ahrendt Instrument Co., 4910 Calvert Rd., College Park, Md.—Y, AH
 Air Associates, Teterboro, N.J.—T
 Airborne Electronics Co., Hangar 6, Metropolitan Airport, Van Nuys, Calif.—A
 Alco Mfg. Co., 4011 Cuming St., Omaha 8, Nebr.—W
 Allna Corp., 401 Broadway, New York 18, N.Y.—L
 Allied Intl. Inc., 230 Park Ave., New York 17, N.Y.—A
 American Chronoscope Corp., 316 W. 1 St., Mt. Vernon, N.Y.—AG
 American Electronic Mfg., 9503 W. Jefferson Blvd., Culver City, Calif.—Y
 American Instrument Co., 8050 Georgia Ave., Silver Spring, Md.—F,K,N,R
 American Optical Co., Instrument Div., Box A, Buffalo 15, N.Y.—J
 American Vacuum Products Corp., 11779 Santa Monica Blvd., W. Los Angeles 25, Calif.—AJ
 Applied Physics Corp., 383 W. Colorado Blvd., Pasadena 2, Calif.—W
 Applied Science Corp. of Princeton, P. O. Box 44, Princeton, N.J.—AE
 Assembly Products, Inc., P.O. Box 191, Chargin Falls, Ohio—AF
 Atlas Metal Stamping Co., Castor & Kensington Aves., Philadelphia 24, Pa.—A
 Atlas Precision Products Co., 3801 Castor Ave., Philadelphia 24, Pa.—A,Y,AN
 Atomic Instrument Co., 84 Mass. Ave., Cambridge 39, Mass.—I,W,AD,AE
 Atomlab, Inc., 489 5 Ave., New York 17, N.Y.—W,AG
 Audio Instrument Co., 133 W. 14th St., New York 11, N.Y.—Y
 Austin Co., Special Devices Div., 76 9 Ave., New York 11, N.Y.—T
 Autel Electronics Corp., 1950 Farmingdale Rd., Westfield, N.J.—S
 Authorized Mfrs. Service Co., 919 Wyckoff Ave., Brooklyn 27, N.Y.—AE,AM,AP
 Automatic Temperature Control Co., 5212 Pulaaki Ave., Philadelphia 44, Pa.—C,F,M,N,T,V,Y,AC,AH,AL
 Avion Instrument Corp., 299 State Highway 17, Paramus, N.J.—V,Y,AH
 Bailey Meter Co., 1050 Ivanhoe Rd., Cleveland 10, Ohio—G,H,M,Q,R,V,AA,AF
 Baldwin-Lima-Hamilton Corp., Philadelphia 42, Pa.—M,P,V,AD,AG,AL
 Barker & Williamson, Inc., 237 Fairfield Ave., Upper Darby, Pa.—I
 Bar-Ray Products Inc., 209 25 St., Brooklyn 32, N.Y.—AF
 Barton Electronics, Inc., 955 Asylum Ave., Hartford 5, Conn.—M,T
 Beckman Instruments, Inc., 2500 Fullerton Rd., Fullerton 1, Calif.—O,R
 Beckman & Whitley Inc., 955 San Carlos Ave., San Carlos, Calif.—W,AF,AN
 BENDIX AVIATION CORP., Pacific Div., 11600 Sherman Way, N. Hollywood, Calif.—A,M,P,T,AE
 Berkeley Div., Beckman Instruments, Inc., 2200 Wright Ave., Richmond 3, Calif.—B,H,I,O,V,AF,AG
 Bogue Electric Mfg. Co., 52 Iowa Ave., Paterson 3, N.J.—M
 Bone Eng'g Corp., 701 W. Broadway, Glendale 4, Calif.—A,H,T,Y
 Boston Auto Gage Co., 70 West St., Pittsfield, Mass.—M
 BOURNS LABS., 6135 Magnolia Ave., Riverside, Calif.—T,V
 Branson Instruments Inc., 430 Fairfield Ave., Stamford, Conn.—F,N
 Brown Instrument Div., Minneapolis-Honeywell Regulator Co., Wayne & Windrim Aves., Philadelphia 54, Pa.—H,M,O,R,V,AC,AF,AJ

BRUSH ELECTRONICS CO., 3405 Perkins Ave., Cleveland 14, Ohio—N,AB,AD
 Budd-Stanley Co., 43-01 22nd St., Long Island City 1, N.Y.—X
 Burlington Instrument Co., Burlington, Iowa—I,U,AB,AG,AM
 B/W Controller Corp., 2200 E. Maple Rd., Birmingham, Mich.—M
 Cambridge Instrument Co., Grand Central Terminal, New York 17, N.Y.—K,O,Q,R,W
 Canadian Radium & Uranium Corp., 630 5th Ave., New York 20, N.Y.—W
 Central Scientific Co., 1700 W. Irving Park Rd., Chicago, Ill.—R,AF,AJ
 CINEMA ENG'G CO., Div. Aerovox Corp., 1100 Chestnut St., Burbank, Calif.—U
 Clegg Labs., Inc., 142 S. Livingston Ave., Livingston, N.J.—Z,AF
 Colortone Electronics, 238 William St., New York 38, N.Y.—I
 Colvin Labs., 12 Court, Morristown, N.J.—V
 Combustion Control Corp., 718 Beacon St., Boston 15, Mass.—AA
 Computer Co. of America, Div. of Bruno N.Y. Industries Corp., 149 Church St., New York 7, N.Y.—AM
 Consolidated Eng'g. Corp., 300 N. Sierra Madre Villa, Pasadena 15, Calif.—V,W,AD
 CONSOLIDATED VACUUM CORP., 735 Ridge Rd., W. Rochester 3, N.Y.—AJ
 Control Eng'g. Corp., 560 Providence Hwy., Norwood, Mass.—V,AF
 Cramer Co., R. W., Box #49, Centerbrook, Conn.—AG
 Crown Controls Co., 124 S. Washington St., New Bremen, Ohio—A
 Cubic Corp., 2841 Canon St., San Diego 6, Calif.—U,Y
 DAGE ELECTRONICS CORP., 69 N. 2 St., Beech Grove, Ind.—T,AA,AE
 Daven Co., 191 Central Ave., Newark 4, N.J.—U,AK
 Dayton Aviation Radio & Equip. Corp., RR #3, Troy, Ohio—X
 Defender Instrument & Regulator Co., 815 Clark Ave., St. Louis 2, Mo.—V,AA,AJ
 Deitz Co., S.J., 38 River Edge Rd., River Edge, N.J.—L,M,AA
 Delaware Optical Labs, 38 Williams St., Lansdowne, Pa.—S
 Deltron Inc., Box 192, Glenside, Pa.—AM
 Detectolab, Inc., 6544 Sheridan Rd., Chicago 26, Ill.—W
 De-Tec-Tronic Labs., 1711 Terra Cotta Pl., Chicago 14, Ill.—AA,AL
 DeWald Radio & Tele. Corp., 35-15 37th Ave., Long Island City 1, N.Y.—W
 DIAMOND MICROWAVE CORP., 7 North Ave., Wakefield, Mass.—I
 Dice Co., J. W., 1 Engle St., Englewood, N.J.—N
 Digital Instrument Co., 212 Almeria Ave., Coral Gables, Fla.—I,AG
 Dillon & Co., W. C., 14620 Keswick St., Van Nuys, Calif.—AL
 DoAll Co., 254 N. Laurel Ave., Des Plaines, Ill.—N
 Doelkam Corp., 1400 Soldiers Field Rd., Boston 35, Mass.—T,AM
 Dorothea Mechanisms, Inc., Gale, 81-01 Broadway, Elmhurst, L.I., N.Y.—AG
 Dubbins Co., 41-10 45 St., Long Island City 4, N.Y.—U
 Dubrov Development Co., 235 Penn St., Burlington, N.J.—A
 Duncan & Bayley, 785 Hertel Ave., Buffalo 7, N.Y.—Y
 Dwyer Mfg. Co., F.W., 317 S. Western Ave., Chicago 12, Ill.—V,AA,AN
 ECLIPSE-PIONEER DIV., Bendix Aviation Corp., Teterboro, N.J.—H,M,T,V
 EDISON INC., THOMAS A., Instrument Div., Lakeside Ave., W. Orange, N.J.—AF
 Eldico of N.Y., Inc., 70-72 E. Second St., Mineola, L.I., N.Y.—U,W,X
 Electric Eye Equip. Co., 6 W. Fairchild St., Danville, Ill.—N,Y,AI,AL
 Electrofilm Inc., 7116 Laurel Canyon Blvd., N. Hollywood, Calif.—E,F,G,N,O,AF,AG,AH,AK,AL
 Electro Impulse Lab., 62 White St., Red Bank, N.J.—U,X
 Electro Measurements, Inc., 4312 S. E. Stark St., Portland 15, Ore.—AM
 Electro-Mechanical Instrument Co., 812 Chestnut St., Perkasie, Pa.—A
 Electronic Control Corp., 1573 E. Forest Ave., Detroit 7, Mich.—AA
 Electronic Products Co., 11 E. 3 St., Mount Vernon, N.Y.—W
 Electron-Radar Products, 1041 N. Pulaski Rd., Chicago 51, Ill.—H,AG
 Electro-Physics Co., 287 E. Broadway, New York 7, N.Y.—I,S
 Electro-Tech Equip. Co., 808 Canal St., New York, N.Y.—F,I,L,M,N,AA,AF,AG
 Electro Vision Lab., 30-16 Crescent St., Long Island City 2, N.Y.—M,S
 Ellison Draft Gage Co., 548 W. Monroe St., Chicago 6, Ill.—Q,V
 Elm Labs., 18 S. Broadway, Dobbs Ferry, N.Y.—I
 El-Tronics, Inc., 437 N. 5th St., Philadelphia 23, Pa.—W,AE
 Endeavor Corp., 689 S. Fair Oaks Ave., Pasadena 2, Calif.—D
 Eng'g Research & Devel., Addison, Ill.—D
 Espey Mfg. Co., 525 E. 72 St., New York 21, N.Y.—AE

Ess Instrument Co., 96 S. Washington Ave., Bergenfield, N.J.—AA,AC,AI
 Federal Mfg. & Eng'g. Corp., 211 Steuben St., Brooklyn 5, N.Y.—I
 FEDERAL TELEPHONE & RADIO CO., DIV. I.T.&T. CORP., 100 Kingsland Rd., Clifton, N.J.—T,AF
 Feiler Eng'g. & Mfg. Co., 8026 N. Monticello Ave., Skokie, Ill.—I,X,AB,AF
 Fielden Instrument Div., Robertshaw-Fulton Controls Co., 2920 N. 4th St., Philadelphia 33, Pa.—E,G,M,N,O,R,T,Y,AD,AF,AH,AL
 Fischer & Porter Co., 19 Warminister Rd., Hatboro, Pa.—C,M,V,AC,AE,AF
 Flader Inc., Frederic, 583 Division St., N. Tonawanda, N.Y.—V,AL
 Foxboro Co., 35 Neponset Ave., Foxboro, Mass.—C,E,G,H,K,M,N,O,Q,R,T,V,AD,AF,AH,AL
 Franklin Electronics Inc., 415 W. Pike St., Philadelphia 40, Pa.—AD
 FREED TRANSFORMER CO., 1718 Weirfield St., Brooklyn 27, N.Y.—AM
 Gardner Lab. Inc., H. A., 4723 Elm St., Bethesda 14, Md.—F,J,N
 Gaskins Co., 1005 S. Auroraway, Wheaton, Ill.—X,AF,AG
 GENERAL ELECTRIC CO., Apparatus Div., 1 River Rd., Schenectady 5, N.Y.—F,H,I,M,N,S,T,U,W,AA,AB,AD,AF,AG,AH,AI,AJ
 GENERAL RADIO CO., 275 Mass. Ave., Cambridge 39, Mass.—I,AB,AM
 General Riveters Inc., Elmwood & Hertel, Buffalo 7, N.Y.—Y,AH
 GIANNINI & CO., G. M., 914 E. Green St., Pasadena 1, Calif.—V,AE,AF
 Gilmore Industries, Inc., 5713 Euclid Ave., Cleveland 3, Ohio—M,T,V,Y,AD,AE,AH,AL,AM
 Glenco Corp., Durham Ave., Metuchen, N.J.—E
 G. & M. Equipment Co., 7315 Varna Ave., North Hollywood, Calif.—I
 G-M Labs. Inc., 4300 N. Knox Ave., Chicago 41, Ill.—S
 Gorrell & Gorrell, Haworth, N.J.—M,T,AG
 Greenleaf Mfg. Co., 7814 Maplewood Ind. Ct., St. Louis 17, Mo.—A,C,H,I,V,Y,AH,AK
 GUILTON MFG. CO., 212 Durham Ave., Metuchen, N.J.—E,N,V,AD
 G. W. Associates, P. O. Box 2263, El Segundo, Calif.—X
 Hanson-Gorrell-Brian, 1 Continental Hill, Glen Cove, N.Y.—T,Y,AF
 Hastings Instrument Co., Superhighway at Pine Ave., Hampton, Va.—V,AJ
 Haydon Co., A.W., 232 N. Elm St., Waterbury, Conn.—AG
 Haydon Mfg. Co., 245 E. Elm St., Torrington, Conn.—AG
 Hava Corp., E. 8 St., Michigan City, Ind.—H,M,Q,V,AA,AF
 Healy-Ruff, 772 Hampden Ave., St. Paul 14, Minn.—M,V
 Hewlett-Packard Co., 395 Page Mill Rd., Palo Alto, Calif.—I
 Herzog Miniature Lamp Works, 12-23 Jackson Ave., Long Island City, N.Y.—L
 HICKOK ELECTRICAL INSTRUMENT CO., 10514 Dupont Ave., Cleveland 8, Ohio—I,S
 Hoke, Inc., 136 S. Dean St., Englewood, N.J.—H
 Hoyt Electrical Instrument Works, 42 Carleton St., Cambridge, Mass.—A
 Hufford Machine Works, 2201 Carmelina Ave., Los Angeles 64, Calif.—Y
 Hughey & Phillips, 3300 N. San Fernando Blvd., Burbank, Calif.—L
 Huppert Co., E. R., 6830 Cottage Grove Ave., Chicago 37, Ill.—AF
 Illinois Testing Labs., 420 N. LaSalle St., Chicago 10, Ill.—AF
 Industrial Control Co., Straight Path & Arlington Ave., Wyandanch, N.Y.—T,Y
 Industrial Electronics, 8060 Wheeler St., Detroit 10, Mich.—N,T,V,AD
 Industrial Electronic Engineers, 8973 Lankershim Blvd., N. Hollywood, Calif.—AE,AL
 Industrial Electronics Co., Hanover, Mass.—L,M,N
 Industrial Instruments Inc., 89 Commerce Rd., Cedar Grove, N.J.—O
 Industrial Nucleonics Corp., 1205 Chesapeake Ave., Columbus 12, Ohio—F,N,AL
 Industrial Television Inc., 369 Laxington Ave., Clifton, N.J.—X,AB
 Industrial Test Equipment Co., 55 E. 11th St., New York 3, N.Y.—AM
 International Medical Research Co., 60 E. 42 St., New York, N.Y.—W
 Iq Industries, 6110 Wilshire Blvd., Los Angeles 36, Calif.—E,F,G,L,M,N,O,T,AA,AG
 Jack Scientific Instrument Co., Bill, Box C-4, Solana Beach, Calif.—L,S,Y
 J-R-T INSTRUMENTS, 441 Chapel St., New Haven, Conn.—I,AF
 JOHNSON CO., E. F., Waseca, Minn.—A
 Kaar Eng'g Corp., 2995 Middlefield Rd., Palo Alto, Calif.—P
 Kaiser Metal Products Inc., Bristol, Pa.—Y
 Kalbfell Labs. Inc., 1090 Morena Blvd., San Diego 10, Calif.—AM
 Kartron, P.O. Box 472, Huntington Beach, Calif.—Z
 KAY ELECTRIC CO., 14 Maple Ave., Pine Brook, N.J.—I
 Kearfott Co., 1378 Main Ave., Clifton, N.Y.—T,Y
 Kinetix Inst. Co., 902 Broadway, New York 10, N.Y.—Y

Kings Electronics Co., 40 Marbledale Rd., Tuckahoe, N.Y.—I,X
 Kocour Co., 4800 S. St. Louis Ave., Chicago 32, Ill.—R
 Kybernetes Corp., 1100 Raymond Blvd., Newark 5, N. J.—H,L,T,AE,AF
 LaMotte Chemical Products Co., Baltimore 4, Md.—R
 Lear Inc., 11916 W. Pico Blvd., Los Angeles 64, Calif.—A,X,Y
 Leeds & Northrup Co., 4907 Stenton Ave., Philadelphia 44, Pa.—R,AF
 Leonard Electric Products Co., 67 34th St., Brooklyn 32, N.Y.—AE
 LIBRASCOPE INC., 1607 Flower St., Glendale 1, Calif.—W
 Liquidepth Indicators Inc., 43-22 10 St., Long Island City 1, N.Y.—M
 Liquidometer Corp., 41-03 36th St., Long Island City 1, N.Y.—M
 L & O Research & Devel Corp., 184 N. Wayne Ave., Wayne, Pa.—Y
 Lumelite Electronic Co., 407 S. Dearborn St., Chicago 5, Ill.—M,AA,AG
 Lynch Carrier Systems, 96 Jesse St., San Francisco 5, Calif.—AE
 Mackenzie Products Co., 141 Brewery St., New Haven 11, Conn.—AG
 Magnetic Amplifiers Inc., 682 Tinton Ave., New York 55, N.Y.—Y
 Maznex Corp., 90-28 Van Wyck Expressway, Jamaica 18, N.Y.—W,X,Y
 Manning, Maxwell & Moore, 250 E. Main St., Stratford, Conn.—H,K,M,V,AF,AF
 Marlon Electrical Instrument Co., 400 Canal St., Manchester, N.H.—S,U,AB,AM
 Maurer Inc., J. A. 37-01 31st St., Long Island City 1, N.Y.—S
 McNeill Eng'g. Co., 4057 W. Van Buren St., Chicago 24, Ill.—AA
 Menlo Research Lab., P. O. Box 522, Menlo Park, Calif.—R,W
 Metron Instrument Co., 432 Lincoln St., Denver 3, Colo.—AN
 Metrotype Corp., 6100 Archer Rd., Summit, Ill.—H,I,Y,AE,AF,AN
 MILLIVAC INSTRUMENT CORP., 444 2nd St., Schenectady, N.Y.—AM
 Mine Safety Appliances Co., 201 N. Braddock Ave., Pittsburgh 8, Pa.—Q
 Minneapolis-Honeywell Regulator Co., Minneapolis 8, Minn.—C,G,H,I,K,M,O,R,T,V,AA,AC,AD,AM
 Minnesota Electronics Corp., 1058 University Ave., St. Paul 4, Minn.—F,AF
 Multi-Tron Lab., 4624 Washington Blvd., Chicago 44, Ill.—AJ
 NAER Corp., 11777 Santa Monica Blvd., West Los Angeles 25, Calif.—AJ
 National Electrical Machine Shops, 919 Jesup Blair Dr., Silver Spring, Md.—V,W
 National Instrument Co., 23 E. 26 St., New York 10, N.Y.—A
 National Radiac Inc., 10 Crawford St., Newark 2, N.J.—W
 National Research Corp., 160 Charlemont St., Newton Highlands 61, Mass.—AJ
 Newark Controls Co., 15 Ward St., Bloomfield, N.J.—M
 Non-Linear Systems, Del Mar Airport, Del Mar, Calif.—AM
 Nasker Eng'g. Products, 1216 Livermore St., Yellow Springs, Colo.—AD
 Nuclear Development Lab., P.O. Box 7034 Kansas City, Mo.—W
 Nuclear Research & Devel. Co., 6425 Etzel Ave., St. Louis 14, Mo.—W
 Nucleonic Co. of America, 497 Union St., Brooklyn 31, N.Y.—W
 Ohmart Corp., 2236 Bogen St., Cincinnati 14, Ohio—C,F,M,N,W,AC
 Olympic Devel. Div., Olympic Radio-TV 30 Commerce Rd., Stamford, Conn.—T,Y
 Pacific Mercury TV Mfg. Corp., 5955 Van Nuys Blvd., Van Nuys, Calif.—AD,AE
 Panoramic Radio Products, 10 S. 2 Ave., Mt. Vernon, N.Y.—AE
 Pantek Co., 208 42 St., Manhattan Beach, Calif.—I
 Penn Industrial Instrument Corp., 4110 Haverford Ave., Philadelphia 4, Pa.—H,M,AE,AF
 Permoflux Corp., 4900 W. Grand Ave., Chicago 39, Ill.—AM
 Peters Co., O. S., 1353 N.Y. Ave., N.E., Washington 2, D.C.—I,AD,AM
 Petroff, P. A., 127 Water St., New York 5, N.Y.—A,AN
 PHAOSTRON CO., 151 Pasadena Ave., S. Pasadena, Calif.—U,AK,AM,AR
 Phila. Scientific Glass Co., 4 Eckard Ave., Abington, Pa.—O,AC,AF
 Phoenix Precision Instrument Co., 3803 N. 5 St., Philadelphia 40, Pa.—F,L,M,S,Y,AA
 Photobell Co., 116 Nassau St., New York 38, N.Y.—C,F,G,L,M,N,O,AA,AI
 Photocon Research Pro., 421 N. Foothill Blvd., Pasadena 8, Calif.—V,AE
 Photoswitch Inc., 77 Broadway, Cambridge 42, Mass.—M,AA,AG
 Physical Research Associates, #1 Azurelee Dr., Malibu, Calif.—D,W,AM
 Physical Research Labs., Inc., 1909 Park Ave., New York 35, N.Y.—K,O
 Pioneer Electronics Corp., 24 Saunders St., Salem, Mass.—AJ
 Polarizing Instrument Co., Irvington-on-Hudson, N.Y.—AD
 Polyphase Instrument Co., 705 Haverford Rd., Bryn Mawr, Pa.—AD,AH

ELECTRONIC INDUSTRIES DIRECTORY

Poole Instruments Inc., 150 Express St., Dallas, Tex.—AK
 Potter Instrument Co., 115 Cutter Mill Rd., Great Neck, N.Y.—I
 Precision Radiation Instruments, 2235 S. La Brea Los Angeles 16, Calif.—C,N,W
 Precision Thermometer & Instrument Co., 1434 Brandywine St., Philadelphia 30, Pa.—K,M,AC,AF,AJ
 Process & Instruments, 15 Stone Ave., Brooklyn 33, N.Y.—AJ
 "Q" Glass Co., 470 Broad St., Bloomfield, N.J.—AJ
 Radioactive Products Inc., 443 W. Congress, Detroit 26, Mich.—W
 RADIO CORP. OF AMERICA, RCA Victor Div., Eng'g. Products Div., Camden 2, N.J.—B
 Rahm Instruments, 12 W. Broadway, New York 7, N.Y.—V
 RAYTHEON MFG. CO., Waltham 54, Mass.—P
 Remington Rand Inc., Eng'g. Research Associates Div., 1902 W. Minnehaha Ave., St. Paul, Minn.—T,AL
 Resdel Eng'r., 2351 Riverside Dr., Los Angeles 39, Calif.—W,X,AA,AD,AE
 Research Electronics Labs., Roslyn, Pa.—AJ
 Revere Corp. of America, 845 N. Colony Rd., Wallingford, Conn.—H,M
 Richards Co., Arklay S., 85 Winchester St., Newton Highlands 61, Mass.—AF
 Rich-Roth Labs., 1240 Main St., Hartford 8, Conn.—C,H,M
 Ripley Co., Middletown, Conn.—AA
 Roanwell Corp., 662 Pacific St., Brooklyn 17, N.Y.—F,N
 Robinette Co., W. C., 802 R. Fair Oaks Ave., S. Pasadena, Calif.—T,Y
 Rockwell Eng'g. Co., 4063 N. New Jersey St., Indianapolis 5, Ind.—S,Y,Z,AD,AL
 Rowe Industries, 1702 Wayne St., Toledo 9, Ohio—AE,AN
 Rubicon Co., Ridge Ave., at 35th St., Philadelphia 32, Pa.—Z,AM,AN
 Ruge-de Forest Inc., 50 Moulton St., Cambridge 38, Mass.—AF
 Rutishauser Corp., 490 S. Fair Oaks Ave., Pasadena 1, Calif.—V
 SAMPSON CHEMICAL & PIGMENT CORP., 2830 W. Lake St., Chicago 12, Ill.—L
 Schwien Eng'g. Co., 16217 Lindbergh St., Van Nuys, Calif.—AF
 Scientific Specialties Corp., Snow & Union Sts., Brighton 85, Mass.—AJ
 Sensitive Research Instrument Corp., 9 Elm Ave., Mt. Vernon, N.Y.—I,W,X,AF,AM
 Scott Inc., H. H., 885 Putnam Ave., Cambridge 39, Mass.—AB,AM
 Servo Corp. of America, 2020 Jericho Tpke., New Hyde Park, L.I., N.Y.—W,Y,AF
 Servo-Tek Products Co., 1086 Goffie Rd., Hawthorne, N.J.—A
 SHALLCROSS MFG. CO., 520 Pusey Ave., Collingdale, Pa.—AK
 Shoup Eng'g. Co., 221 E. Cullerton St., Chicago 16, Ill.—W,AD
 Sierra Electronic Corp., 1050 Brittan Ave., San Carlos, Calif.—U
 Simmonds Aerocessories, 105 White Plains Rd., Tarrytown, N.Y.—E,M
 Special Instruments Labs., Inc., 312 W. Vine St., Knoxville, Tenn.—W,AG
 Standard Coil Products Co., 2329 N. Pulaski Rd., Chicago 39, Ill.—Y
 Standard Electric Time Co., 119 Logan St., Springfield, Mass.—AG
 Standard Electronic Research Corp., 2 East End Ave., New York 21, N.Y.—F,N,AF
 Standard Gage Co., Inc., Poughkeepsie, N.Y.—N
 Sterling Instruments Co., 15310 W. McNichols, Detroit 35, Mich.—M,N,T,U,V,Y,AJ,AK,AL,AM
 Sterling Mfg. Co., 7201 Wentworth Ave., Cleveland 2 Ohio—A,U
 Stewart Instrument Co., 6507 Grand River, Detroit 8, Mich.—V
 Strandberg Eng'g. Labs., 416 W. Market St., Greensboro, N.C.—O
 Streeter-Amet Co., 4101 Ravenswood Ave., Chicago 18, Ill.—L,V,W,Y,AD,AF,AH,AJ,AK,AL
 Sturtevant Co., P. A., Addison, Ill.—AH,AI
 Taco West Corp., 525 W. Noble St., Chicago 22, Ill.—AF
 Technical Products Co., 19 N. Dunlap, Medical Center, Memphis 1, Tenn.—C,G,J,K,L,M,N,O,R,S,V,AC
 Telechron Dept., General Electric Co., Homer Ave., Ashland, Mass.—AG
 Teletronics Laboratory, Inc., 54 Kinkel St., Westbury, L.I., N.Y.—I
 Telescreen Corp., 36 Grove St., New Canaan, Conn.—E,F,K,M,N,AA
 Tempil Corp., 11 W. 25 St., New York 11, N.Y.—AF
 Tensitron, Inc., Pin Hill, Harvard, Mass.—AF

Thermo Electric Mfg. Co., 465 Huff St., Dubuque, Iowa.—AF
 Thermo Instruments Co., 1310 Old County Rd., Belmont, Calif.—E,K,M
 Thompson Clock Co., H. C., 38 Federal St., Bristol, Conn.—S,AG
 Torsion Balance Co., Monhegan St., Clifton, N.J.—AC,AL
 Tracerlab, Inc., 130 High St., Boston 10, Mass.—F,H,M,N,W,AL
 TRANSCOIL CORP., 107 Grand St., New York 13, N.Y.—Y
 Trans-Sonics Inc., Bedford Airport, Bedford, Mass.—V,Y,AD,AF
 Triplett Electrical Instrument Co., Harmon Rd., Bluffton, Ohio—AK,U
 Ultrasonic Corp., 61 Rogers St., Cambridge 42, Mass.—I,N,P,T,Y,AR,AE
 Union Switch & Signal Div., Westinghouse Airbrake Co., 1789 Braddock Ave., Pittsburgh 18, Pa.—AO
 United Electric Controls Co., 85 School St., Watertown 75, Mass.—AF
 United States Gauge, American Machine & Metals Inc., Clymer Ave., Sellersville, Pa.—H,M,Q,V,AE,AF,AH,AJ
 U.S. Testing Co., 1415 Park Ave., Hoboken, N.J.—E
 Vacuum Tube Products, 506 S. Cleveland St., Oceanside, Calif.—V,AJ
 Varo Mfg. Co., 1801 Walnut Co., Garland, Tex.—M,Q
 VECTRON, INC., 400 Main St., Waltham 54, Mass.—S,X,Y
 VICTOREEN INSTRUMENT CO., 3800 Perkins Ave., Cleveland 14, Ohio—W
 Vitro Corp. of America, 233 Broadway, New York 7, N.Y.—H
 Walkmann Watch Co., 15 W. 47 St., New York 36, N.Y.—AG
 Walkirt Co., 145 W. Hazel St., Inglewood 3, Calif.—I
 Washington Institute of Technology Inc., 4810 Clavert Rd., College Park, Md.—K,V,AF,AN
 Welch Electric Co., 1221 Wade St., Cincinnati 14, Ohio—CAM
 WELCH MFG. CO., W. M., 1515 Sedgwick St., Chicago 10, Ill.—R
 Weltron Co., 19500 W. 8 Mile Rd., Detroit 19, Mich.—AG
 Westberg Mfg. Co., 144 S. Coombs St., Napa, Calif.—AN
 Westinghouse Electric Corp., Box 868, Pittsburgh 30, Pa.—I,T,U,X,AB,AE,AF,AG
 West Instrument Co., 525 N. Noble St., Chicago 22, Ill.—AF
 Western Electronic Enterprises, 3348 W. Compton Blvd., Gardena, Calif.—AJ
 Western Radiation Lab., 1107 W. 24 St., Los Angeles 7, Calif.—W
 WESTON ELECTRICAL INSTRUMENT CORP., 614 Frelinghuysen Ave., Newark 5, N.J.—I,K,L,S,U
 Weston Labs., Inc., Old Littleton Rd., Harvard, Mass.—I
 Wheeler Instruments Div., Barber-Colman Co., 1300 Rock St., Rockford, Ill.—AF
 White & Sons, Inc., Wilfrid O., 178 Atlantic Ave., Boston 10, Mass.—P
 Whittington Pump & Eng'g. Corp., 1126 Prospect St., Indianapolis, Ind.—AJ
 Wickes Eng'g. & Construction Co., 12th St. & Ferry Ave., Camden 4, N.J.—AG
 Williams, Brown & Earle, 904 Chestnut St., Philadelphia 7, Pa.—F,J,K,L,O,R,S
 Wilson & Co., G. C., 2 N. Passaic Ave., Chatham, N.J.—AG
 Winslow Co., 9 Liberty St., Newark 5, N.J.—AF,AJ
 Yellow Springs Instrument Co., P. O. Box 106, Yellow Springs, Ohio—E,AF

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Analysis equipment, electrochemical Z
 Balancing equipment, dynamic Y
 Cookers, electronic A
 Cyclotrons B
 Dielectric heating equipment D
 Diffraction equipment, electron AA
 Electric furnaces E
 Electron microscopes F
 Electronic photoflash G
 Electroplating equipment H
 Flow locators, metal O
 Flow locators, non metal AE
 Geophysical instruments I
 Heating elements J
 Induction heating equipment K
 Infrared drying equipment L
 Ionization chambers M
 Irradiators N
 Meteorological equipment X
 Nuclear equipment P
 Photographic X-ray equipment Q
 Precipitators, electrostatic AB
 Spectrographic equipment R

Thickness equipment, ultrasonic . . . AC
Titration apparatus . . . S
TV, industrial . . . AF
Vibrators, ultrasonic . . . AD
X-ray diffraction equipment . . . T
X-ray filters . . . U
X-ray inspection machines . . . V
X-ray screens . . . W

Advanced Electronics, Inc., 94 Silas Deane Hwy., Rocky Hill, Conn.—V.X
 Aero Electronics Co., 1512 N. Wells St., Chicago 10, Ill.—I.O
 Aeroprojects, Inc., W. Chester, Pa.—AD
 American Optical Co., Box A, Buffalo 15, N.Y.—R
 American Instrument Co., 8050 Georgia Ave., Silver Spring, Md.—J
 American Radio Co., 445 Park Ave., New York 22, N.Y.—L
 Anglo Corp., 2037 W. Division St., Chicago 22, Ill.—G
 Annis Co., R. B., 1101 N. Delaware St., Indianapolis 2, Ind.—K.Y
 Applied Physics Corp., 362 W. Colo. St., Pasadena 1, Calif.—P.R
 Applied Research Lab., P.O. Box 1710, Glendale, Calif.—R
 Atlantic Research Corp., 901 N. Columbus St., Alexandria, Va.—I
 Atlas Coil Winders Inc., 39 Manhattan St., Stamford, Conn.—U
 Atomic Instrument Co., 84 Mass. Ave., Cambridge 39, Mass.—M.P
 Atomlab, Inc., 489 5 Ave., New York 17, N.Y.—P
 Baird Associates Inc., 33 University Rd., Cambridge, Mass.—R
 Barber-Colman Co., 1300 Rock St., Rockford, Ill.—A
 Bar-Ray Products Inc., 209 25 St., Brooklyn 32, N.Y.—L.M.Q
 Bausch & Lomb Optical Co., 628 St. Paul St., Rochester, N.Y.—R
 Beckman Instruments, Inc., 2500 Fullerton Rd., Fullerton 1, Calif.—R.S.Z
 Beckman & Whitley, 985 San Carlos Ave., San Carlos, Calif.—X
 Berkeley Div., Beckman Instruments, Inc., 2200 Wright Ave., Richmond 3, Calif.—M.P
 Boleyn Corp. of America, 118 E. 25th St., New York 10, N.Y.—G
 Bracke-Seib X-Ray Co., 293 3 Ave., New York 10, N.Y.—T.V
 Brown Inst. Div., Minn.-Honeywell, Wayne & Windrim Ave., Phila., Pa.—AF
 Cambridge Instrument Co., Grand Central Terminal, New York 17, N.Y.—I
 Central Scientific Co., 1700 W. Irving Park Rd., Chicago, Ill.—S
 Century Geophysical Corp., 1333 N. Utica, Tulsa, Okla.—I
 Chatham Electronics Corp., 630 W. Mt. Pleasant Ave., Livingston, N.J.—M.P
 Consolidated Eng'g. Corp., 300 N. Sierra Madre Villa, Pasadena 15, Calif.—R.Z
 CONSTANTIN & CO. I. L., Lodi, N.J.—AF
 Control Devices Inc., 9918 Charlevoix Ave., Detroit 14, Mich.—O
 Cox & Co., 115 E. 23 St., New York, N.Y.—J
 DAGE ELECTRONICS CORP., 69 N. 2 St., Beech Grove, Ind.—AF
 Davies Labs., Inc., 4705 Queensbury Rd., Riverdale, Md.—I
 Delaware Optical Labs., 36 Williams St., Lansdowne, Pa.—L.R.Q
 Detectolab, Inc., 6544 Sheridan Rd., Chicago 26, Ill.—P
 Diamond Power Specialty, Lancaster, Ohio—AF
 Dice Co., J. W., 1 Engle St., Englewood, N.J.—O.V.AE
 Digital Instrument Co., 212 Almeria Ave., Coral Gables, Fla.—P
 Dormitzer Electric & Mfg. Co., 5 Hadley St., Cambridge 40, Mass.—G
 Dressen-Barnes Corp., 250 N. Vinedo Ave., Pasadena 8, Calif.—H.I
 DUMONT LABS., A. B., 1500 Main St., Clifton, N.J.—AF
 DuPont de Nemours & Co., E. I., 10 & Market St., Wilmington 98, Del.—W
 Eagle Electric Mfg. Co., 23-10 Bridge Plaza S., Long Island City, N.Y.—J
 Egan, Lab., 107-56 118 St., Richmond Hill 19, N.Y.—P
 Eldico of N.Y., 70-72 E. 2nd St., Mineola, N.Y.—D.K
 Electric Controller & Mfg. Co., 2700 E. 79th St., Cleveland 4, Ohio—K
 Electric Furnace Co., Wilson St. & Penna R.R., Salem, Ohio—E
 Electrofilm Corp., 7116 Laurel Canyon Blvd., N. Hollywood, Calif.—E.H.J.K.L.O.R.S.A.C
 Electronic Eng'g. Co., 862 W. Bowery St., Akron 7, Ohio
 Electronic Heating Corp., 66 Needham St., Newton Highlands 61, Mass.—A.D.E.K.AB, AD
 Electronic Processes Corp., 1021 San Antonio Rd., Los Altos, Calif.—D
 Electronic Products Co., 111 E. 3rd St., Mt. Vernon, N.Y.—P
 Electronic Research Co., 11550 89 N.E., Seattle 65, Wash.—J.L
 Electro-Physics Co., 287 E. Broadway, New York 7, N.Y.—S.Z

Electro-Seal Corp., 946 North Ave., Des-plaines, Ill.—I
 Electro-Sound Corp., 115 Halleck St., Boston, Mass.—J
 Electro-Tech Equip. Co., 308 Canal St., New York, N.Y.—E.H.J
 Electro Vision Lab., 30-16 Crescent St., Long Island City 2, N.Y.—G
 El-Tronics Inc., 5 & Noble Sts., Philadelphia 23, Pa.—M.P
 Endeavor Corp., 689 S. Fair Oaks Ave., Pasadena 2, Calif.—Y.AD
 Eng'g. Res'ch. & Devel. Co., Addison, Ill.—D
 Epco Products, Inc., 2500 Atlantic Ave., Brooklyn 7, N.Y.—G
 Feiler Eng'g. & Mfg. Co., 8026 N. Monticello Ave., Skokie, Ill.—P
 FORD INSTRUMENT, DIV., SPERRY CORP., 31-10 Thomson Ave., Long Island City 1, N.Y.—S
 Franklin Electronics Inc., 415 W. Pike St., Philadelphia 40, Pa.—P.R.V.Z
 Freed Electronics & Controls Corp., 200 Hudson St., New York 13, N.Y.—G.M.P
 GALBRAITH & SONS, 450 6 Ave., New York 11, N.Y.—J
 Gates Electric Co., 65 W. Broadway, New York, N.Y.—H
 GENERAL ELECTRIC CO., Apparatus Div., 1 River Rd., Schenectady 5, N.Y.—B.D.E.G. J.K.M.Y.R
 GENERAL ELECTRIC CO., Broadcast Equip. & Commercial, Equip. Div., Electronics Park, Syracuse, N.Y.—P.A.F
 GENERAL PRECISION LAB., 63 Bedford Rd., Pleasantville, N.Y.—AC.AF
 GENERAL RADIO CO., 275 Mass. Ave., Cambridge 39, Mass.—P
 Georator Corp., Manassas, Va.—I
 Geotronics Labs., 1314 Cedar Hill Ave., Dallas 11, Tex.—I
 Girdler Co., Thermex Div., 224 E. Broadway, Louisville 1, Ky.—D
 Greenleaf Mfg. Co., 7814 Maplewood Ind. Ct., St. Louis 17, Mo.—G.I.P.Y.AD
 Griev-Hendry Corp., 1815 W. Lake St., Chicago 12, Ill.—E.L
 GULTON MFG. CORP., Metuchen, N.J.—I.Y. AC.AD
 Gundlach Mfg. Co., 38 E. Main St., Fairport, N.Y.—Q
 Hansen Co., Wm., 165 Silverbrook, Niles, Mich.—P
 Hanson-Gorrill-Brian, 1 Continental Hill, Glen Cove, N.Y.—G
 Harper Electric Furnace Corp., 39 River St., Buffalo 2, N.Y.—E
 Harwood Mfg. Co., 466 W. Superior St., Chicago 10, Ill.—G
 Hufford Machine Works, Electronics Div., 2201 Carmelina Ave., Los Angeles 64, Calif.—H
 Huppert Co., K. H., 6830 Cottage Grove Ave., Chicago 37, Ill.—E.J
 Induction Heating Corp., 181 Wythe Ave., Brooklyn 11, N.Y.—D.K
 Industrial Electronic Eng'rs., 3973 Lanker-shim Blvd., N. Hollywood, Calif.—A.D
 Industrial Nucleonics Corp., 1205 Chesapeake Ave., Columbus 12, Ohio—P
 Industrial TV, 369 Lexington, Clifton, N.J.—AF
 INTERNATIONAL RESEARCH ASSOCI-ATES, 2221 Warwick Ave., Santa Monica, Calif.—I
 Jackson Electrical Instrument Co., 18 S. Patterson Blvd., Dayton 2, Ohio—I
 Jarrell-Ash Co., 165 Newbury St., Boston 16, Mass.—I.L.R.T
 Kabar Mfg. Co., 1907 White Plains Rd., New York 62, N.Y.—D.K
 Kaye-Halbert Corp., 3623 Eastham Dr., Culver City, Calif.
 Kemlite Labs., 1819 W. Grand Ave., Chicago 22, Ill.—G
 Kepco Labs., 131-38 Sanford Ave., Flushing 55, N.Y.—H
 Kocour Co., 4800 S. St. Louis Ave., Chicago 32, Ill.—H.S.Z
 Laboratory Equipment Corp., Hilltop Rd., St. Joseph, Mich.—E.K.S.Z
 LaRose & Assoc., W. T., 31 Ontario St., Cohoes, N.Y.—D
 Las-Lab, 316 W. Saratoga St., Baltimore 1, Md.—G
 Lee Electric & Mfg. Co., 2806 Clearwater St., Los Angeles 39, Calif.—H
 Leitz, Inc., 468 4 Ave., New York 16, N.Y.—F
 Lepel High Frequency Labs., 54-18 37 Ave., Woodside 77, L.I., N.Y.—K
 Lovina Eng'g. Corp., 8203 Cedar St., Silver Springs, Md.—T
 Lysoco Mfg. Co., 1401 Clinton, Hoboken, N.J.—H
 Magnaflex Corp., 7300 W. Lawrence Ave., Chicago 31, Ill.—O.A.C.AE
 Magnex Corp., 90-28 Van Wyck Expressway, Jamaica 18, N.Y.—P.U
 MALLORY & CO. P. R., 3029 E. Washington St., Indianapolis 6, Ind.—H
 MANUFACTURERS ENG'G. & EQUIP., York & Mill Rds., Hatboro, Pa.—M.P
 Marion Electrical Instrument Co., 400 Canal St., Manchester, N.H.—K
 Menlo Research Lab., P. O. Box 522, Menlo Park, Calif.—N.P
 Meyer & Co., Hugo, 39 W. 60th St., New York 23, N.Y.—I
 Midwestern Geophysical Lab., 3401 S. Har-ward, Tulsa, Okla.—I

Miller Co., J. W., 5917 S. Main St., Los Angeles, Calif.—U
 National Electrical Machine Shops, 919 Jesup Blair Dr., Silver Spring, Md.—G.P
 National Research Corp., 160 Charlemont St., Newton Highlands 61, Mass.—M
 National Spectrographic Labs, Inc., 6300 Euclid Ave., Cleveland 3, Ohio—R
 Neutronic Associates, 87-16 116th St., Rich-mond Hill, N.Y.—AB
 New Rochelle Tool Corp., 320 Main St., New Rochelle, N.Y.—D.K
 North American Philips Co., 750 S. Fulton Ave., Mt. Vernon, N.Y.—F.T
 Northeastern Eng'g., Bedford St., Manches-ter, N.H.—X
 Nuclear Development Lab., P.O. Box 7031, Kansas City, Mo.—P
 Nuclear Instrument & Chemical Corp., 223 W. Erie St., Chicago 10, Ill.—M.P
 Nuclear Measurements, 2460 N. Arlington Ave., Indianapolis 18, Ind.—P
 Nuclear Research Corp., 2563 Grays Ferry Ave., Philadelphia 46, Pa.—P
 Nuclear Research & Devel. Co., 6425 Etzel Ave., St. Louis 14, Mo.—M.P.AA
 Nucleonic Co. of America, 497 Union St., Brooklyn 31, N.Y.—M.P
 Ohmart Corp., 2347 Ferguson Rd., Cincinnati 38, Ohio—M.P
 Opad-Green Co., 71 Warren St., New York 7, N.Y.—H
 Pacific Scientific Co., 25 Stillman St., San Francisco 7, Calif.—E
 Patwin Instruments Div., Patent Button Co., 41 Brown St., Waterbury 20, Conn.—X
 Peeco Corp., 2760 Whittier Blvd., Los Angeles 23, Calif.—D
 Peschel Electronics, 13 Garden St., New Rochelle, N.Y.—D.K
 Phila. Scientific Glass Co., 4 Eckard Ave., Abing-ton, Pa.—I
 Phoenix Precision Instrument Co., 3803 N. 5 St., Philadelphia 40, Pa.—R.Z.A.F
 Photocon Research Products, 421 N. Foothill Blvd., Pasadena 8, Calif.—O.A.C
 Photovolt Corp., 95 Madison Ave., New York 16, N.Y.—S.Z
 Physical Research Lab., 1909 Park Ave., New York 35, N.Y.—X
 Piezo Products Co., Whitney St., Framing-ham, Mass.—AD
 Potter Instrument Co., 115 Cuttermill Rd., Great Neck, N.Y.—P
 Power Transformer Co., 532 Mulberry St., Newark 5, N.J.—D.E.H.V.A.R
 Precision Radiation Instruments, 2235 S. La Brea, Los Angeles 16, Calif.—I.P
 Precision Scientific Co., 3737 W. Cortland St., Chicago 47, Ill.—S
 Process & Instruments, 15 Stone Ave., Brooklyn 33, N.Y.—E.R
 Radiation Counter Labs., 5122 W. Grove St., Skokie, Ill.—E.I.M.P
 Radioactive Products Inc., 443 W. Congress, Detroit 26, Mich.—P
 Radio Ceramics Corp., 109 S. Superior St., Angola, Ind.—J
 RADIO CORP. OF AMERICA, Eng'g. Prod-ucts Div., Camden, N.J.—F.AA.AF
 Radio Sonic Corp., 111 Blecker St., New York 12, N.Y.—AD
 Rapid Electric Co., 2881 Middletown Rd., New York 61, N.Y.—H
 Rapid Electroplating Process, Inc., 1414 S. Wabash Ave., Chicago 5, Ill.—H
 RAYTHEON MFG. CO., 100 River St., Wal-tham 54, Mass.—A.A.B.A.D
 Reeder & Co., C. M., 171 Victor Ave., Detroit 3, Mich.—R
 Reeve Electronics Inc., 609 W. Lake St., Chi-cago 6, Ill.—D.K
 Refrigeration Systems, 646 W. Washington Blvd., Chicago 6, Ill.—I
 Regulator Eng'g. & Devel. Co., 11545 W. Jef-ferson Blvd., Culver City, Calif.—H
 Resdel Eng'g., 2351 Riverside Dr., Los Ange-les 39, Calif.—A.D
 Richardson Labs., Kenneth, 254 Vincent Ave., Lynbrook, N.Y.—D
 Rich-Roth Labs., 1240 Main St., Hartford, Conn.—AD
 Rubicon Co., Ridge Ave. at 35th St., Phila-delphia 32, Pa.—O
 Ruska Instrument Corp., 4607 Montrose Blvd., Houston 6, Tex.—I
 Sanders Associates, 137 Canal St., Nashua, N.H.—R
 Sciaky Bros., 4915 W. 67th St., Chicago 38, Ill.—K
 Shannon Luminous Materials Co., 7356 Santa Monica Blvd., Hollywood 46, Calif.—L.O
 Sherman Industrial Electronics Co., 5050 Washington Ave., Belleville, N.J.—D.K
 Seismograph Service Corp., P. O. Box 1590, Tulsa, Okla.—I
 Southwest Products, Inc., Alamo Downs, Box 85-D, San Antonio 4, Tex.—M
 Special Instruments Lab., 312 W. Vine St., Knoxville, Tenn.—I.M.P
 Sperry Products, Shelter Rock Rd., Danbury, Conn.—AC
 Standard Electronic Research Corp., 2 East End Ave., New York 21, N.Y.—O
 Sta-Warm Electric Co., 553 N. Chestnut St., Ravenna, Ohio—D
 Steiner-Ives Co., 483 Springfield Rd., Union, N.J.—D.E.I.

Technic, Inc., 39 Snow St., Providence 3, R.I.

Technical Operations Inc., 6 Schouler Court, Arlington 74, Mass.—P.V

Technical Products Co., P.O. Box 93, Memphis 1, Tenn.—E.I.P.R.S.Z.A.C

Technicraft Co., 1156 Commonwealth Ave., Boston 34, Mass.—J.L

Telephonics Corp., Park Ave., Huntington, N.Y.—I

Television Corp., 1415 W. Golf Rd., Des Plaines Ill.—AD

Tensitron, Inc., Pin Hill, Harvard, Mass.—S

TEXAS INSTRUMENTS INC., 6000 Lemmon Ave., Dallas 9, Texas—I

Thermo Elec. Mfg. Co., 465 Huff, Dubuque, Iowa—E

Thompson Clock Co., H.O., 38 Federal St., Bristol, Conn.—J.L.Q.W

Torngren Co., C. W., 236 Pearl St., Somerville, Mass.—P

Tracerlab, Inc., 130 High St., Boston 10, Mass.—M.P

Triplet & Barton, P. O. Box 3128, Burbank, Calif.

Triumph Mfg. Co., 913 W. Van Buren, Chicago 7, Ill.—G

Ultrasonic Eng'g. Co., P.O. Box 46, Maywood, Ill.—AD

U.M.&F. Mfg. Corp., 10922 Van Owne St., N. Hollywood, Calif.—R.Z

Unitex Corp., 275 N. Halstead Ave., Pasadena 8, Calif.—AF

U. S. Radium Corp., 535 Pearl St., New York 7, N.Y.—W

U.S. Testing Co., 1415 Park Ave., Hoboken, N.J.—A.D.K

Valpey Crystal Corp., 1244 Highland St., Holliston, Mass.—AD

Vibro-Ceramics Corp., Metuchen, N.J.—AC, AD

VICTOREEN INSTRUMENT CO., 3800 Perkins Ave., Cleveland 14, Ohio—M.P.T

Videon Electronic Corp., 902 N. Michigan St., Indianapolis 2, Ind. AB

Vinson Co., E. R., 1401 Middle Harbor Rd., Oakland 20, Calif.—M

Vulcan Electric Co., 88 Holten St., Danvers, Mass.—J

Wang Labs., 296 Columbus Ave., Boston 16, Mass.—P

Washington Institute of Technology, 4810 Calvert Rd., College Park, Md.—X

Welsh Electric Co., 1221 Wade St., Cincinnati 14, Ohio—G.K.Q.AC.AD

Weltronic Co., 19500 W. 8 Mile Rd., Detroit 19, Mich.—D.K

Western Radiation Lab., 1107 W. 24 St., Los Angeles 7, Calif.—M.P.W.AA

WESTINGHOUSE ELECTRIC CORP., 2519 Wilkens Ave., Baltimore 3, Md.—D.K.V.W

Westinghouse Electric Corp., Box 868, Pittsburgh 30, Pa.—D.K.V.Y.AB

Wiegand Co., Edwin L., 7500 Thomas Blvd., Pittsburgh 8, Pa.—J.L

Wilcox Research Co., 11122 Aqua Vista St., N. Hollywood, Calif.—G

Williams, Brown & Earle, 504-06 Chestnut St., Philadelphia 7, Pa.—R.S.X

Woodwelding, Inc., 8000 W. Olive Ave., Burbank, Calif.—D.K

35—INSULATION MATERIALS & COMPOUNDS

Aluminum oxide	S
Alundum grain	A
Asbestos	B
Asphalt	C
Capacitor dielectrics	D
Coil tape	E
Dielectrics	T
Enamel	U
Fabric	F
Fiber	G
Fiber glass	H
Friction tape	I
Glass	V
Glass bonded mica	AB
Impregnating compounds	W
Laminated plastics	X
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Mica	Y
Mica compounds	Z
Paper	L
Phenolics	AA
Plastics	M
Rubber	N
Silicon	O
Steatite	P
Synthetic resin	Q
Teflon	AA
Varnished fabric	R
Vulcanized fiber	AB

Abbott Plastics & Machine Corp., 6322 N. Clark St., Chicago 26, Ill.—M

Ace Plastic Co., 91-30 Van Wyck Expressway, Jamaica 35, N.Y.—M

Acme Folding Box Co., 149 E. 25th St., New York 10, N.Y.—K.L



Aerolite Electronics, 507 26th St., Union City, N.J.—X

AEROVOX CORP., 740 Belleville Ave., New Bedford, Mass.—D.W

Akron Rubber Co., 53 Warren St., New York 7, N.Y.—G.H.M.N.O

Allied Asphalt & Mineral Corp., 217 Broadway, N.Y., N.Y.—C.M

Allied Engraving & Stamping Co., 161 Elliott St., Buffalo 3, N.Y.—M.X

AMERICAN LAVA CORP., Cherokee Blvd. & Mfrs. Rd., Chattanooga 5, Tenn.—D.P

American Mica Insulation Co., Manassquan, N.J.—D.G.H.L.M.X.Y.Z

AMERICAN PHENOLIC CORP., 1830 S. 54th Ave., Chicago 50, Ill.—M

American Products Mfg. Co., 8127 Oleander St., New Orleans 18, La.—M.U

American Wood Working Co., 1688 N. Lowell Ave., Chicago 39, Ill.—H

Asheville-Schoonmaker Mica Co., 900 Jefferson Ave., Newport News, Va.—Y

Auburn Buton Works, 48 Canoga St., Auburn, N.Y.—M

Auburn Mfg. Co., Stack St., Middletown, Conn.—B.G.N.O.X

Baer Co., N.S., 1 Montgomery St., Hillside 5, N.J.—G.H.M.X

Bakelite Co., Div. Union Carbide & Carbon Corp., 30 E. 42nd St., New York 17, N.Y.—M.Q

Barrett Div., Allied Chemical & Dye Corp., 2112 Sylvan Ave., Toledo 6, Ohio—M.Q

Biggs Co., Carl H., 2255 Barry Ave., Los Angeles 64, Calif.—H.M.Q.W.X

Birnback Radio Co., 145 Hudson St., New York 13, N.Y.—P

Bishop Mfg. Corp., 10 Canfield Rd., Cedar Grove, N.J.—K.M.N.O

Biwax Corp., 3445 Howard St., Skokie, Ill.—C.W

Blacher, B., 752 Broadway, New York 3, N.Y.—Mfg., 6021 Dempster St., Morton Grove, Ill.—M.X

Borthig Co., George C., P. O. Box 115 E. Rutherford, N.J.—C

Boruski Jr., Ernest F., 162 W. 54 St., New York 19, N.Y.—M.Q

Bram Chemical Co., 820 65 Ave., Philadelphia 26, Pa.—O.W

BRAND & CO., WM., North & Valley Sts., Willimantic, Conn.—M.R.Y

Brooklyn Paint & Varnish Co., 50 Jay St., Brooklyn 1, N.Y.—U

Cast Optics Corp., 1010 Post Rd., Riverside, Conn.—M

Catalin Corp. of America, 1 Park Ave., New York 16, N.Y.—M.Q

Celanese Corp. of America, 180 Madison Ave., New York 16, N.Y.—M

CENTRALAB, DIV., GLOBE-UNION INC., 900 E. Keefe Ave., Milwaukee 1, Wis.—D.P

Chester-Morton Electronics Corp., 10 St. & Morton Ave., Chester, Pa.—N

CITATION PRODUCTS CO., 233 E. 146 St., New York 51, N.Y.—G.M

Collectron Corp., 216 E. 45th St., New York 17, N.Y.—M

Conn. Hard Rubber Co., 407 East St., New Haven 9, Conn.—F.AA

Continental-Diamond Fibre Co., Newark, Del. F.G.H.M.O.X.Y

Continental Textile & Supply, 4245 W. Armitage Ave., Chicago 39, Ill.—F.M.N.R

Cook Ceramic Mfg. Co., 505 Prospect St., Trenton 1, N.J.—P

CORNING GLASS WORKS, Corning, N.Y.—V

Cortland Industries, 4545 W. Cortland St., Chicago 39, Ill.—L.M.X

Crane Packing Co., 1800 Cuyler Ave., Chicago 13, Ill.—M.AA

Creative Plastics Corp., Rt. 25-A, Stony Brook, N.Y.—M

Crowley & Co., Henry L., 1 Central Ave., W. Orange, N.J.—P

Decatur Electronic Industries Corp., 1620 Decatur St., Brooklyn 27, N.Y.—N

Delaware Optical Labs., 36 Williams St., Lansdowne, Pa.—A.N

Dialtric Materials Co., 5315 N. Ravenswood Ave., Chicago 40, Ill.—H.M.O.Q.R

Dilect Inc., P.O. Box 827, Perth Amboy, N.J.—M

Dilectrix Corp., 211-48 Jamaica Ave., Queens Village 28, N.Y.—D.AA

Dobackman Co., Box 6417, Cleveland 1, Ohio—L.M.X

Dolph Co., John C., Monmouth Junction, N.J.—C.M.Q.W

Dow Chemical Co., Midland, Mich.—M

Dow Corning Corp., P.O. Box 592, Midland, Mich.—O

Du-Co Ceramics Co., Box 587, Butler, Pa.—C.D.P

DuPont de Nemours & Co., E.L., 10th & Market Sts., Wilmington, Del.—U

Durable Rubber Products Co., 549 W. Fulton St., Chicago 6, Ill.—N

Durex Plastics & Chemicals, 1926 Walck Rd., N. Tonawanda, N.Y.—M.Q

Dynakon Corp., 9623 Clinton, Cleveland, Ohio—H.M

Electrofilm Inc., 7116 Laurel Canyon Blvd., N. Hollywood, Calif.—O.P.Q.W.X.Y.Z

Electronic Mechanics, Inc., 101 Clifton Blvd., Clifton, N.J.—D.E.M.AB

Electro-Tech Equip. Co., 308 Canal St., New York, N.Y.—B.G.H.O.R.Y

Electro Technical Products, Div. Sun Chemical Corp., 113 E. Centre St., Nutley 10, N.J.—B.E.F.H.J.K.L.O.R

Emeloid Co., 1239 Central, Hillside, N.J.—M

EMERSON & CUMING, 869 Washington St., Canton, Mass.—H.M.Q.W.X

Essex Wire Corp., 1601 Wall St., Fort Wayne 6, Ind.—I

Farnam Mfg. Co., P.O. Box 5098, Asheville, N.C.—Y

Flexrock Co., 3609 Filbert St., Philadelphia 1, Pa.—C.W

FORMICA CO., 4644 Spring Grove Ave., Cincinnati 32, Ohio—X

Franklin Fibre-Lamitex Corp., Wilmington 99, Dela.—G.L.M.X

Franchtown Porcelain Co., 8th and Harrison Sts., Franchtown, N.J.—P.S

Garlock Packing Co., Main St., Palmyra, N.Y.—M.N.O.X

General Cement Mfg. Co., 919 Taylor Ave., Rockford, Ill.—F.G.I.R.U

GENERAL ELECTRIC CO., CHEMICAL DIV., 1 Plastics Ave., Pittsfield, Mass.—H, O.Q.R.W.X.Y.Z

Glass Fibers Inc., 1810 Madison Ave., Toledo 2, Ohio—H

Glastic Corp., 1823 E. 40th St., Cleveland 3, Ohio—H.X

Gilenco Corp., Durham Ave., Metuchen, N.J.—D

Goodrich Chemical Co., B.F., 324 Rose Bldg., Cleveland 15, Ohio—M.N

Gulton Mfg. Corp., 212 Durham Ave., Metuchen, N.J.—D

Hartford City Paper Co., S. Spring St., Hartford City, Ind.—L

HEMINWAY & BARTLETT MFG. CO., 500 5 Ave., New York 36, N.Y.—E

Hermetite Corp., 702 Beacon St., Boston 16, Mass.—V

Horn Co., A. G., 10-10 44th Ave., Long Island City, 1, N.Y.—U

Houghton Labs., Inc., 322 Bush St., Olean, N.Y.—D.E.M.Q.W.X

Hydro Molding Co., 100 Sharron Ave., Plattsburg, N.Y.—M

Ideal Industries, 3316 Park Ave., Sycamore, Ill.—I

Induction Heating Corp., 181 Wythe Ave., Brooklyn 11, N.Y.—M

Industrial Mica Corp., 233 S. Van Brunt St., Englewood, N.J.—Y.Z

Industrial Tape Corp., New Brunswick, N.J.—I

Insul-X Co., Water St. & Broadway, Ossining, N.Y.—M.N.Q.U.W

Insulating Fabricators of New England, 60 Grove St., Watertown 72, Mass.—G.H.M.O.X

Insulating Tube Co., 26 Cottage St., Poughkeepsie, N.Y.—M

Insulation Mfrs. Corp., 565 W. Washington Blvd., Chicago 6, Ill.—F.G.L.M.R.X.Y

Irvington Varnish & Insulator, 6 Argyle Terr., Irvington 11, N.J.—B.F.K.L.M.N.O.Q.R.U.V.W.X

Isolantite Mfg. Co., Warren Ave., Stirling, N.J.—P.S

Jack Scientific Instrument Co., Bill, Box C-4, Solana Beach, Calif.—X

Javex, Box 646, Redlands, Calif.—W

Johns-Manville, Box 60, New York, N.Y.—H, C.I.L.V

JOHNSON CO., E. F., Waseca, Minn.—P

Kaywoff Products Co., Overton, Nebr.—M.Q

Kearfott Co., 1378 Main Ave., Clifton, N.J.—P

Kearsbey & Mattison Co., Ambler, Pa.—B

Keller Products, Inc., 41 Union St., Manchester, N.H.—X

Kellogg Co., M. W., P.O. Box 469, Jersey City 3, N.J.—M

Kirchberger & Co., M., 1428 37 St., Brooklyn 18, N.Y.—M.P

Laidman & Co., 1308 N. Halstead St., Chicago 22, Ill.—B.G.L.N

Iapp Insulator Co., 27 Gilbert St., LeRoy, N.Y.—P

Linde Air Products Co., Div. Union Carbide & Carbon Co., 30 E. 42 St., New York 17, N.Y.—D.O.Q.S.W

Lang Inc., Thomas J., 215 Stonehinge Lane, Carle Place, N.Y.—G.H.M.X

Louthan Mfg. Co., P. O. Box 86, E. Liverpool, Ohio—P

Mackay Inc., A.D., 198 Broadway, New York 38, N.Y.—O

MALLORY & CO., P. R., 3029 E. Washington St., Indianapolis 6, Ind.—D.M

Manning Paper Co., John A., P. O. Box 32, Troy, N.Y.—L

Mansol Ceramics Co., 140 Little St., Bellville 9, N.J.—M.P.V

Mayfair Molded Products Corp., 4440 Elston Ave., Chicago 30, Ill.—M.N

MELPAR INC., 452 Swann Ave., Alexandria, Va.—W

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Mica Coated Products Co., 426 Essex St., Salem, Mass.—F.Y
Mica Fabricating Co., 53 Central Ave., Rochelle Park, N.J.—Y
Mica Insulator Co., P.O. Box 1076, Schenectady 1, N.Y.—B,D,E,F,H,L,M,N,O,R,V,X,Y,Z
Midland Paint & Varnish Co., 3801 E. 91st St., Cleveland 5, Ohio—U
Minn. Rubber & Gasket Co., 3630 Wooddale Ave., Minneapolis 16, Minn.—N,O
Mitchell Rand Insulation Co., 51 Murray St., New York 7, N.Y.—B,C,F,G,H,I,L,M,Q,R,U,W,Y,Z
Molded Insulation Co., 335 E. Price St., Philadelphia 44, Pa.—H,M
Molding Specialists, Inc., 289 Nepperhan Ave., Yonkers, N.Y.—M
Moore Co., Howard Jr., 266 William St., New York, N.Y.—F,G,I,K,L,M,N,O,R,X,Y
Mosinee Paper Mills, Mosinee, Wisc.—H,L
MYCALEX CORP. OF AMERICA, 125 Clifton Blvd., Clifton, N.J.—D,M,Y,Z,AB
Mykroy Inc., Wheeling & Hintz Rds., Wheeling, Ill.—M
NAER CORP., 11777 Santa Monica Blvd., W. Los Angeles 25, Calif.—M
National Gasket & Washer Mfg. Co., 124 E. 25, New York, N.Y.—B,G,I,L,M,N,O,R,W,X
National Radiator Co., Plastic Metals Div., 165 Bridge St., Johnstown, Pa.—O
NATIONAL VULCANIZED FIBRE CO., Maryland Ave. & Beech St., Wilmington 99, Del.—G,H
Navtar Corp., 211 Randolph Ave., Woodbridge, N.J.—B,F,H,I,L,O,R
New Products Co., 1069 E. 54th St., Indianapolis, Ind.—M
Norton Co., 1 New Bond St., Worcester 6, Mass.—A
Owens-Corning Fiberglass Corp., 16 E. 56 St., New York 22, N.Y.—H
Penn Fibre & Specialty Co., 2030 E. Westmoreland St., Philadelphia 34, Pa.—G,L,M
Pennsylvania Optical Co., 234 S. 8th St., Reading, Pa.—V
Perceley Yarn & Textile Co., 180 Weeden St., Pawtucket, R.I.—H
Phoenix Precision Instr. Co., 3803 N. 5th St., Philadelphia 40, Pa.—V
Plasticraft Products Co., 1 Station Plaza, West Nyack, N.Y.—M,O
Plastilight, 481 Canal, Stamford, Conn.—X
Polyken Products, Dept. Kendall Co., 222 W. Adams St., Chicago 6, Ill.—E,H
Polymer Corp., of Pa., 126 N. 5 St., Reading, Pa.—M,A,A
Precision Plastic Products, 225 N. Racine Ave., Chicago 7, Ill.—M,X
Resinite Corp., 20351 W. Charleston St., Chicago 47, Ill.—Q
Resistoflex Corp., 39 Plansoen St., Belleville 9, N.J.—M,A,A
Rex Corp., Hayward Rd., W. Acton, Mass.—M
Reynolds Metals Co., 2500 S. 3rd St., Louisville 1, Ky.—S
Richards Co., Arklay S., 35 Winchester St., Newton Highlands 61, Mass.—P
Richardson Co., Melrose Park, Ill.—M
Rogan Bros., 8031 N. Monticello, Skokie, Ill.—M
Rogers Corp., Goodyear, Conn.—B,G,L,M,Q,X
Rollon Rubber Products, 1805 Jerome Ave., Bronx 53, N.Y.—N,O
ROMAR PLASTICS INC., 1311 E. Main St., St. Charles, Ill.—M
St. Regis Paper Co., 230 Park Ave., New York 17, N.Y.—X
Saxonburg Ceramics, Saxonburg, Pa.—A,D,P,S
Skydyne, Inc., River Rd., Port Jervis, N.Y.—H,X
Spaulding Fibre Co., 310 Wheeler St., Tonawanda, N.Y.—G,M
Spruce Pine Mica Co., P.O. Box 456, Spruce Pine, N.C.—Y
Star Porcelain Co., Muirhead Ave., Trenton 9, N.J.—P
Stevens Products, 86 Main St., E. Orange, N.J.—F,H,L,O,R
Steward Mfg. Co., D. M., P.O. Box 510 Chattanooga, Tenn.—D,P
Stokes Molded Products, Tavior & Webster Sts., Trenton, 4, N.J.—M,N
Stone City Machine & Tool Co., 1206 7th St., Bedford, Ind.—K
STUPAKOFF CERAMIC & MFG. CO., Latrobe, Pa.—D,P
Taylor Fibre Co., Norristown, Pa.—G,X
Technicraft Co., 1166 Commonwealth Ave., Boston 34, Mass.—H,M,Q
Tele-Beam Industries, 6th & Soscol Ave., Napa, Calif.—M
Thompson Co., H. I., 1733 Cordova St., Los Angeles 7, Calif.—H
Thor Ceramics, Inc., 225 Belleville Ave., Bloomfield, N.J.—P
U. S. Gasket Co., 602 N. 10 St., Camden 1, N.J.—M
U.S. Testing Co., 1415 Park Ave., Hoboken, N.J.—D,E,G,H,I,L,M,N,O,P,Q,R,V,W,X,Y,Z
Vacumet Inc., 1009 W. Weed St., Chicago 22, Ill.—M,X
Van Cleef Bros., 7800 S. Woodlawn Ave., Chicago 19, Ill.—E,I,N
VARFLEX CORP., 305 N. Jay St., Rome, N.Y.—F,H,M,O,Q,R
Vorac Co., Route 17th & Meadow Rd., Rutherford, N.J.—K,U

Warren Wire Co., Pownal, Vt.—H,A,A
Western Gold & Platinum Works, 589 Bryant St., San Francisco 7, Calif.—S
Westinghouse Electric Corp., Box 868, Pittsburgh 30, Pa.—G,R,W,X
Wilmington Fibre Specialty Co., P. O. Drawer 1028, Wilmington 99, Del.—G,L,M
Wright & Sons Co., Wm. E., South St., W. Warren, Mass.—E
Zophar Mills Inc., 112 26th St., Brooklyn 32, N.Y.—W,Z

36—INSULATORS

Insulators, antenna A
Insulators, bead B
Insulators, bearings Q
Insulators, ceramic C
Insulators, cord D
Insulators, fabricated R
Insulators, feed through S
Insulators, glass bonded mica E
Insulators, H.V. power line F
Insulators, laminated Y
Insulators, metallized bushing G
Insulators, mica H
Insulators, molded U
Insulators, plastic V
Insulators, rods W
Insulators, sheets X
Insulators, sleeve I
Insulators, standoff J
Insulators, test clip K
Insulators, thermocouple L
Insulators, tower M
Insulators, tubing, ceramic Y
Insulators, tubing, glass N
Insulators, tubing, paper O
Insulators, tubing, plastic Z
Insulators, tubing, varnish P

Abel Mfg. Co., 32-20 37th Ave., Long Island City 1, N.Y.—A,J,R
Accurate Electronics Corp., 1312 Ontario St., N.W., Cleveland 13, Ohio—R,S,T,U,V
Ace Plastic Co., 91-30 Van Wyck Expressway, Jamaica 35, N.Y.—J,R,V,W
ACCURATE PAPER TUBE CO., 805 N. Peoria St., Chicago 22, Ill.—O
Advanced Vacuum Products, 22 Liberty St., Stamford, Conn.—C,G,J
Aerolite Electronics Corp., 507 26 St., Union City, N.J.—C,G,J,K,U,V
Aeronautical Radio Mfg. Co., 155 1st St., Mineola, N.Y.—A,C,J,S
Air Associates Inc., 1231 Airway, Glendale 1, Calif.—A
Airtron Inc., 1103 W. Elizabeth Ave., Linden, N.J.—U
ALDEN PRODUCTS CO., 117 N. Main St., Brockton 64, Mass.—J,K,S,U,V
Allied Allegri Machine Co., 141 River Rd., Nutley 10, N.J.—O,P
Allied Engraving & Stamping Co., 161 Elliott St., Buffalo 3, N.Y.—T
Alpha Erection Corp., 508 Iowa State Bank Bldg., Iowa City, Iowa.—M
AMERICAN LAVA CORP., Cherokee Blvd. & Mfrs. Rd., Chattanooga 5, Tenn.—B,C,G,I,J,L,M,S,W,X,Y
American Mica Insulation Co., Manasquan, N.J.—H,I,R,T,U,V,W,X
AMERICAN PHENOLIC CORP., 1830 S. 54 Ave., Chicago 50, Ill.—A,R,V,X
American Radio Hardware Co., 152 MacQueston Parkway S., Mount Vernon, N.Y.—K
American Wood Working Co., 1682 N. Lowell Ave., Chicago 39, Ill.
Anchor Plastics Co., 36-36 36th St., Long Island City 6, N.Y.—I,V,W
Antenna Products, 3628 N. Lincoln Ave., Chicago 13, Ill.—J,V
Antenna Specialists Co., 12435 Euclid Ave., Cleveland 6, Ohio—A
Argyle Electronics Co., 8 W. 18 St., New York 11, N.Y.—A,J
Asheville-Schoonmaker Mica Co., 900 Jefferson Ave., Newport News, Va.—H
Auburn Button Works, 48 Canoga St., Auburn, N.Y.—W,X
Auburn Mfg. Co., Stack St., Middletown, Conn.—E,H,R,T,V,X
Baer Co., N.S., 1-11 Montgomery St., Hillside 5, N.J.—J,T,V,W,X,Z
Barlow Electrical Mfg. Co., 155 E. 123th St., New York 35, N.Y.—A
B & C Insulation Products, 490 Lincoln Hwy., Iaelin, N.J.—P
Bennett Products Mfg. Co., P.O. Box 1055, Palo Alto, Calif.—C,S
Bentley, Harris Mfg. Co., Hector & Lime Sts., Conshohocken, Pa.—P
Biggs Co., Carl H., 2255 Barry Ave., Los Angeles 64, Calif.—V
Bird & Co., Richard H., 1 Spruce St., Waltham 54, Mass.—Q
Birnbach Radio Co., 145 Hudson St., New York 13, N.Y.—A,C,D,J,K,S

Blazon Mfg., 6021 Dempster St., Morton Grove, Ill.—V
Bram Chemical Co., 820 65th Ave., Philadelphia 26, Pa.—L
BRAND & CO., W.M., North & Valley Sts., Willimantic, Conn.—H,I,P,V
British Electronic Sales, 23-03 45 Rd., Long Island City, N.Y.—V,W,X
HUD RADIO INC., 2118 E. 55th St., Cleveland 3, Ohio—S
Cambridge Thermionic Corp., 445 Concord Ave., Cambridge 38, Mass.—C,J,V
Cast Optics Corp., 1010 Post Rd., Riverside, Conn.—V,W,X
CENTRALAB, Div., Globe-Union Inc., 900 E. Keefe Ave., Milwaukee 1, Wisc.—A,B,C,F,G,I,J,L,M,Q,R,S,U,W,X
CITATION PRODUCTS CO., 233 E. 146 St., New York 51, N.Y.—J,R,S
CLEVELAND CONTAINER CO., 6201 Barberton Ave., Cleveland 2, Ohio—O,T
Collectron Corp., 216 E. 45th St., New York 17, N.Y.—U
Connector Corp., 6025 N. Keystone Ave., Chicago 30, Ill.—R,U
Consolidated Wire & Associated Companies, 1635 S. Clinton St., Chicago 16, Ill.—A
CONSTANTIN & CO., L. L., Route 46, Lodi, N.J.—J
Continental Diamond Fibre Co., Newark, Del.—H,O,T,V,W,X
Cook Ceramic Mfg. Co., 505 Prospect St., Trenton 1, N.J.—C
CORNING GLASS WORKS, P. O. Box 544, Corning, N.Y.—N
Cortland Industries, 4545 W. Cortland St., Chicago 39, Ill.—O,P,R,T,V,X
Crane Packing Co., 1800 Cuyler Ave., Chicago 13, Ill.—B,U,V,W,X
Creative Plastics Corp., Rt. 25-A, Stony Brook, N.Y.—R,S,U,V
Crowley & Co., Henry L., 1 Central Ave., W. Orange, N.J.—A,C
Delaware Optical Labs., 36 Williams St., Lansdowne, Pa.—C,E
Demuth Glass Works, P.O. Box 629, Parkersburg, W.Va.—N
Dialectic Materials Co., 5315 N. Ravenswood Ave., Chicago 40, Ill.—I,N,P
Dimco-Gray Co., 207 E. 6th St., Dayton 2, Ohio—V
Division Lead Co., 836 W. Kinzie St., Chicago 22, Ill.—Q
Dobekman Co., Box 6417, Cleveland 1, Ohio—T
Du-Co Ceramics Co., Box 587, Butler, Pa.—B,C,D,I,J,L,M
Dynacon, 9623 Clinton, Cleveland, Ohio—A
ERY INC., HUGH H., 4700 Stenton Ave., Philadelphia 44, Pa.—J,S,U
ELCO CORP., 190 W. Glenwood Ave., Philadelphia 19, Pa.—U
ELECTRICAL INDUSTRIES—Div. Ampex Electronic Corp., 44 Summer Ave., Newark 4, N.J.—J
Electrofilm Inc., 7116 Laurel Canyon Blvd., N. Hollywood, Calif.—C,H,L,V
Electronic Mechanics, Inc., 101 Clifton Blvd., Clifton, N.J.—C,E,I,V,W
EMERSON & CUMING, INC., 869 Washington St., Canton, Mass.—V
Farnam Mfg. Co., Inc., P.O. Box 5098, Asheville, N.C.—H
Flader, Inc., Fredric, 583 Division St., N. Tonawanda, N.Y.—A,U,V
Formica Co., 4614 Spring Grove Ave., Cincinnati 32, Ohio—R,T,U,W,X
Franklin Fibre-Lamitex Corp., Wilmington, Del.—V,W,X
Frenchtown Porcelain Co., 8th & Harrison Sts., Frenchtown, N.J.—C
Fretco Inc., 406 N. Craig St., Pittsburgh 13, Pa.—A
GARDE MFG. CO., 588 Eddy St., Providence 3, R.I.—J,S,U,V
GEE-LAR MFG. CO., 819 Elm St., Rockford, Ill.—A,J
General Cement Mfg. Co., 919 Taylor Ave., Rockford, Ill.—A,I,J,K,P,S,V,W,X
GENERAL CERAMICS & STEATITE CORP., Crows Mill Rd., Keasbey, N.J.—A,B,C,F,G,J,L,S
GENERAL ELECTRIC CO., Chemical Div., 1 Plastics Ave., Pittsfield, Mass.—E,H,T,U,V,W,X
General Products Corp., 107 Salem St., Union Springs, N.Y.—U
Glastic Corp., 1823 E. 40th St., Cleveland 3, Ohio—U,V,W,X
GRAYHILL, 561 Hillgrove Ave., Lagrange, Ill.—K
Gries Reproducer Corp., 5 Second St., New Rochelle, N.Y.—U,V
Heldor Mfg. Corp., 238 Lewis St., Paterson, N.J.—S
Hermetite Corp., 702 Beacon St., Boston 15, Mass.—C,J,S
Houghton Laboratories, 322 Bush St., Olean, N.Y.—T,V,W,X
Hydro Molding Co., 100 Sharron Ave., Plattsburg, N.Y.—U,V
I.E. Mfg. Co., 325 N. Hoyne Ave., Chicago 12, Ill.—A,J,M,S,V
Illinois Electric Porcelain Co., 510 N. Pearl St., Macomb, Ill.—A,C,I,J
Imperial Radar & Wire Corp., 820 E. 233rd St., New York 66, N.Y.—S
Induction Heating Corp., 181 Wythe Ave., Brooklyn 11, N.Y.—V

Industrial Devices, Edgewater, N.J.—J,K
 Industrial Mica Corp., 233 S. Van Brunt St., Englewood, N.J.—H
 Insul-X Co., Water St. & Broadway, Ossining, N.Y.—F
 Insulating Fabricators of New England, Inc., 69 Grove St., Watertown 72, Mass.—I,N,O, P,R,T,U,V,W,X
 Insulation Mfrs. Corp., 565 W. Washington Blvd., Chicago 6, Ill.—H,I,P,R,V,X
 Insuline Corp. of America, 186 Granite St., Manchester, N.H.—A,B,C,G,J,W,X
 Irvington Varnish & Insulator Co., 6 Argyle Terrace, Irvington 11, N.J.—I,N,O,P,T,V,X
 Isolantite Mfg. Corp., Warren Ave., Stirling, N.J.—A,B,C,G,I,J,L,R,S,U,W
 JAN Hardware Mfg. Co., 75 N. 11th St., Brooklyn 11, N.Y.—J
 J. F. D. Mfg. Co., 6101—16 Ave., Brooklyn 4, N.Y.—A,V
 JOHNSON CO., E. F., Waseca, Minn.—A,C, J,S
 Kaywoff Products Co., Overton, Nehr.—K
 Kearfott Co., 1378 Main Ave., Clifton, N.J.—E
 Keystone Electronics Corp., 423 Broome St., New York 12, N.Y.—K
 Kirchberger & Co., M., 1425—37 St., Brooklyn 18, N.Y.—B,C,L
 Laidman & Co., 1308 N. Halstead St., Chicago 22, Ill.—Q
 Lapp Insulator Co., Radio Specialties Div., 24 Sumner St., LeRoy, N.Y.—A,C,F,J,M,S
 Lehigh Structural Steel Co., 17 Battery Pl., New York 4, N.Y.—M
 Locke Dept., of General Electric Co., P.O. Box 57, Baltimore 3, Md.—A,F,G,J
 Long Inc., Thonius J., 215 Stonehenge Lane, Carle Place, Long Island, N.Y.—V
 Louthan Mfg. Co., P. O. Box 86, E. Liverpool, Ohio—C
 Mansel Ceramics Co., 140 Little St., Belleville, N.J.—C,N,U,V
 Marconi's Wireless Telegraph Co., 23 Beaver St., New York 4, N.Y.—A
 Mayfair Molded Products Corp., 4440 Elston Ave., Chicago 30, Ill.—U,V
 METHODE MFG. CORP., 2021 W. Churchill St., Chicago 47, Ill.—T,U,V
 Mica Coated Products Co., 426 Essex St., Salem, Mass.—E,X
 Mica Fabricating Co., 53 Central Ave., Rochelle Park, N.J.—C,E,H,T,U,V,X
 Mica Insulator Co., P.O. Box 1076, Schenectady 1, N.Y.—A,E,H,O,R,T,U,V,W,X
 Millen Mfg. Co., James, 150 Exchange St., Malden, Mass.—C,S,U,V
 Minerals & Insulation Co., 55 Central Ave., Rochelle Park, N.J.—H,I,U,V,W,X
 Miniature Precision Bearings, Inc., 101 Carpenter St., Keene, N.H.—Q
 Minn. Rubber & Gasket Co., 3630 Wooddale Ave., Minneapolis 16, Minn.—F,I,U
 Mitchell Rand Insulation Co., 51 Murray St., New York 7, N.Y.—D,E,H,P
 Mitronics, Inc., 232 13th Ave., Newark, N.J.—G
 Modern Wire Co., 39-30 Review Ave., Long Island City 1, N.Y.—C
 Molded Insulation Co., 335 E. Price St., Philadelphia 44, Pa.—U,V
 Molding Specialists, Inc., 289 Nepperhan Ave., Yonkers, N.Y.—U,V
 Moore Co., Howard J., 266 William St., New York, N.Y.—I,O,P,R,T,V
 Mosley Electronics, 8622 St. Charles Rock Rd., St. Louis 14, Mo.—A
 MUELLER ELECTRIC CO., 1583 E. 31 St., Cleveland 14, Ohio—J,K,U,V
 MYCALEX CORP. OF AMERICA, 125 Clifton Blvd., Clifton, N.J.—E,I,R,S,U,V,W,X
 Mykroy, Inc., Wheeling & Hintz Rds., Wheeling, Ill.—A,C,E,J
 NAFR Corp., 11777 Santa Monica Blvd., W. Los Angeles 25, Calif.—V
 NATIONAL CO., 61 Sherman St., Malden 48, Mass.—A,C,J,S
 National Electric Products Co., 338 14 St., Ambridge, Pa.—A,F
 National Electronic Mfg. Corp., 42-08 Vernon Blvd., Long Island City 1, N.Y.—A
 Natvar Corp., 211 Randolph Ave., Woodbridge, N.J.—I,P
 New Products Co., 1069 E. 54th St., Indianapolis, Ind.—R,U,V
 Nichols Products Co., 325 W. Main St., Mountstown, N.J.—R,V
 Paramount Paper Tube Corp., 614 S. Lafayette St., Ft. Wayne 2, Ind.—O,P
 Petroff, Peter A., 127 Water St., New York 5, N.Y.—A,B
 Philmore Mfg. Co., 113 University Pl., New York 3, N.Y.—A
 Polymer Corp. of Pa., 126 N. 5 St., Reading, Pa.—I,Q,R,S,V,W,X
 PRECISION PAPER TUBE CO., 2035 W. Charleston St., Chicago 47, Ill.—O,P,Z
 Precision Plastic Products, 225 N. Racine Ave., Chicago 7, Ill.—R,T,Z
 Premax Products Div., Chisholm-Ryder Co., Highland & College Aves., Niagara Falls, N.Y.—A
 "Q" Glass Co., 470 Broad St., Bloomfield, N.J.—N
 Q-Line Mfg. Corp., 1562 61st St., Brooklyn 19, N.Y.—A
 Radiart Corp., 3465 Vega Ave., Cleveland 13, Ohio—A,J
 Radio Merchandise Sales, 2016 Bronxdale Ave., New York 60, N.Y.—A,J,K

ELECTRONIC INDUSTRIES DIRECTORY

Resinite Corp., 20351 W. Charleston St., Chicago 47, Ill.—R
 Rex Corp., Hayward Rd., W. Acton, Mass.—Z
 Richards Co., Arklay St., 37 Winchester St., Newton Highlands 61, Mass.—I
 Rogers Corp., Goodyear, Conn.—A,R,T,V,X
 ROMAR PLASTICS, INC., 1311 E. Main St., St. Charles, Ill.—U,V
 Saxonburg Ceramics, Saxonburg, Pa.—C
 Schneider & Marquard, 199 S. Portland Ave., Brooklyn, N.Y.—H
 Sealtron Corp., 186 Union Ave., New Rochelle, N.Y.—I,J,K,S
 Sealtron Co., 9701 Reading Rd., Cincinnati 15, Ohio—B,C,G,J
 Smith, Inc., Herman H., 436-18 St., Brooklyn 15, N.Y.—J,K
 Solar Mfg. Corp., E. 46th & Seville, Los Angeles 58, Calif.—C,G
 Spaulding Fibre Co., 310 Wheeler St., Tonawanda, N.Y.—V,Z
 Spruce Pine Mica Co., P.O. Box 456, Spruce Pine, N.C.—H
 Star Porcelain Co., Muirhead Ave., Trenton 9, N.J.—B,C
 Stevens Products Inc., 86 Main St., East Orange, N.J.—R,T,U,V
 Steward Mfg. Co., D. M., P.O. Box 510, Chattanooga, Tenn.—C,M
 STONE PAPER TUBE CO., 900 Franklin St., N.E., Washington 17, D.C.—O
 Stratoseal Mfg. Co., 3039 W. Fullerton Ave., Chicago 47, Ill.—J,S
 STUPAKOFF CERAMIC & MFG. CO., Latrobe, Pa.—B,C,G,J,L,S
 Superex Electronics Corp., 23 Atherton St., Yonkers, N.Y.—J,S
 Surprenant Mfg. Co., 199 Washington St., Boston 8, Mass.—V
 Syncor Products Co., 26 Irving Court, Malden 48, Mass.—A,B,C,I,J
 SYNTHANE CORP., Oaks, Pa.—T,V,W,X
 Tech Laboratories Inc., Bergen & Edsall Hlnds., Palisades Park, N.J.—L
 Thomas & Sons Co., R., Lisbon, Ohio—A,C,F, G,J,L,S,W
 Thompson, Co., H.I., 1733 Cordova St., Los Angeles 7, Calif.—I
 THOR CERAMICS, INC., 225 Belleville Ave., Bloomfield, N.J.—A,B,C,G,I,J,M
 Torwico Electronics, 967 Frelinghuysen Ave., Newark 5, N.J.—S
 Trico Fuse Mfg. Co., 2948 N. 5th St., Milwaukee 12, Wis.—K
 Tricraft Products Co., 1535 N. Ashland Ave., Chicago 22, Ill.—A
 Tri-Dex Co., Box 1207, Lindsay, Calif.—R,T,V
 Trisch Co., John D., 1310 McKinney Ave., Houston, Texas.—A,M
 Ucinite Co., Div. United-Carr Fastener Corp., 459 Watertown St., Newtonville, Mass.—J
 U. S. ENGINEERING CO., 521 Commercial St., Glendale 3, Calif.—J,S
 U. S. Gasket Co., 602 N. 10 St., Camden 1, N.J.—J,S,V
 U. S. Tower Co., 219 Union Trust Bldg., Petersburg, Va.—M
 VARFLEX CORP., 508 W. Court St., Rome, N.Y.—D,I,N,P,Z
 Victor Insulators, Inc., Maple Ave., Victor, N.Y.—C
 Video Industries Co., 42 Palmer Pl., Port Chester, N.Y.—A,T
 Walsco Electronics Corp., 3225 Exposition Pl., Los Angeles 18, Calif.—P,S
 WARREN PLASTICS CORP., Warren, Pa.—U,V
 Warren Wire Co., Pownal, Vt.—X
 Western Coil & Electrical Co., 215 State St., Racine, Wis.—J
 Western Gold & Platinum Works, 589 Bryant St., San Francisco 7, Calif.—C
 Wheaton Co., T. C., Millville, N.J.—G,J,S
 Whitso, Inc., 9330 Byron St., Schiller Park, Ill.—J
 William & Co., Willimantic, Conn.—I
 WINCHARGER CORP., E. 7 at Division St., Sioux City 2, Iowa—M
 Wind Turbine Co., E. Market St. & Penn. R.R., West Chester, Pa.—C,J,M,R
 Winslow Co., 9 Liberty, Newark, N.J.—I

37—LIGHTING EQUIPMENT & ACCESSORIES

Accessories & supplies	A
Arc lights	B
Black lights	C
Consoles, control	D
Dial lights	E
Dimmers	F
Fluorescent lights	G
Fluorescent pigment	H
Gobos	I

Incandescent lights	J
Light Meters	L
Lighting preset panels	M
Photoelectric	N
Portable lighting kits	K
Power supplies	O
Signal lights	P
Spotlights	S
Stroboscope	C
Studio rigging	R
TV lighting	T

Acme Electronics, Inc., 300 N. Lake Ave., Pasadena 4, Calif.—F,O
 Adams Lighting Inc., 48 W. 27 St., New York 1, N.Y.—C,G,J
 Aerolite Electronics Corp., 507 26 St., Union City, N.J.—F
 Aerolux Light Corp., 653 Eleventh Ave., New York 36, N.Y.—A,C,K,P
 Air Associates, Teterboro, N.J.—P
 Airflyte Electronics Co., 21 Cottage St., Bayonne, N.J.—G
 A.J.F. Industries, 852 Monroe St., Brooklyn 21, N.Y.—G
 ALDEN PRODUCTS CO., 117 N. Main St., Brooklyn 64, Mass.—E
 Allied Int'l. Inc., 230 Park Ave., New York 17, N.Y.—D
 American Communications Corp., 306 Broadway, New York 7, N.Y.—C
 American Products Mfg. Co., 8127 Oleander St., New Orleans 18, La.—H
 American Radio Hardware Co., 152 Macqueston Pkwy S., Mt. Vernon, N.Y.—F,F
 AMERICAN TELEVISION & RADIO CO., 300 E. 4th St., St. Paul 1, Minn.—O
 ANDREW CORP., 363 E. 75 St., Chicago 19, Ill.—P
 Art Specialty Co., 3245 W. Lake St., Chicago 24, Ill.—G,J,K
 Auto-Test, Inc., 600 S. Michigan Ave., Chicago 5, Ill.—O
 Barton Electronics, 955 Asylum Ave., Hartford 5, Conn.—N
 Baughman Co., E. J., 350 S. Central, Los Angeles, Calif.—A,C,D,E,F,G,H,I,J,K,L,M,N,O
 Berkshire Laboratories, 586 Beaver Pond Rd., Lincoln, Mass.—Q
 Bodnar Industries, 19 Rail Road Ave., New Rochelle, N.Y.—L,M
 Bogue Electric Mfg. Co., 52 Iowa Ave., Paterson 3, N.J.—O
 Bram Chemical Co., 820 65th Ave., Philadelphia 26, Pa.—H
 British Electronic Sales Co., 23-03 45th Rd., Long Island City 1, N.Y.—G
 Burgess Battery Co., Freeport, Ill.—O
 Camera Equip. Co., 1600 Bldwy., New York 19, N.Y.—T
 Canadian Radium & Uranium Corp., 630 5th Ave., New York 20, N.Y.—H
 Capitol Stage Lighting Co., 527 W. 45 St., New York 36, N.Y.—A,B,F,G,J,K
 Century Lighting Inc., 521 W. 43rd St., New York 25, N.Y.—A,B,D,E,F,G,I,J,K,M,O,R
 Chadsey Corp., Box 1858, Hartford 1, Conn.
 Champion Lamp Works, 600 Broad St., Lynn, Mass.—C,J
 CITATION PRODUCTS CO., 233 E. 146 St., New York 51, N.Y.—E,F
 Compro Corp., 2251 W. St. Paul Ave., Chicago 47, Ill.—A,F,H,J
 Curry-Jamestown Mfg. Corp., 44 N. Center St., Corry, Pa.—D,M
 Cutler-Hammer, Inc., 436 N. 12th St., Milwaukee 1, Wis.—D,F
 Dillons Laboratories, Inc., 5066 Santa Monica Blvd., Los Angeles 29, Calif.—C
 Deitz Co., S. J., 38 River Edge Rd., River Edge, N.J.—N
 Delaware Optical Labs., 36 Williams St., Lansdowne, Pa.—A,B,C,E,H,L,N,P
 DeMent Laboratories, New Flidner Bldg., Portland 5, Ore.—C,H
 DIALIGHT CORP., 60 Stewart Ave., Brooklyn 37, N.Y.—E,F,J
 Dorn Equipment Corp., 85 Broad St., Boston 10, Mass.—E,G,P
 Dorothea Mechanisms, Inc., Gale, 81-0 Broadway, Elmhurst, L.I., N.Y.—F
 Drake Mfg. Co., 1713 W. Hubbard St., Chicago 22, Ill.—E,P
 Dressen-Barnes Corp., 250 N. Vinedo Ave., Pasadena 8, Calif.—O
 Drive-In-Theater Mfg. Co., 505 W. 9th Kansas City, Mo.—O
 DuMONT LABS. INC., ALLEN B., TV Transmitter Div., 1500 Main Ave., Clifton, N.J.—D,K,R
 Eagle Electric Mfg. Co., 23-10 Bridge Plaza, South Long Island City, N.Y.—A,G
 Eastern Precision Resistor Corp., 130-11 90th Ave., Richmond Hill 18, N.Y.—D,M
 ELECTRICAL TOWER SERVICE, 206 S. Washington St., Peoria 2, Ill.—N,P
 Electric Storage Battery Co., 42 S. 15 St., Phila. 2, Pa.—K
 Electro-Physics Co., 287 E. Broadway, New York 7, N.Y.—L
 Electronic Control Corp., 1573 E. Fore Ave., Detroit 7, Mich.—N
 Electronic Measurements Co., Lewis St., Maple Ave., Eatontown, N.J.—O,Q
 Electro-Tech Equipment Co., 308 Canal St., New York, N.Y.—F,L,N

Electro-Technics, Inc., 198 Albion Ave., Paterson, N.J.—G
 Radio Laboratories, 637 Stewart Ave., Garden City, N.Y.—D
 rison Mfg. Co., 5209 Euclid Ave., Cleveland 3, Ohio—K
 Resistor Corp., 644 W. 12th St., Erie, Pa.—F
FEDERAL TELEPHONE & RADIO CO., Div. I.T.&T., 100 Kingsland Rd., Clifton, N.J.—P
 & Co., Geo. W., Hempstead Turnpike & Lucille Ave., Franklin Square, Long Island, N.Y.—B,C
General Cement Mfg. Co., 919 Taylor Ave., Rockford, Ill.—A
GENERAL ELECTRIC CO., Construction Materials Div., 1285 Boston Ave., Bridgeport 2, Conn.—A
GENERAL ELECTRIC CO., Apparatus Div., 1 River Rd., Schenectady 5, N.Y.—L
GENERAL ELECTRIC CO., Nela Park, Cleveland 12, Ohio—C,H,J
GENERAL RADIO CO., 275 Mass. Ave., Cambridge 39, Mass.—F,L,Q
 Generator Corp., Manassas, Va.—O
 Glens Falls Laboratory, Inc., 284 Glen St., Glens Falls, N.Y.—C
GRAYBAR ELECTRIC CO., 420 Lexington Ave., New York 17, N.Y.—A
 Haft & Sons, 950 Kent Ave., Brooklyn 5, N.Y.
 Maledy Electronics Co., 57 William St., New York 5, N.Y.—N,P
 Harwood Mfg. Co., 466 W. Superior St., Chicago 10, Ill.—K,R
 Herzog Miniature Lamp Works, 12-23 Jackson Ave., Long Island City, N.Y.—J
 Hetherington, Inc., Sharon Hill, Pa.—E
 Hub Electric Co., 2255 W. Grand Ave., Chicago 12, Ill.—D,F,G,J,K,M
 Hudson Lamp Co., 528 Elm St., Arlington, N.J.—E,J,N
 Huffer Machine Works, Electronics Division, 2201 Carmelina Ave., Los Angeles 64, Calif.—F
 Hughey & Phillips, 3300 N. San Fernando Blvd., Burbank, Calif.—N
 Industrial Electrical Works, 1509 Chicago St., Omaha, Nebr.—K
 Industrial Electronics Co., Hanover, Mass.—N,O
 Industrial Rectifier Co., 161 Washington St., New York 6, N.Y.—O
 Inet, Inc., 8655 S. Main St., Los Angeles 3, Calif.—O
 Industries, 6110 Wilshire Blvd., Los Angeles 36, Calif.—N
 Jobbins Electronic Enterprises, 500 Hamilton Ave., Menlo Park, Calif.—O
JOHNSON CO., E. F., Waseca, Minn.—E
 Joy Mfg. Co., Electrical Connector Div., 1201 Macklind Ave., St. Louis 10, Mo.—K
 Kamlite Labs., 1819 W. Grand Ave., Chicago 22, Ill.—C,P,Q
 Kent Metal Mfg. Co., 490 Johnson Ave., Brooklyn 37, N.Y.—C,G,J
 Kepco Laboratories, 131-38 Sanford Ave., Flushing 55, N.Y.—O
 Kilgen Aircraft Div., Kilgen Organ Co., 4632 W. Florissant Ave., St. Louis, Mo.—D
 Kinetex Instrument Co., 902 Broadway, New York 10, N.Y.—E
 Kliegl Bros., 321 W. 50 St., New York 19, N.Y.—A,B,C,D,F,G,I,J,K,M
 Nulka Electric Mfg. Co., 633 S. Fulton Ave., Mount Vernon, N.Y.—A
 Lawter Chemicals, 3550 Touhy Ave., Chicago 45, Ill.—C,H
 Laser Mfg. Co., 60 Greene St., New York 12, N.Y.—E
 Lee Electric & Mfg. Co., 2806 Clearwater St., Los Angeles 39, Calif.—O
 Lumenite Electronic Co., 407 S. Dearborn St., Chicago 5, Ill.—N
 Luxor Lighting Products, Empire State Bldg., New York, N.Y.—D,G,J
 Maco Mfg. Co., 1401 Clinton St., Hoboken, N.J.—N
 Magnaflux Corp., 7300 W. Lawrence Ave., Chicago 31, Ill.—C
 Marco Industries Co., 207 S. Helena St., Anaheim, Calif.—E,P
 Marion Electrical Instrument Co., 400 Canal St., Manchester, N.H.—L
 Matchless Electric Co., 1700 Washington Blvd., Chicago 12, Ill.—E,J,P
 Maurer Inc., J. A., 37-01 31st St., Long Island City 1, N.Y.—A,B,I,Q
 Menlo Research Laboratory, P. O. Box 522, Menlo Park, Calif.—C
 Mexichemical Co., 1021 E. 55th St., Chicago 15, Ill.—A
 Meyer & Co., Hugo, 39 W. 60th St., New York 23, N.Y.—O
 Metro Balancing, Inc., 191 Herricks Rd., Garden City Park, N.Y.—N
 Meyer Electric Co., P. O. Box 1827, Jacksonville, Fla.—D,F,N,O,P
 Mitchell Mfg. Co., 2525 Claybourn Ave., Chicago 14, Ill.—G
 McRichardson Co., 937 N. Sycamore Ave., Hollywood 38, Calif.—A,B,I,J
 Molic Specialties Co., 1005-7 W. Washington St., Bloomington, Ill.—G
 Multi-Tron Laboratory, 4624 Washington Blvd., Chicago 44, Ill.—N
 National Carbon Co., 30 E. 42nd St., New York 17, N.Y.—E,J
 Natural Lighting Corp., 1124 E. Colo. Blvd., Glendale 5, Calif.—A,I,J,K,T

Neutronic Associates, 87-16 116th St., Richmond Hill, N.Y.—O
 Norco Mfg. Co., 392 Bleecker St., New York 14, N.Y.—C,G,H
 North Electric Mfg. Co., S. Market St., Galion, Ohio—D
 Oleson Co., Otto K., 1534 Cahuenga Blvd., Hollywood 28, Calif.—A,C,D,F,J,O,R
 Ohl Industries, Inc., Electrical Div., 275 Winchester Ave., New Haven, Conn.
 Opad-Green Co., 71 Warren St., New York 7, N.Y.—O
 Pacific Transducer Corp., 11921 W. Pico Blvd., Los Angeles 64, Calif.—C
 Patrick Brothers Inc., 1938 N. Springfield Ave., Chicago 47, Ill.—A,R
 Perkins Eng'g Corp., 345 Kansas St., El Segundo, Calif.—O
 Petroff, Peter A., 127 Water St., New York 5, N.Y.—N
 Philmore Mfg. Co., 113 University Pl., New York 3, N.Y.—E
 Phoenix Precision Instrument Co., 3803 N. Fifth St., Philadelphia 40, Pa.—C,L,N
 Photobell Co., 116 Nassau St., New York 38, N.Y.—N
 Photon Research Products, 421 N. Foothill Blvd., Pasadena 8, Calif.—L
 Pioneer Electronics Corp., 24 Saunders St., Salem, Mass.—A
 Pioneer Gen-E. Motor Corp., 5841 W. Dickens Ave., Chicago 39, Ill.—K
 Power Transformer Co., 532 Hulberry St., Newark 5, N.J.—A,F
 Precision Associates, 354 Cumberland St., Brooklyn 17, N.Y.—O
 Radio Research Laboratories, 172 Front St., St. Marietta, Ohio—A,C,G
 Ripley Co., 1 Factory St., Middletown, Conn.—N
 Rolab Studios, Walnut Tree Hill, Sandy Hook, Conn.—R
SAMPSON CHEMICAL & PIGMENT CORP., 2830 W. Lake St., Chicago 12, Ill.—G,H
 Sensitive Research Instrument Corp., 9 Elm Ave., Mt. Vernon, N.Y.—N
 Shannon Luminous Materials Co., 7356 Santa Monica Blvd., Hollywood 46, Calif.—C,H
SIGNALITE INC., 37-41 Neptune Hwy., Neptune, N.J.—G,P
 S.O.S. Cinema Supply, 602 W. 52 St., New York 19, N.Y.—A,B,D,E,I,J,L,N,R
 Stroblite Co., 35 W. 52 St., New York 19, N.Y.—C,H
 Strong Electric Corp., 87 City Park Ave., Toledo 2, Ohio—B,S
 Superior Electric Co., 83 Laurel St., Bristol, Conn.—F
 Switzer Bros., 4732 St. Clair Ave., Cleveland 3, Ohio—C,H
SYLVANIA ELECTRIC PRODUCTS, 1740 Broadway, New York 19, N.Y.—C,G,J,Q
 Tabet Mfg. Co., 1336 Ballentine Blvd., Norfolk, Va.—N
 Technical Products Co., 19 N. Dunlap, Medical Center, Memphis 1, Tenn.—C,L,N
 Television Specialty Co., 350 W. 31 St., New York 1, N.Y.—A,B,D,F,G,I,J,K,M,O,R
 Thompson Clock Co., H.C., 38 Federal St., Bristol, Conn.—A,E,F,G,J,K,N
 T.L.G. Electric Corp., 31 W. 27th St., New York 1, N.Y.—F
 Tracerlab, Inc., 130 High St., Boston 10, Mass.—H
 Trilch Co., John D., 1310 McKinney Ave., Houston, Texas—A,N
TUNG-SOL ELECTRIC INC., 95 Eighth Ave., Newark 4, N.J.—E,J
 Ucinite Co., Div. United-Carr Fastener Corp., 469 Watertown St., Newtonville, Mass.—E
 Ultra-Violet Products, 145 Pasadena Ave., S. Pasadena, Calif.—C,H
 Universal Match Corp., Armament Div., Box 191, Ferguson 21, Mo.—N
 U.S. Motors Corp., 420 Nebraska St., Oshkosh, Wisc.—O
 U.S. Radium Corp., 535 Pearl St., New York 7, N.Y.—H
 Verd-A-Roy Corp., 615 Front St., Toledo 5, Ohio—G,J
 Vickers Electric Div., Vickers, Inc., 1835 Locust St., St. Louis 3, Mo.—F,N
VICTOREN INSTRUMENT CO., 3800 Perkins Ave., Cleveland 12, Ohio—O
 Wade Electric Products Co., 2000 Jacobs St., Sturgis, Mich.—A
 Ward-Leonard Electric Co., 115 MacQueston Pkwy., Mt. Vernon, N.Y.—D,F
WARREN PLASTICS CORP., Warren, Pa.—G,J
WESTON ELECTRICAL INSTRUMENT CORP., 614 Frelinghuysen Ave., Newark 5, N.J.—N
 Wilcox Research Co., 1122 Aqua Vista St., N. Hollywood, Calif.—Q
 Williams, Brown & Earle, Inc., 904 Chestnut St., Philadelphia 7, Pa.—L,N
WINCHARGER CORP., E. 7 at Division St., Sioux City 2, Iowa—O
 Worner Electronic Devices, Rankin, Ill.—N

38—MACHINE EQUIPMENT & ACCESSORIES

Air cleaners A
 Blower units B
 Bobbins C
 Crystal lapping discs D

Crystal saw blades E
 Drive mechanisms F
 Dies G
 Electrodes, pressure welding H
 Jigs & fixtures I
 Magnifiers L
 Soldering pots J
 Vacuum tube aging racks K

Abbott Plastics & Machine Corp., 6322 N. Clark St., Chicago 26, Ill.—R
 Acme Electronics, Inc., 300 N. Lake Ave., Pasadena 4, Calif.—C
 Acromark Co., 601 Morrell St., Elizabeth 4, N.J.—G,I
 Aeroprojects, Inc., W. Chester, Pa.
 Air Associates, Teterboro, N.J.—F
 Airborne Electronics Co., Hangar #6, Metropolitan Airport, Van Nuys, Calif.—I
AIR-MARINE MOTORS, INC., 3939 Merrick Rd., Seaford, N.Y.—B
 Allied Intl. Inc., 230 Park Ave., New York 17, N.Y.—I
AMERICAN LAVA CORP., Cherokee Blvd. & Mfrs. Rd., Chattanooga 5, Tenn.—G
 American Wood Working Co., 1682 N. Lowell Ave., Chicago 39, Ill.—C
 Associated Production Co., 162 N. Clinton St., Chicago 6, Ill.—I
 Atlas Precision Products Co., 3801 Castor Ave., Philadelphia 24, Pa.—F
 Bausch & Lomb, 628 St. Paul St., Rochester, N.Y.—L
 Belock Instrument Corp., 111-01 14th Ave., College Point 56, N.Y.—F
 Bowmar Instrument, 2415 Pennsylvania St., Ft. Wayne 4, Ind.—F
 Buck Eng'g Co., 37-41 Marcy St., Freehold, N.J.—K
 Buhl Optical Co., 1009 Beech Ave., Pittsburgh 33, Pa.—L
 Centralab Div., Globe Union, Inc., 900 E. Keefe Ave., Milwaukee 1, Wis.—C
 Clements Mfg. Co., 6650 Narragansett Ave., Chicago 38, Ill.—B
 Communication Products Co., Marlboro, N.J.—A
 Curran Machine Works, 20-20 Steinway St., Long Island City, N.Y.—I
 Delaware Optical Labs., 56 Williams St., Lansdowne, Pa.—B,D,E,I
 DoAll Co., 254 N. Laurel, Des Plaines, Ill.—E
 Dynamic Air Eng'g. Inc., 7412 Maie Ave., Los Angeles 1, Calif.—B
 Eastern Air Devices Inc., 585 Dean St., Brooklyn 17, N.Y.—B
 Electro Craft Inc., 68 Jackson St., Stamford, Conn.—I
 Electronic Processes Corp., 1021 San Antonio Rd., Los Altos, Calif.—H
 Erwood, Inc., 1770 Berceau Ave., Chicago 13, Ill.—F,G,I
 Eutectic Welding Alloys Corp., 40-40 172 St., Flushing 58, N.Y.—H
 Franklin Fibre-Lamitex Corp., Wilmington 99, Del.—C
GENERAL ELECTRIC CO., Apparatus Div., 1 River Rd., Schenectady 5, N.Y.—B
 General Riveters Inc., Elmwood & Hertel, Buffalo 7, N.Y.—F
 Globe Industries, Inc., 1784 Stanley Ave., Dayton 4, Ohio—B
 Gray Instrument Co., 61 W. Johnson St., Philadelphia 44, Pa.—E
 Gries Reproducer Corp., 780 E. 133 St., New York 64, N.Y.—C
 Hartman Eng'g Co., 182 Oakland St., Springfield 8, Mass.—F
HOUSTON FEARLESS CORP., 11801 W. Olympic Blvd., Los Angeles 64, Calif.—B
 Ideal Industries, 3316 Park Ave., Sycamore, Ill.—B
 Independent Mfg. Co., 5 Bellevue Ave., East Riverton, N.J.—I
 Induction Motors Corp., 55-15 37 Ave., Woodside 77, N.Y.—B
 Int'l Pump & Machine Works, 11-13 Governor St., Newark 2, N.J.—K
KAHLE ENGINEERING CO., 1307 Seventh St., North Bergen, N.J.—J
 Kearfott Co., 1378 Main, Clifton, N.J.—F
 Keystone Electronics Corp., 423 Broome St., New York 12, N.Y.—I
 Larson Co., Chas. O., Sterling, Ill.—I
 Leiman Bros., 146 Christie St., Newark 5, N.Y.—H
 Lima Electric Motor Co., Findlay Rd., Lima, Ohio—F
 Link-Belt Co., 307 N. Michigan Ave., Chicago 1, Ill.—F
 Lufkin Rule Co., Saginaw, Mich.—I
 Mandex Mfg. Co., 2608 W. 16th St., Chicago 8, Ill.—G,I
 Mansol Ceramics Co., 140 Little St., Belleville 9, N.J.—G,I
 Mars Eng'g & Mfg. Co., 3000 N. San Fernando Blvd., Burbank, Calif.—I
 Master Appliance Mfg. Co., 4 & Ontario Sts., Racine, Wis.—B
 Meyer & Co., Hugo, 39 W. 60th St., New York 23, N.Y.—I
 Molded Products Corp., 4533 W. Harrison St., Chicago 24, Ill.—G
 Multi-Tron Lab., 4642 Washington Blvd., Chicago 44, Ill.—G,I,K
 Nichols Products Co., 325 W. Main St., Moorestown, N.J.—D

N.Y. Testing Labs., 47 West St., New York 6, N.Y.—I
 Oilpower Eng'g Co., 1067 Davis Terrace, Schenectady 3, N.Y.—G
 Pacific Transducer TT Corp., 11921 W. Pico Blvd., Los Angeles 64, Calif.—L
 Peerless Electric Co., 1401 W. Market St., Warren, Ohio—B
 Petroff, Peter A., 127 Water St., New York 5, N.Y.—F,G,I
 Phila. Scientific Glass Co., Abington, Pa.—H
 Pix Mfg. Co., 5 Oliver St., Newark 2, N.J.—G,I
 Precise Measurements Co., 942 Kings Hwy., Brooklyn 23, N.Y.—G
 Precision Products, 719 7 St., N.W., Washington, D.C.—D
 Production Tool & Fixture Co., 37 W. Main St., Oyster Bay, N.Y.—I
 Radex Corp., 2076 Elston Ave., Chicago 14, Ill.—A,B
 Reevesound Co., 35-54 36 St., Long Island City 1, N.Y.—F
 Research Instrument Co., 233 Broadway, New York 7, N.Y.—F,G,I
 Revco Inc., 2 E. Franklin Ave., Minneapolis 4, Minn.—F
 Ripley Co., 1 Factory St., Middletown, Conn.—B
 Robinette Co., W. C., 802 Fair Oaks Ave., S. Pasadena, Calif.—F
 Ryan Industries, 19159 John R St., Detroit 3, Mich.—I
 Scisaky Bros., 4915 W. 67th St., Chicago 38, Ill.—H
 Stanat Tool & Machine Co., 47-28 37 St., Long Island City, I, N.Y.—I
 Standard Electric Mfg. Co., Haddon Ave., W. Berlin, N.J.—B
 Sta-Warm Electric Co., 553 N. Chestnut St., Ravenna Ohio—J
 Stone City Machine & Tool Co., 1206 7th St., Bedford, Ind.—G,I
 Sunrise Products Co., P. O. Box 173, Hawthorne, N.J.—H,J
 Taylor Fibre Co., Norristown, Pa.—C
 Technical Products Co., P.O. Box 93, Memphis 1, Tenn.—L
 Toman & Co., E., 8700 W. 47th St., Lyons, Ill.—G,I
 Torit Mfg. Co., 292 Walnut St., St. Paul Minn.—B
 Tri-Kris Co., Inc., P.O. Box 631, Lansdale, Pa.—F,I
 Trion, Inc., 1000 Island Ave., McKees Rocks, Pa.—A
 U.M. & F. MFG. CORP., 10929 Van Owne St., N. Hollywood, Calif.—G,I
 Universal Mfg. Co., 410 Hillside Ave., Hillside, N.J.—G,I
 U.S. Testing Co., 1415 Park Ave., Hoboken, N.J.—I
 Vemaline Products Co., P.O. Box 222, Hawthorne, N.J.—J
 Waage Electric, Inc., 720 Colfax Ave., Kenilworth, N.J.—J
 Whistler & Sons, Inc., S. B., 752 Military Rd., Buffalo 23, N.Y.—O
 Williams, Brown & Earle, 904-06 Chestnut St., Philadelphia 7, Pa.—L

39—MEASUREMENT & TEST EQUIPMENT—BRIDGES

Bridges, capacitance	A
Bridges, impedance	B
Bridges, inductance	C
Bridges, resistance	D
Bridges, self balancing	F
Bridges, standing wave	G
Bridges, temperature	E
Bridges, thermistor	H
Bridges, wheatstone	I

Aero Electronics Co., 1512 N. Wells St., Chicago 10, Ill.—F
 AEROVOX CORP., 740 Belleville Ave., New Bedford, Mass.—A
 Airborne Instruments Laboratory, 160 Old Country Rd., Mineola, L.I., N.Y.—G
 Associated Research Inc., 3758 W. Belmont Ave., Chicago 18, Ill.—D
 Baldwin-Lima-Hamilton, Phila. 42, Pa.—D
 Barnes Devel. Co., 213 W. Baltimore Pike, Lansdowne, Pa.—A,C,D,F
 Beckman & Whitley, Inc., 985 San Carlos Ave., San Carlos, Calif.—E,H
 BENDIX AVIATION, CINCINNATI DIV., 203 W. 3 St., Cincinnati 2, Ohio—D
 Bone Eng'g Corp., 701 W. Broadway, Glendale 4, Calif.—G
 BOONTON RADIO CORP., Boonton, N.J.—H
 Borden Eng'g Co., 63 Clinton Ave., New Providence, N.J.—D,I
 Bristol Co., Waterbury 20, Conn.—A,B,C,D,E
 Brown Electro-Measurement Corp., 4635 S.E. Hawthorne Blvd., Portland 15, Ore.—A, B,C,D
 Budd-Stanley Co., 43-01 22nd St., Long Island City 1, N.Y.—G
 Cambridge Instrument Co., 3033 Grand Central Terminal, New York 17, N.Y.—A,D,I
 Central Radio Co., 275 Mass. Ave., Cambridge 39, Mass.—B



Central Scientific Co., 1700 Irving Park Rd., Chicago 13, Ill.—I
 Century Electronics, 14844 Oxnard St., Van Nuys, Calif.—H
 Century Geophysical Corp., 8:06 W. Washington Blvd., Los Angeles 13, Calif.—A,B,C,D,E
 CGS Laboratories, Inc., 391 Ludlow St., Stamford, Conn.—B
 Chicago Industrial Instrument Co., 536 W. Elm St., Chicago 10, Ill.—A,B,C,D,F
 Clegg Laboratories, Inc., 142 S. Livingston Ave., Livingston, N.J.—A,B,C,D,E,I
 CLIPPARD INSTRUMENT LAB., 7390 Colerain Rd., Cincinnati 24, Ohio—A,D
 Clough-Bregtle Co., 6014 Broadway, Chicago 40, Ill.—A,C,D
 Cornell-Dubilier Electric Corp., 333 Hamilton Blvd., S. Plainfield, N.J.—A
 Dice Co., J. W., 1 Engle St., Englewood, N.J.—D
 Dillon & Co., W. C., 14620 Keswick St., Van Nuys, Calif.—E
 Dubrow Devel. Co., 235 Penn St., Burlington, N.J.—A,B,D
 Eldico of N.Y., Inc., 70-72 E. Second St., Mineola, L.I., N.Y.—B
 Electrodyne Co., Norwood, Mass.—A,D
 Electrofilm Inc., 7116 Laurel Canyon Blvd., N. Hollywood, Calif.—D,E,I
 Electro-measurements, Inc., 4312 S. E. Stark St., Portland 15, Ore.—A,B,C,D
 Electro-Mechanical Research, Ridgefield, Conn.—F
 Electro-Mec Lab., 19 Murray St., New York 7, N.Y.—D
 Electronic Instrument Co., 84 Withers St., Brooklyn 11, N.Y.—A,D
 Electron Radar Products, 1041 N. Pulaski Rd., Chicago, Ill.—H
 Electro-Seal Corp., 946 North Ave., Des Plaines, Ill.—A
 Electro-Tech Equip. Co., 308 Canal St., New York, N.Y.—A,D,E,I
 Electro-Technics, Inc., 198 Albion Ave., Paterson, N.J.—B
 Elk Electronic Labs. Inc., 333 W. 52 St., New York 19, N.Y.—F,G
 Elm Labs., 18 S. Broadway, Dobbs Ferry, N.Y.—A,C
 El-Tronics, Inc., 437 N. 5th St., Philadelphia 23, Pa.—D
 Feiler Eng'g & Mfg., 8026 N. Monticello Ave., Skokie, Ill.—A,B,C,D
 Fielden Instrument Div., Robertshaw-Fulton Controls Co., 2920 N. 4th St., Philadelphia 33, Pa.—A,D,E,F,H,I
 FREED TRANSFORMER CO., 1718 Weirfield St., Brooklyn 27, N.Y.—A,B,C,D
 Gaskin Co., 1005 S. Aurora Way, Wheaton, Ill.—B
 GENERAL ELECTRIC CO., Apparatus Div., 1 River Rd., Schenectady 5, N.Y.—D
 GENERAL ELECTRIC CO., Broadcast Equip. & Commercial Equip. Div., Electronics Park, Syracuse, N.Y.—A
 GENERAL RADIO CO., 275 Mass. Ave., Cambridge 39, Mass.—A,B,C,D,I
 Goodyear Aircraft Corp., 1210 Massillon Rd., Akron 15, Ohio—A,D
 Gray Instrument Co., 64 W. Johnson St., Philadelphia 44, Pa.—D,E,I
 GULTON MFG. CO., 212 Durham Ave., Metuchen, N.J.—A
 Hazeltine Electronics Corp., 58-25 Little Neck Pkwy., Little Neck 62, N.Y.—F
 Heath Co., 305 Territorial, Benton Harbor, Mich.—A,B,C,D,I
 Hewlett-Packard Co., 395 Page Mill Rd., Palo Alto, Calif.—B,G,H
 HICKOK ELECTRICAL INSTRUMENT CO., 10514 Dupont Ave., Cleveland 8, Ohio—A,B, C,D
 HI Q DIV., AEROVOX CORP., Olean, N.Y.—A
 Illinois Testing Labs., 420 N. LaSalle St., Chicago 10, Ill.—E
 Industrial Electronic Engr's., 3973 Lankershim Blvd., N. Hollywood, Calif.—D
 Industrial Electronics, 8060 Wheeler St., Detroit 10, Mich.—I
 Industrial Instruments, 89 Commerce Rd., Cedar Grove, N.J.—A,B,C,D,I
 Industrial Test Equipment Co., 55 E. 11th St., New York 3, N.Y.—A,B,C,D,I
 Industrial Transformer, Gouldsboro, Pa.—C
 Kalbfell Labs., 1090 Morena Blvd., San Diego 10, Calif.—A,C
 Leeds & Northrup Co., 4970 Stenton Ave., Philadelphia 44, Pa.—A,B,C,D,E,I
 L & O Research & Devel Corp., 134 N. Wayne Ave., Wayne, Pa.—F
 MacLone & Hanopol, 10 Roland St., Charlestown 9, Mass.—A,D
 Magnetic Instrument Co., #2 Main St. W. Orange, N.J.—B,C,D,E
 Marconi Instruments, Ltd., 23 Beaver St., New York 4, N.Y.—A,B,C,D
 Mark Products Co., 3549 Montrose Ave., Chicago 18, Ill.—G

McShan Development Corp., 71 Murray St., New York 7, N.Y.—E,D
 MEASUREMENTS CORP., Boonton, N.J.—A, C,D
 Metropolitan Electronics & Instruments, 106 5 Ave., New York 11, N.Y.—A,D
 Microwave Associates, 22 Cummington St., Boston 15, Mass.—G
 Millen Mfg. Co., James, 150 Exchange St., Malden 48, Mass.—G
 Munston Mfg. & Service, Inc., Beech St., Islip, N.Y.—A,B
 National Capacitor Co., 585 Washington St., Quincy 69, Mass.—A
 Nichols Products Co., 325 W. Main St., Moorestown, N.J.—B,G
 Non-Linear Systems, Del Mar Airport, Del Mar, Calif.—D
 Olympic Development Co., Div., Olympic Radio & Television Corp., 30 Commerce Rd., Stamford, Conn.—H
 OMCO Test Equip., Box 196 N. Las Vegas, Nev.—D
 Penna. Testing Lab., Doylestown, Pa.
 PHAOSTRON CO., 151 Pasadena Ave., S. Pasadena, Calif.—D,I
 Phoenix Precision Instr. Co., 3803 N 5 St., Philadelphia 40, Pa.—F
 Phila. Scientific Glass Co., Abington, Pa.—E
 POLYTECHNIC RESEARCH & DEVELOPMENT CO., 202 Tillary St., Brooklyn 1, N.Y.—B,F,G
 Precise Measurements Co., 942 Kings Hwy., Brooklyn 23, N.Y.—D
 Radex Corp., 2076 Elston, Chicago 14, Ill.—B
 Radio City Products Co., 101 West 31 St., New York 1, N.Y.—A,D
 Reiner Electronics Co., 152 W. 25 St., New York 1, N.Y.—D
 Resdel Eng'g., 2351 Riverside Dr., Los Angeles 39, Calif.—A
 Richards Co., Arkley St., 35 Winchester St., Newton Highlands 61, Mass.—E
 Rubicon Co., Ridge Ave. at 35th St., Philadelphia 32, Pa.—D,E,I
 Sensitive Research Instrument Corp., 9 Elm Ave., Mt. Vernon, N.Y.—I
 SHALLCROSS MFG. CO., 620 Pusey Ave., Collingdale, Pa.—A,B,C,D,I
 Sierra Electronic Corp., 1050 Brittan Ave., San Carlos 2, Calif.—B,G
 Simpson Electric Co., 6208 W. Kinzie St., Chicago 44, Ill.—A,D,E
 Southwestern Industrial Electronics, 2831 Post Oak Rd., Houston, Texas—A,B,C,D
 Special Instruments Lab., Inc., 812 W. Vine St., Knoxville, Tenn.—D,I
 Sterling Instruments Co., 15310 W. McNichols, Detroit 35, Mich.—E
 Sticht Co., Herman H., 27 Park Pl., New York 7, N.Y.—D
 SYLVANIA ELECTRIC PRODUCTS, 1740 Broadway, New York 19, N.Y.—A
 Tech Laboratories Inc., Bergen & Edsall Blvd., Palisades Park, N.J.—A,D,F,I
 Technical Products Co., 19 N. Dunlap, Medical Center, Memphis 1, Tenn.—E
 TECHNOLOGY INSTRUMENT CORP., 533 Main St., Acton, Mass.—B
 Telecomputing Corp., 133 E. Santa Anita Ave., Burbank, Calif.—D,F
 Telescreen Corp., 36 Grove St., New Canaan, Conn.—E
 Thermo Elec. Mfg. Co., 465 Huff, Dubuque, Iowa.—E
 Thwing-Albert Instrument Co., Penn St. & Pulaski Ave., Philadelphia 44, Pa.—E
 Universal Microwave, 380 Hillside Ave., Hillside, N.J.—G
 U.S. Testing Co., 1415 Park Ave., Hoboken, N.J.—A,B,C,D,I
 Videon Electronic Corp., 902 E. Michigan St., Indianapolis 2, Ind.—D
 Waters Mfg. Inc., 4 Gordon St., Waltham 54, Mass.—C
 WELCH MFG. CO., W. M., 1515 Sedgwick St., Chicago 10, Ill.—A,D,I
 Weston Labs., Inc., Old Littleton Rd., Harvard, Mass.—H
 Winslow Co., 9 Liberty St., Newark 5, N.J.—D,E,I

40—MEASUREMENT & TEST EQUIPMENT—COUNTERS

Counters, electronic	A
Counters, events-per-unit time	B
Counters, frequency	C
Counters, geiger	D
Counters, impulse	E
Counters, mechanical	F
Counters, photoelectric	J
Counters, radiation	G
Counters, revolution	H
Counters, time-measuring	I

Advance Electronics Co., 451 Highland Ave. Passaic, N.J.—C
 Aero Electronics Co., 1512 N. Wells St., Chicago 10, Ill.—A,B,H,I,J
 Alina Corp., 401 Broadway, New York 1, N.Y.—I
 Allied Intl. Inc., 230 Park Ave., New York 17, N.Y.—C,D

American Electroengineering Corp., 2040 Colo-
 ave, Santa Monica, Calif.—A
 PEREX ELECTRONIC CORP., 230 Duffy
 Ave, Hicksville, L.I., N.Y.—G
 Atomic Instrument Co., 84 Mass. Ave., Cam-
 bridge 89, Mass.—A,B,C,D,E,G,H,I
 Amalab, Inc., 483 5 Ave., New York 17, N.Y.
 —B,D
 Audio Products Corp., 2265 Westwood Blvd.,
 Los Angeles 64, Calif.—A
 Aviatin Co., 76 9 Ave., New York 11, N.Y.—A,E
 Automatic Temperature Control Co., 5212
 Pulaski Ave., Philadelphia 44, Pa.—A,E,H
 Auto-Test Inc., 600 S. Michigan Ave., Chicago
 111.—H
 Avion Electronics, 955 Asylum Ave., Hartford
 Conn.—A,H,J
 Avion Electronics, J.A., 1031 S. 27 St.,
 Omaha, Nebr.—D,H
 Avonham Co., E.J., 350 S. Central, Los Angeles
 18, Calif.—A
 Avon Instruments Corp., 350 5th Ave., New
 York 1, N.Y.—B,F
 Berkeley Div., Beckman Instruments, Inc.,
 200 Wright Ave., Richmond 3, Calif.—A,
 B,C,D,G,H,I,J
 Beach Mfg. Co., Danbury, Conn.—A,F
 Bennell & Co., J. H., 81 Prospect Pl., Brook-
 lyn 1, N.Y.—J
 BIRROUGHS CORP., Electronics Instruments
 Div., 1209 Vine St., Philadelphia 7, Pa.—A
 Camera Mart, Inc., 1845 Broadway, New
 York 23, N.Y.—I
 Carlson & Nicholson, 497 Maynard Dr., Buf-
 falo 21, N.Y.—I
 Clark Crystal Co., 2 Farm Rd., Marlboro,
 Mass.—C
 Clary Multiplier Corp., San Gabriel, Calif.
 —A,B,C,E,F,I
 Clear Watch Agency, 521 G Ave., New York
 17, N.Y.—I
 Codeltype Laboratories, 550 5th Ave., New
 York 19, N.Y.—I
 Colortron Electronics, 238 William St., New
 York 38, N.Y.—C
 Component Manufacturers, 38-01 23 Ave.,
 Long Island City 5, N.Y.—H
 Computer Control Co., 106 Concord Ave.,
 Belmont 78, Mass.—B
 Control Devices Inc., 9918 Charlevoix Ave.,
 Detroit 14, Mich.—A
 Counter & Control Corp., 5225 W. Electric
 Ave., Milwaukee 14, Wis.—E,F,H
 Cosmer Co., R. W., Box 49, Centerbrook,
 Conn.—F,I
 Decade Instrument Co., Box 153, Caldwell, N.J.
 —A,C
 Deitz Co., S. J., 38 River Edge Rd., River
 Edge, N.J.—J
 Demco Products, P.O. Box 5042, Philadelphia
 11, Pa.—A,B,E,I
 Detectolab, Inc., 6544 Sheridan Rd., Chicago
 26, Ill.—D,G
 Detectron Co., 5631 Cabuenga Blvd., N. Holly-
 wood, Calif.—A,B,C,D,E,G
 DeWald Radio & TV Corp., 35-15 37th Ave.,
 Long Island City 1, N.Y.—A
 Digital Instrument Co., 212 Almeria Ave.,
 Coral Gables, Fla.—A,B,C,D,E,F,G,H,I
 Dimco-Gray Co., 207 E. 6 St., Dayton 2, Ohio—
 I
 Deelcam Corp., 56 Elmwood St., Newton 58,
 Mass.—I
 Dubrow Devel. Co., 235 Penn St., Burlington,
 N.J.—A,B,C,I
 Ducommun Co., M, 580 5 Ave., New York 36,
 N.Y.—I
 DUMONT LABS., INC., Allen B., TV Trans-
 mitter Dept., Mobile Comm. Dept., 1500
 Main St., Clifton, N.J.—C
 Durant Mfg. Co., 1950 N. Buffum St., Milwau-
 kee 1, Wis.—A,F,H,J
 Eale Signal Corp., 202 20 St., Moline, Ill.
 —E,F,H
 Eber Eng'g. Co., 1568 S. 1st St., Milwaukee
 Wis.—A,E,F
 ELECTRICAL & PHYSICAL INSTRUMENT
 CORP., 25 W. 43rd St., New York 36, N.Y.
 —A,E,I
 Electrofilm Inc., 7116 Laurel Canyon Blvd.,
 Hollywood, Calif.—G
 Electronic Control Corp., 1573 E. Forest Ave.,
 Detroit 7, Mich.—J
 Electronic Eng'g. Co., 180 S. Alvarado St.,
 Los Angeles 57, Calif.—A,B,C
 Electronic Products Co., 111 E. 3rd St., Mt.
 Vernon, N.Y.—G
 Electron Radar Products, 1041 N. Pulaski
 Rd., Chicago, Ill.—J
 Electro-Seal Corp., 946 North Ave., Des-
 Moines, Ill.—R,E,F,I
 Electro-Tech Equip. Co., 308 Canal St., New
 York, N.Y.—A,C,D,H,J
 Electro Vision Lab., 30-16 Crescent St., Long
 Island City 2, N.Y.—A
 Electronics, Inc., 5 & Noble Sts., Philadelphia
 3, Pa.—A,B,D,G
 Engineering Associates, 434 Paterson Rd.,
 Dayton 9, Ohio—G
 Eng. Research & Devel. Co., Addison, Ill.—B
 Eng. Mfg. Co., Box 344, Summit, Ill.—I
 Federal Mfg. & Eng'g. Corp., 211 Steuben
 St., Brooklyn 5, N.Y.—C
 Fisher Research Lab., 1961 University Ave.,
 Palo Alto, Calif.—D
 Flett Lab., 3711 Marshall Rd., Drexel Hill, Pa.
 —D
 Franklin Electronics Inc., 415 W. Pike St.,
 Philadelphia 40, Pa.—E
 GENERAL ELECTRIC CO., 1 River Rd.,
 Schenectady, N.Y.—G

GENERAL ELECTRIC CO., Germanium
 Products Div., Electronics Park, Syracuse,
 N.Y.—A,D,G
 G. & M. Equipment Co., 7315 Varna Ave.,
 N. Hollywood, Calif.—C
 Gorrell & Gorrell, Haworth, N.J.—B,F,I
 Greenleaf Mfg. Co., 7814 Maplewood Ind. Ct.,
 St. Louis 17, Mo.—A,D,H,I,J
 Haledy Electronics, 67 William St., New York
 5, N.Y.—A,J
 Haydon Co., A. W., 232 N. Elm St., Water-
 bury, Conn.—I
 Haydon Mfg. Co., 245 E. Elm St., Torrington,
 Conn.—I
 Hazeltine Electronics Corp., 58-25 Little
 Neck Pkwy., Little Neck 62, N.Y.—A,H
 Hewlett-Packard Co., 385 Page Mill Rd., Palo
 Alto, Calif.—A,B,C,E,H,I,J
 Hubbell Inc., Harvey, State St. & Bostwick
 Ave., Bridgeport, Conn.—A
 Industrial Electronics, Hanover, Mass.—J
 Int'l. Research Assoc., 2221 Warwick Ave.,
 Santa Monica, Calif.—D
 Inq Industries, 6110 Wilshire Blvd., Los Angeles
 35, Calif.—A,B
 J-B-T INSTRUMENTS, 441 Chapel St., New
 Haven, Conn.—I
 Kaiser Metal Products, Inc., Bristol, Pa.—
 A,E,I
 Kearfott Co., 1378 Main Ave., Clifton, N.J.
 —F,H
 Kellogg Switchboard & Supply Co., 79 W.
 Monroe St., Chicago 3, Ill.—E
 Laboratory for Electronics, Inc., 75 Pitts
 St., Boston 14, Mass.—A
 Laboratory Equipment Corp., Hilltop Rd.,
 St. Joseph, Mich.—A
 Landis & Gyr, 45 W. 45th St., New York
 35, N.Y.—E
 Macdonald Co., W. S., 33 University Rd., Cam-
 bridge 38, Mass.—G
 MacKenzie Products, 141 Brewery St., New
 Haven, Conn.—I
 Magnex Corp., 90-28 Van Wyck Expressway,
 Jamaica 18, N.Y.—A,G
 MANUFACTURERS' ENG'G. & EQUIP.
 CORP., York & Mill Rds., Hatboro, Pa.—B
 Marconi Instruments Ltd., 25 Beaver St., New
 York 4, N.Y.—A
 Marion Electrical Instrument Co., Manches-
 ter, N.H.—I
 Menk Research Lab., P. O. Box 522, Menlo
 Park, Calif.—D,G
 Metron Instrument Co., 432 Lincoln St., Den-
 ver 3, Colo.—H
 Metrotype Corp., 6100 Archer Rd., Summit,
 Ill.—F
 Meyer & Co., Hugo, 39 W. 60th St., New
 York 23, N.Y.—A
 Multi-Tron Lab., 4624 W. Washington Blvd.,
 Chicago 44, Ill.—J
 National Electrical Machine Shops, 919 Jesup
 Blair Dr., Silver Springs, Md.—D,G
 National Radiac Inc., 10 Crawford St., New-
 ark 2, N.J.—G
 Nichols Products Co., 325 W. Main St.,
 Moorestown, N.J.—F
 North American Phillips Co., Mount Vernon,
 N.Y.—A
 Nuclear Development Lab., P.O. Box 7034,
 Kansas City, Mo.—D
 Nuclear Instrument & Chemical Corp., 223 W.
 Erie St., Chicago 10, Ill.—A,D,G
 Nuclear Measurements, 2460 N. Arlington Ave.,
 Indianapolis 18, Ind.—A,B,D,G
 Nuclear Research Corp., 2563 Grays Ferry
 Ave., Philadelphia 46, Pa.—D,G
 Nuclear Research & Devel. Co., 6425 Etzel
 Ave., St. Louis 14, Mo.—A,G
 Nucleonic Co. of America, 497 Union St.,
 Brooklyn 31, N.Y.—A,D
 Ohmart Corp., 2236 Hogen St., Cincinnati
 14, Ohio—G
 Pantek Co., Box 212, El Segundo, Calif.—A,
 B,H,I,J
 Peters Co., O. S., 1353 N.Y. Ave., N.E., Wash-
 ington 2, D.C.—A,C
 Petroff, Peter A., 127 Water St., New York
 5, N.Y.—J
 Phila. Scientific Glass Co., Abington, Pa.—F
 Phoenix Precision Instrument Co., 3803 N. 5
 St., Philadelphia 40, Pa.—J
 Photobell Co., 116 Nassau St., New York 38,
 N.Y.—J
 Photon Research Products, 421 N. Foothill
 Blvd., Pasadena 8, Calif.—E,F,H
 Potter Instrument Co., 115 Cutter Mill Rd.,
 Great Neck, L.I., N.Y.—A,B,C,E,G,H,I,J
 Precision Radiation Instruments, 2235 S. I.a
 Brea St., Los Angeles 16, Calif.—D,G
 Process & Instruments, 15 Stone Ave.,
 Brooklyn 33, N.Y.—J
 Radiation Counter Labs., Inc., 5122 W. Grove
 St., Skokie, Ill.—D,G
 Radioactive Products, Inc., 443 W. Congress
 St., Detroit 26, Mich.—D,G
 R. C. Scientific Instrument Co., 307 Culver
 Blvd., Playa Del Rey, Calif.—D,G
 Research Electronics Labs., Roslyn, Pa.—A,
 E,I
 Resdel Eng'g., 2351 Riverside Dr., New Ange-
 les 89, Calif.—A,C,D,E,G
 Robinette Co., W. C., 802 Fair Oaks Ave., S.
 Pasadena, Calif.—I
 Rockwell Eng'g. Co., 4063 N. N.J. St., Indi-
 anapolis 5, Ind.—I
 Rubicon Co., Ridge Ave. at 35th St., Philadel-
 phia 32, Pa.—J

Shoup Eng'g. Co., 221 E. Cullerton St., Chicago
 16, Ill.—G
 Specialty Assembly Co., 79 Clifton Place,
 Brooklyn 38, N.Y.—G
 Standard Electric Time Co., 119 Logan St.,
 Springfield, Mass.—A,B,C,H,I
 Standard Electronics Research Corp., 2 E.
 End Ave., New York 21, N.Y.—A
 Sterling Instruments Co., 15310 W. Mc-
 Nichols, Detroit 35, Mich.—A,B,H
 Stewart Instrument Co., 6507 Grand River,
 Detroit 8, Mich.—B,E,I
 Sticht Co., Herman H., 27 Park Pl., New York
 7, N.Y.—A,H,I
 Strueter-Amet Co., 4101 N. Ravenswood Ave.,
 Chicago 13, Ill.—A,B,D,E,F,G,H,I,J
 Technical Products Co., P.O. Box 93, Mem-
 phis 1, Tenn.—A,D,E,F,G,H,I,J
 Telecomputing Corp., 133 E. Santa Anita Ave.,
 Burbank, Calif.—A,H
 Telephonics Corp., Park Ave., Huntington,
 N.Y.—B
 Teleregister Corp., 157 Chambers St., New
 York 7, N.Y.—E
 Television Zoomar Corp., 500 5th Ave., New
 York 38, N.Y.—J
 TEXAS INSTRUMENTS INC., 6000 Lemmon
 Ave., Dallas 9, Texas—A
 Thompson Clock Co., H. C., 38 Federal St.,
 Bristol, Conn.—A,B,C,E,F,H,I
 Thwing-Albert Instrument Co., Penn St. &
 Pulaski Ave., Philadelphia 44, Pa.—G
 Tork Clock Co., 1 Grove St., Mount Vernon,
 N.Y.—I
 Tracerlab, Inc., 130 High St., Boston 10, Mass.
 —D,G
 Universal Match Corp., Armament Div., Box
 191, Ferguson 21, Mo.—J
 Veeder-Root, Inc., 70 Sargent St., Hartford 2,
 Conn.—F,H
 VICTOREEN INSTRUMENT CO., 3800 Per-
 kins Ave., Cleveland 14, Ohio—D,G
 Vinson Co., E. R., 1401 Middle Harbor Rd.,
 Oakland 20, Calif.—D,J
 Walkirt Co., 145 W. Hazel St., Inglewood 3,
 Calif.—A,B,C,E,H,I
 Wang Labs., 286 Columbus Ave., Boston 16,
 Mass.—A,E
 Welch Electric Co., 1221 Wade St., Cincin-
 nati 14, Ohio—J
 Western Radiation Lab., 1107 W. 24 St., Los
 Angeles 7, Calif.—D,G
 Weston Labs., Inc., Old Littleton Rd., Har-
 vard, Mass.—C
 Wilson & Co., G. C., 2 N. Passaic Ave., Chat-
 ham, N.J.—I
 Wood Counter Lab., N., 5491 Blackstone Ave.,
 Chicago 15, Ill.—G
 Wunderlich Radio Co., 2-5th Ave., New York
 11, N.Y.—C
 Yellow Springs Instrument Co., P. O. Box 106,
 Yellow Springs, Ohio—I
 Zernickow Co., O., 15 Park Row, New York
 38, N.Y.—H

**41—MEASUREMENT & TEST
 EQUIPMENT—DECADE
 BOXES**

Decade boxes, capacitance A
 Decade boxes, inductance B
 Decade boxes, resistance C

 AEROVOX CORP., 740 Belleville Ave., New
 Bedford, Mass.—A,B,C
 Allegany Instrument Co., 1000 Oldtown Rd.,
 Cumberland, Md.—C
 Barker & Williamson, 237 Fairfield Ave., Up-
 per Darby, Pa.—B
 Borden Engineering Co., 63 Clinton Ave.,
 New Providence, N.J.—C
 British Electronics Sales Co., 23-03 45th Rd.,
 Long Island City 1, N.Y.—C
 CLAROSTAT MFG. CO., 1 Washington St.,
 Dover, N.H.—C
 Clegg Laboratories, Inc., 142 S. Livingston
 Ave., Livingston, N.J.—A,B
 Coast Coll Co., 5352 W. Washington Blvd.,
 Los Angeles 16, Calif.—B
 Cornell-Dubilier Electric Corp., 333 Hamilton
 Blvd., S. Plainfield, N.J.—A
 Daven Co., 191 Central Ave., Newark 4, N.J.
 —C
 Electrodyne Co., Endicott St., Norwood, Mass.
 —A,C
 Electrofilm Inc., 7116 Laurel Canyon Blvd.,
 N. Hollywood, Calif.—C
 Electro-measurements, Inc., 4312 S.E. Stark
 St., Portland 15, Ore.—C
 Electronic Instrument Co., 84 Withers St.,
 Brooklyn 11, N.Y.—A,C
 Electro-Tech Equip. Co., 308 Canal St., New
 York, N.Y.—A,B,C
 Electro-Technics, 193 Albion Ave., Paterson,
 N.J.—B
 Feiler Eng'g. & Mfg. Co., 8026 N. Monticello
 Ave., Skokie, Ill.—A,C
 FRED TRANSFORMER CO., 1718 Weirfield
 St., Brooklyn 27, N.Y.—A,B
 Gaskin Co., 1005 S. Aurora Way, Wheaton, Ill.
 —B,C
 GENERAL RADIO CO., 275 Mass. Ave., Cam-
 bridge 39, Mass.—A,B,C
 Gray Instrument Co., 64 W. Johnson St.,
 Philadelphia 44, Pa.—C
 Heath Co., 805 Territorial, Benton Harbor,
 Mich.—A,C

Hycor, Co., Inc., 11423 Van Owen St., N. Hollywood, Calif.—B
 Industrial Instruments, 89 Commerce Rd., Cedar Grove, N.J.—A,C
 Laboratory for Electronics, Inc., 75 Pitts St., Boston 14, Mass.—A,B,C
 Leeds & Northrup Co., 4970 Stenton Ave., Philadelphia 44, Pa.—A,C
 LEE ELECTRONIC LABS., INC., 233 Dudley St., Boston 19, Mass.—C
 Lenkurt Electric Co., 1105 County Rd., San Carlos, Calif.—B
 Lux Industries, Inc., 38 Argyle Park, Buffalo 22, N.Y.—G
 Metropolitan Electronics & Instruments Co., 106 5 Ave., New York 11, N.Y.—A,C
 National Capacitor Co., 585 Washington St., Quincy 69, Mass.—A
 Ohmite Mfg. Co., 3601 Howard St., Skokie, Ill.—C
 PHAOSTRON CO., 151 Pasadena Ave., S. Pasadena, Calif.—C
 Precise Devel. Corp., 999 Long Beach Rd., Oceanside, N.Y.—A,B,C
 Rochester Electronics Co., P. O. Box 227, Penfield, N.Y.—C
 Rubicon Co., Ridge Ave. at 35th St., Philadelphia 32, Pa.—C
 SHALLCROSS MFG. CO., 520 Pusey Ave., Collingdale, Pa.—A,B,C
 Sticht Co., Herman H., 27 Park Pl., New York 7, N.Y.—C
 Tech Laboratories Inc., Bergen & Edsall Bldgs., Palisades Park, N.J.—B,C
 Transatron, Inc., 154 Spring St., New York 12, N.Y.—C
 U.S. Testing Co., 1415 Park Ave., Hoboken, N.J.—A,B,C
 WELCH MFG. CO., W. M., 1515 Sedgwick Ave., Chicago 10, Ill.—A,B,C
 Winslow Co., 9 Liberty St., Newark 5, N.J.—C

42—MEASUREMENT & TEST EQUIPMENT—GENERATORS

- Generators, A-F signal A
- Generators, color TV signal N
- Generators, F-M signal B
- Generators, harmonic C
- Generators, microwave signal D
- Generators, noise E
- Generators, pulse F
- Generators, R-F signal G
- Generators, single-sideband Q
- Generators, square wave H
- Generators, sweep J
- Generators, sync J
- Generators, television, composite signal K
- Generators, timing marker L
- Generators, UHF O
- Generators, ultrasonic R
- Generators, VHF P
- Generators, video signal M

Air Associates, Teterboro, N.J.—A,B,F,G,O,P,R
 Airborne Instruments Laboratory, 160 Old Country Rd., Mineola, L.I., N.Y.—G,I
 AIRCRAFT RADIO CORP., Boonton, N.J.—D,G,O,P
 Airtron Inc., 1103 W. Elizabeth Ave., Linden, N.J.—D
 American Electronic Labs., Inc., 641 Arch St., Philadelphia 6, Pa.—F,H
 American Electronic Mfg., 9503 W. Jefferson Blvd., Culver City, Calif.—H,I,J
 American Engineering Corp., 2040 Colo. Ave., Santa Monica, Calif.—G
 American Radio Co., 445 Park Ave., New York 22, N.Y.—D
 Amplitronix, Inc., 280 Ninth Ave., New York 1, N.Y.—F,H,I
 Anderson Labs., 39 Talcott Rd., West Hartford 10, Conn.—F,H,J
 Applied Science Corp., P.O. Box 44, Princeton, N.J.—F
 Approved Electronic Instrument, 928 Broadway, New York 10, N.Y.—A,B,G,I,O
 A.R.F. Products, Inc., 7627 Lake St., River Forest, Ill.—B,G
 Atomic Instrument Co., 84 Mass. Ave., Cambridge 39, Mass.—F
 Audio-Tone Oscillator Co., 6511 Main St., Long Hill, Conn.—A
 Avion Instrument Co., 299 State Highway 17 Paramus, N.J.—B,I
 Barker & Williamson, 237 Fairfield Ave., Upper Darby, Pa.—A,H
 Baugham Co., E. J., 350 S. Central, Los Angeles 13, Calif.—G,I,K
 BERKELEY SCIENTIFIC, DIV. BECKMAN INSTRUMENTS, 2200 Wright Ave., Richmond 3, Calif.—F
 BOONTON RADIO CORP., Intervale Rd., Boonton, N.J.—B,G,P
 Bristol Eng'g Corp., Bristol, Pa.—A,H,P
 Browning Labs., Winchester, Mass.—L
 Brubaker Mfg. Co., 9151 Exposition Dr., Los Angeles 34, Calif.—E,F,L,M



Burroughs Corp., Electronic Instruments Div., 1209 Vine St., Philadelphia 7, Pa.—F,J,K,N
 Canoga Corp., 5955 Sepulveda Blvd., Van Nuys, Calif.—I
 Carol Electronics Corp., 141 E. 25th St., New York 10, N.Y.—A
 Carlson & Nicholson, 497 Maynard Dr., Buffalo 21, N.Y.—F
 Century Electronics, 14844 Canard St., Van Nuys, Calif.—D
 CENTURY METALCRAFT, 14806 Oxnard St., Van Nuys, Calif.—G
 CGS Laboratories, Inc., 391 Ludlow St., Stamford, Conn.—I
 Chatham Electronics Corp., 630 W. Mt. Pleasant Ave., Livingston, N.J.—F
 Clegg Laboratories, Inc., 142 S. Livingston Ave., Livingston, N.J.—F,G,H,I,J,K,L,N
 Clough-Bregle Co., 6014 Broadway, Chicago 40, Ill.—A,G,I
 Codetypewriter Laboratories, 550 5th Ave., New York 19, N.Y.—F,L
 Communication Measurements Lab., 350 Leland Ave., Plainfield, N.J.—N
 Computer Control Co., 106 Concord Ave., Belmont 78, Mass.—L
 Conn. Telephone & Electric Co., 70 Britannia St., Meriden, Conn.—B,D,E,O,P
 Constable Eng'g. Co., J. M., 101-05 77 St., Ozone Park 17, N.Y.—H
 Crosby Laboratories, Inc., Box 233, Hicksville, N.Y.—G,Q
 Crown Eng'g., 3821 Commercial N. E., Albuquerque, N.M.—I
 CRUCIBLE STEEL CO. OF AMERICA, Oliver Bldg., Pittsburgh 30, Pa.—L,M
 Cubic Corp., 2841 Canon St., San Diego 6, Calif.—D,G,H
 Dade Bros., Old Country Rd., Mineola, L.I., N.Y.—F
 Daven Co., 191 Central, Newark, N.J.—A,G
 Dayton Aviation Radio & Equip. Corp., RR #3, Troy, Ohio—G
 Decade Instrument Co., Box 153, Caldwell, N.J.—B,G,I,P
 DeMornay-Bonardi, Inc., 780 S. Arroyo Pkwy., Pasadena, Calif.—D
 Detectulab, Inc., 6544 Sheridan Rd., Chicago 26, Ill.—F
 Digital Instrument Co., 212 Almeria Ave., Coral Gables, Fla.—F,H,L
 Drive-In-Theater Mfg. Co., 505 W. 9th, Kansas City, Mo.—F,H
 Dubrow Devel. Co., 235 Penn St., Burlington, N.J.—A
 DUMONT LABS., INC., Allen B., TV Transmitter Dept. Mobile Comm. Dept., 1500 Main St., Clifton, N.J.—F,H,J,K,M,N
 DUMONT LABORATORIES, INC., ALLEN B., 2 Main Ave., Passaic, N.J.—J
 ELECTRICAL & PHYSICAL INSTRUMENT CORP., 25 W. 43 St., New York 36, N.Y.—F,H
 Electrofilm Inc., 7116 Laurel Canyon Blvd., N. Hollywood, Calif.—O,P
 Electro Impulse Lab., 62 White St., Red Bank, N.J.—O,P
 Electronic Instrument Co., 84 Withers St., Brooklyn 11, N.Y.—A,B,G,I
 Electronic Measurements Co., Lewis St. & Maple Ave., Eatontown, N.J.—O,P
 Electronic Measurements Corp., 280 Lafayette St., New York 12, N.Y.—A,G,H
 Electronic Research Associates, 715 Main St., N. Caldwell, N.J.—E
 Electronic Systems Co., 578 E. 161 St., New York 56, N.Y.—F
 Electron-Radar Products, 1041 N. Pulaski Rd., Chicago 51, Ill.—A,D,E,F,G
 Electro Products Laboratories, 4501 N. Ravenswood Ave., Chicago 40, Ill.—I
 Electro-Pulse Inc., 11811 Major St., Culver City, Calif.—F,G,L
 Elk Electronic Labs. Inc., 333 W. 52 St., New York 19, N.Y.—A,B,E,G,H,I,O,P
 Elm Laboratories, 18 S. Broadway, Dobbs Ferry, N.Y.—A
 El-Tronics, Inc., 5 & Noble Sts., Philadelphia 23, Pa.—H
 Empire Device Products Corp., 38-15 Bell Blvd., Bayside 61, N.Y.—E,F
 Endevo Corp., 689 Fair Oaks Ave., Pasadena 2, Calif.—C
 Engineering Associates, 434 Patterson Rd., Dayton 9, Ohio—D,E,O,P
 FAIRCHILD CAMERA & INSTRUMENT CORP., Robbins Lane, Syosset, N.Y.—B,G
 Federal Mfg. & Eng'g. Corp., 211 Steuben St., Brooklyn 5, N.Y.—O,P
 Feiler Eng'g. & Mfg. Co., 8026 N. Monticello Ave., Skokie, Ill.—A,E,G,H,I
 Ferris Instrument Co., 110 Cornelia St., Boonton, N.J.—E,G,O,P
 Ferroxcube Corp., Saugerties, N.Y.—J,K
 F-R Machine Works, Electronics & X-Ray Div., 44-14 Astoria Blvd., L.I.C. 3, N.Y.—D
 Gaskins Co., 1005 S. Aurora Way, Wheaton, Ill.—A,L

GENERAL COMMUNICATION CO., 85 Beacon St., Boston 15, Mass.—B,D,F,G
 GENERAL ELECTRIC CO., Germanium Products Div., Electronics Park, Syracuse, N.Y.—B,I,L
 GENERAL RADIO CO., 275 Mass. Ave., Cambridge 39, Mass.—A,E,F,G,H,O,P
 General Test Equipment Co., 38 Argyle Pk Buffalo 22, N.Y.—E,F
 GERTSCH PRODUCTS, 11846 Miss. Ave., Los Angeles, Calif.—D
 G & M Equip. Co., 7315 Varna Ave., N. Hollywood, Calif.—D,F,G,H,I,J
 Gorrell & Gorrell, Haworth, N.J.—L
 Graf, R. F., 780 W. End Ave., New York 25, N.Y.—A,B,H,I,J,O,P
 Granco Products Inc., 36-17 20 Ave., Long Island City 5, N.Y.—G,K,I
 Grason-Stadler Co., 106 Hampshire St., Cambridge 39, Mass.—F
 Greibach Research & Devel. Labs, 80 Pryn Terrace, New Rochelle, N.Y.—A
 Gulston Mfg. Corp., 212 Durham Ave., Monticello, N.J.—F,R
 G. W. Associates, P. O. Box 2263, El Segundo, Calif.—D
 Hazeltine Electronics Corp., 58-25 Little Neck Pkwy., Little Neck 62, N.Y.—D
 Heath Co., 305 Territorial, Benton Harbor, Mich.—A,G,H,I
 Hewlett-Packard Co., 395 Page Mill Rd., Palo Alto, Calif.—A,C,D,F,G,H,I,M,O,P
 HICKOK ELECTRICAL INSTRUMENT CO., 10514 Dupont Ave., Cleveland 8, Ohio—A,F,G,H,I,J,K,M,O,P
 Hillyer Instrument Co., 54 Lafayette St., New York 13, N.Y.—F,M
 Hycor Mfg. Co., 2961 E. Colorado St., Pasadena 8, Calif.—D,G,H,I,M,N,O,P
 Industrial Television Inc., 369 Lexington Ave., Clifton, N.J.—N,O
 Industrial Test Equipment Co., 55 E. 11th St., New York 3, N.Y.—A
 Insuline Corp. of America, 186 Granite St., Manchester, N.H.—A,B,D,E,F,H,I
 Jackson Electrical Instrument Co., 18 S. Patterson Blvd., Dayton 1, O.—A,I,M,O,P
 Kaiser Metal Products, Inc., Bristol, Pa.—I
 KAY ELECTRIC CO., 14 Maple Ave., Pine Brook, N.J.—D,E,F,G,I,K,L,M,N,O,P
 Kings Electronics Co., 40 Marbledale Rd., Tuckahoe, N.Y.—F,G,O,P
 Kirby Products Corp., 175 5th Ave., New York 10, N.Y.—G,O,P
 Kollsman Instrument Corp., 80-08 45th Ave., Elmhurst 73, N.Y.—I,O
 Korb Eng'g. & Mfg. Co., 30 Ottawa Ave., Grandville, Mich.—D
 Krohn-Hite Instrument Co., 580 Mass. Ave., Cambridge 39, Mass.—A,H
 Lavote Labs, Inc., Morganville, N.J.—C,G
 Linear Equip. Labs., Brightwater Pl., Massachusetts, N.Y.—H,I
 Loral Electronics Corp., 794 E. 140 St., New York 54, N.Y.—F,G
 Lux Industries, Inc., 38 Argyle Park, Buffalo 22, N.Y.—A,D,E,F,G
 Magnetic Instrument Co., 82 Main St., W. Orange, N.J.—A,I,O,P
 Magnetic Research Corp., 318 Kansas St., El Segundo, Calif.—F
 Magnex Corp., 902-28 Van Wyck Expressway, Jamaica 18, N.Y.—F,G
 Maico Co., 21 N. 3rd St., Minneapolis 1, Minn.—A,I
 Manson Labs., 207 Greenwich Ave., Stamford, Conn.—D,F,M
 MANUFACTURERS ENGG' & EQUIP., York & Mill Sts., Hatboro, Pa.—H,I
 Marconi Instruments Ltd., 23 Beaver St., New York 4, N.Y.—A,B,E,F,G,H,M,O,P
 Marconi's Wireless Telegraph Co., 23 Beaver St., New York 4, N.Y.—J
 Maxson Corp., W.L., 460 W. 34th St., New York 1, N.Y.—D
 MEASUREMENTS CORP., Boonton, N.J.—A,B,E,F,G,H,O,P
 Mercury Electronic Co., Box 450, Red Bank, N.J.—A,B,D,F,G,H
 Metropolitan Electronics & Instruments Co., 106 5 Ave., New York 11, N.Y.—A,B,C,K
 Microlab, Inc., 71 Okner Pkwy., Livingston, N.J.—C
 Midwest Eng'g., Devel. Co., 3648 State Line Kansas City 3, Kansas—D
 Mil Instrument Corp., 92-15 172 St., Jamaica 33, N.Y.—A,B,F,J,K
 Munston Mfg. & Service, Inc., Beech St. Islip, N.Y.—A,B
 National Capacitor Co., 585 Washington St., Quincy 69, Mass.—F
 NEW LONDON INSTRUMENT CO., P. O. Box 189, New London, Conn.—B,D,H,I
 Northeastern Eng'g Corp., S. Bedford St., Manchester, N.H.—D,F,G,O
 Nuclear Instrument & Chemical Corp., 22 W. Erie St., Chicago 10, Ill.—H
 Pacific Mercury TV Mfg. Corp., 5955 Van Nuys Blvd., Van Nuys, Calif.—K,M
 Pacific Transducer TT Corp., 11921 W. Pic Blvd., Los Angeles 64, Calif.—I
 Peters Co., C. S., 1353 N.Y. Ave., N.E. Washington 2, D.C.—G
 PHILCO CORP.—Accessory Div., "A" & Allegany Ave., Philadelphia 34, Pa.—B,G,O,P
 PHILCO CORP., Gov't. & Industrial Div., 4700 Wissahickon Ave., Philadelphia 44, Pa.—D,N

POLARAD ELECTRONICS CORP., 100 Metropolitan Ave., Brooklyn 11, N.Y.—B,D,G,I,J,K,L,N
POLYTECHNIC RESEARCH & DEVELOPMENT CO., 202 Tillary St., Brooklyn 1, N.Y.—D,E,G,I,L,N,O,P
Precise Development Corp., 999 Long Beach Rd., Oceanside, L.I., N.Y.—A,F,G,H,I
Precision Apparatus Co., 92-27 Horace Harding Blvd., Elmhurst, N.Y.—A,B,G,H,I,P
Pulse Techniques, Inc., 1411 Palisade Ave., W. Englewood, N.J.—A
Radar Engineers, 4528 5th NE, Seattle 5, Wash.—F
Radiation, Inc., Drawer Q, Melbourne, Fla.—D
Radio City Products Co., 101 West 31 St., New York 1, N.Y.—A,B,C,F,G,H,I,J,K,L,M,N,O,P
RADIO CORP. OF AMERICA, RCA TUBE DEPT., 415 S. 5 St., Harrison, N.J.—A,G,I,M,N,O,P
RADIO CORP. OF AMERICA, RCA VICTOR DIV. ENGG. PRODUCTS DIV., Camden 2, N.J.—A,G,H,I,J,K
Radio Kits, Inc., 120 Cedar St., New York 6, N.Y.—A,B
Reiner Electronics Co., 152 W. 25 St., New York 1, N.Y.—H
Resdel Eng'g., 2351 Riverside Dr., Los Angeles 39, Calif.—A,E
Research Electronics Labs., Roslyn, Pa.—J,K,N
Rollin Co., 2010 N. Lincoln Ave., Pasadena 3, Calif.—D,G,O
Rutherford Electronics Co., 3707 S. Robertson Blvd., Culver City, Calif.—F,H,I
Scott, Inc., Hermon Hosmer, 385 Putnam Ave., Cambridge 39, Mass.—E
Selectar Industries, 401 E. 138 St., New York 54, N.Y.—A,G
Servo Corp. of America, 2020 Jericho Turnpike, New Hyde Park, L.I., N.Y.—H,O,P
Sierra Electronic Corp., 1050 Brittan Ave., San Carlos, Calif.—O,P
Signal Equip. Co., 2706 3rd Ave., Seattle 1, Wash.—G
Simpson Electric Co., 5208 W. Kinzie St., Chicago 44, Ill.—A,B,H,I,N,O,P
Southwestern Industrial Electronics, 2831 Post Oak Rd., Houston, Texas.—A
Specialty Assembling, 79 Clifton Place, Brooklyn 38, N.Y.—A,F
Spencer-Kennedy Labs., 186 Mass. Ave., Cambridge 39, Mass.—F,H,I
Sperry Gyroscope Co., Great Neck, N.Y.—D
Standard Coil Products Co., 2329 N. Pulaski Rd., Chicago 39, Ill.—I
Supreme, Inc., Greenwood, Miss.—A,B,G,K,M
SYLVANIA ELECTRIC PRODUCTS, 1740 Broadway, New York 19, N.Y.—B,G,H,I,N
Tally Register Corp., 5300 14 Ave., N. W., Seattle 7, Wash.—F,H
Teca Corp., 139 E. 23rd St., New York 10, N.Y.—F,H
Technitrol Eng'g. Co., 2751 N. 4 St., Philadelphia 33, Pa.—F
TEKTRONIX, INC., P. O. Box 831, Portland 7, Ore.—F,G,H,L
TELECHROME, INC., 88 Merrick Rd., Amityville, L.I., N.Y.—E,K,N
Telegrip Radio Co., 2559 W. 21 St., Chicago 8, Ill.—J,K
Telerad Mfg. Co., 1440 Broadway, New York 18, N.Y.—D
Telescreen Corp., 36 Grove St., New Canaan, Conn.—M
Teletronics Laboratory, Inc., 54 Kinkel St., Westbury, L.I., N.Y.—C,F,H,I
TEL-INSTRUMENT CO., 728 Garden St., Carlstedt, N.J.—G,I,J,K,M,N,O,P
Telonic Instruments, 444 S. Rural St., Indianapolis 1, Ind.—B,G,I,M,O,P
TEXAS INSTRUMENT INC., 6000 Lemmon Ave., Dallas 9, Texas.—D,F,G,H,I
Triplett Electric Instrument Co., Harmon Rd., Bluffton, Ohio—A,B,I,O,P
Triumph Mfg. Co., 913 Van Buren, Chicago 7, Ill.—H
U.S. Testing Co., 1415 Park Ave., Hoboken, N.J.—A,B,H,L
United Technical Labs., Morristown, N.J.—K,M
Valtronics, Inc., 242 Valley St., Dayton 4, Ohio—A,G
Varian Associates, 611 Hansen Way, Palo Alto, Calif.—D
VECTRON, INC., 400 Main St., Waltham 54, Mass.—A,D
Vibro-Ceramics Corp., Metuchen, N.J.—R
Videon Electronic Corp., 902 E. Michigan St., Indianapolis 2, Ind.—O
Voran & Co., George, 835 N. 19th St., Philadelphia 30, Pa.—A
Valkirt Co., 145 W. Hazel St., Inglewood 3, Calif.—F,H
Vang Labs., 296 Columbus Ave., Boston 16, Mass.—K,M
Washington Institute of Technology Inc., 4810 Calvert Rd., College Park Md.—G
Waveforms, Inc., 333 6th Ave., New York 14, N.Y.—A,B,G,I
VAVELINE, INC., Passaic Ave., Caldwell, N.J.—D,E
Veinschel Eng'g. Co., 1051 Metropolitan Ave., Kensington, Md.—A
Veston Labs., Inc., Old Littleton Rd., Harvard, Mass.—D,E,F
White Industries, Inc., 421 W. 54th St., New York 19, N.Y.—E,F,H

Wickes Eng'g. & Const., Co., 12th St. & Ferry Ave., Camden, N.J.—M,N

43—MEASUREMENT & TEST EQUIPMENT—MONITORS

- Monitors, antennas phaseA
- Monitors, audioB
- Monitors, frequencyC
- Monitors, modulationD
- Monitors, serviceE
- Monitors, video lineF
- Monitors, video off-the-airG
- Monitors, waveformH

ANDREW CORP., 363 E. 75 St., Chicago 19, Ill.—A
A.R.F. Products, Inc., 7627 Lake St., River Forest, Ill.—D
Baughman Co., E.J., 350 S. Central, Los Angeles 13, Calif.—F,G,H
Berkeley Div., Beckman Instruments, Inc., 2200 Wright Ave., Richmond 3, Calif.—B,C
Bristol Eng'g. Corp., Bristol, Pa.—D,H
Browning Labs, Inc., 750 Main St., Winchester, Mass.—D
Budelman Radio Corp., 375 Fairfield Ave., Stamford, Conn.—C,D
BURKE & JAMES, INC., 321 S. Wabash Ave., Chicago 4, Ill.
Clegg Laboratories, Inc., 142 S. Livingston Ave., Livingston, N.J.—H
Colortone Electronics, 238 William St., New York 38, N.Y.—C
Conrac, Inc., 19217 E. Foothill Blvd., Glendora, Calif.—F,G
Dubrow Devel. Co., 235 Penn St., Burlington, N.J.—A,B,D
DUMONT LABS., INC., Allen B. TV Transmitter Dept. Mobile Comm. Dept., 1500 Main St., Clifton, N.J.—C,D,F,G,H
Electro-Tech Equip., 308 Canal St., New York 13, N.Y.—E
Eero Radio Laboratories, 637 Stewart Ave., Garden City, N.Y.—D
GATES RADIO CO., 123 Hampshire St., Quincy, Ill.—C,D,H
GENERAL COMMUNICATION CO., 681 Beacon St., Boston 15, Mass.—C
GENERAL ELECTRIC CO., Broadcast Equip. & Commercial Equip. Div., Electronics Park, Syracuse, N.Y.—F,G
GENERAL ELECTRIC CO., Germanium Products Div., Electronics Park, Syracuse, N.Y.—C
GENERAL PRECISION LAB., INC., 63 Bedford Rd., Pleasantville, N.Y.—B,C,D,F,G,H
GENERAL RADIO CO., 275 Mass. Ave., Cambridge 39, Mass.—C,D
G & M Equipment Co., 7315 Varna Ave., North Hollywood, Calif.—C
GRAYBAR ELECTRIC CO., 420 Lexington Ave., New York 17, N.Y.—B,D,F,G
Hewlett-Packard Co., 395 Page Mill Rd., Palo Alto, Calif.—B,C,D
Industrial Television Inc., 369 Lexington Ave., Clifton, N.J.—F,G
Int'l Electronics Corp., 147 Parkhouse St., Dallas 2, Texas—B
Int'l Research Associates, 2221 Warwick Ave., Santa Monica, Calif.—F,G
JOHNSON CO., E. F., Waseca, Minn.—C,D
Kalbfell Lab., 1090 Morena Blvd., San Diego 10, Calif.—F
Lampkin Labs., Bradenton 2, Fla.—C,D
Marconi Instruments Ltd., 23 Beaver St., New York 4, N.Y.—D
Marconi's Wireless Telegraph Co., 23 Beaver St., New York 4, N.Y.—F,G,H
Maryland Electronic Mfg. Corp., 5009 Calvert Rd., College Park, Md.—A
National Electrical Machine Shops, 919 Jesup Blair Dr., Silver Spring, Md.—A
NEW LONDON INSTRUMENT CO., P.O., Box 189 New London, Conn.—D
PHILCO CORPORATION—Accessory Div., "A" & Alleghany Ave., Philadelphia 34, Pa.—G
Plymouth Electronics Corp., 50 Kingsbury St., Worcester, Mass.—B
POLARAD ELECTRONICS CORP., 100 Metropolitan Ave., Brooklyn 11, N.Y.—G,H
POLYTECHNIC RESEARCH & DEVEL., 55 Johnson St., Brooklyn 1, N.Y.—C
Precision Apparatus Co., 92-27 Horace Harding Blvd., Elmhurst, L.I., N.Y.—E
Press Wireless Labs, Inc., 25 Prospect Pl., W. Newton 65, Mass.—C
RADIO CORP. OF AMERICA, RCA VICTOR DIV. ENGG. PRODUCTS DIV., Camden 2, N.J.—A,B,C,D,F,G,H
Reevesound Co., 35-54 36 St., Long Island City 1, N.Y.—B
Servo Corp. of America, 20-20 Jericho Turnpike, New Hyde Park, N.Y.—B,C
Sierra Electronic Corp., 1050 Brittan Ave., San Carlos, Calif.—F,H
Silver Bay Equip. Co., 5004 20th N.W., Seattle 7, Wash.—C
STANDARD ELECTRONICS CORP., 285 Emmet St., Newark 5, N.J.—F,H
TELECHROME, INC., 88 Merrick Rd., Amityville, L.I., N.Y.—G
Telescreen Corp., 36 Grove St., New Canaan, Conn.—F

Television Utilities Corp., 1315 Jericho Tpke., New Hyde Park, L.I., N.Y.—F
Walkirt Co., 145 W. Hazel St., Inglewood 3, Calif.—C
West Coast Electronics Co., 5873 W. Jefferson Blvd., Los Angeles 16, Calif.—C,D
Westinghouse Electric Corp., Box 868, Pittsburgh 30, Pa.—C
Wickes Eng'g. & Const. Co., 12th St. & Ferry Ave., Camden, N.J.—F

44—MEASUREMENT & TEST EQUIPMENT—OSCILLATORS

- Oscillators, audioA
- Oscillators, codeG
- Oscillators, grid dipH
- Oscillators, microwaveI
- Oscillators, R-FB
- Oscillators, tuning forkC
- Oscillators, ultrasonicD
- Oscillators, video patternE
- Oscillators, video rangeF

Air Associates, Teterboro, N.J.—B
Airborne Instruments Laboratory, 160 Old Country Rd., Mineola, N.Y.—B,I
American Electroengineering Corp., 2040 Colo. Ave., Santa Monica, Calif.—B
American Radio Co., 445 Broadway, New York 22, N.Y.—I
American Time Products, Inc., 580 5 Ave., New York, N.Y.—C
Audio-Tone Oscillator Co., 6511 Main St., Long Hill, Conn.—A
Barker & Williamson, 237 Fairfield Ave., Upper Darby, Pa.—A,B
Branson Instruments, Inc., 430 Fairfield Ave., Stamford, Conn.—D
Bristol Eng'g. Corp., Bristol, Pa.—A,B
BRUSH ELECTRONICS CO., 3405 Perkins Ave., Cleveland 14, Ohio—D
Bunnell & Co., J.H., 81 Prospect St., Brooklyn 1, N.Y.—C
Carol Electronics Corp., 141 E. 25th St., New York 10, N.Y.—A
Cascade Research Corp., 53 Victory Lane, Los Gatos, Calif.—I
C.G.S. Laboratories, Inc., 391 Ludlow St., Stamford, Conn.—I
Century Electronics, 14844 Oxnard St., Van Nuys, Calif.—I
Clark Crystal Co., 2 Farm Rd., Marlboro, Mass.—D
Clough-Bregle Co., 6014 Broadway, Chicago 40, Ill.—A,B
Color Television Inc., 973 E. San Carlos Ave., San Carlos, Calif.—I
Cubic Corp., 2841 Canon St., San Diego 6, Calif.—I
Daven Co., 191 Central Ave., Newark 4, N.J.—A
Deagan, Inc., J. C., 1770 W. Berceau Ave., Chicago 13, Ill.—C
Decade Instrument Co., Box 153, Caldwell, N.J.—B,D
DIAMOND MICROWAVE CORP., 7 North Ave., Wakefield, Mass.—I
Donner Scientific Co., 2829 7th St., Berkeley 10, Calif.—A,B,D
Douglas Microwave Co., 11 Beechwood Ave., New Rochelle, N.Y.—I
Dubrow Development Co., 235 Penn St., Burlington, N.J.—A,C
DUMONT LABS., INC., Allen B. TV Transmitter Dept. Mobile Comm Dept. 1500 Main St., Clifton, N.J.—E
Eldico of N.Y., Inc., 70-72 E. 2nd St., Mineola, L.I., N.Y.—H
Electronic Instrument Co., 84 Withers St., Brooklyn 11, N.Y.—A,B
Elk Electronic Labs., 333 W. 52 St., New York 19, N.Y.—A,B
Elm Labs., 18 S. Broadway, Dobbs Ferry, N.Y.—A
El-Tronics, Inc., 5 & Noble Sts., Philadelphia 23, Pa.—A
Engineering Associates, 434 Patterson Rd., Dayton 9, Ohio—I
Feiler Eng'g. & Mfg. Co., 8026 N. Monticello Ave., Skokie, Ill.—A,B,E
F-R Machine Works, Electronics & X-Ray Div., 44-14 Astoria Blvd., Long Island City 3, N.Y.—I
Franklin Electronics Inc., 415 W. Pike St., Philadelphia 40, Pa.—A,E
Gaskins Co., 1005 S. Auroraway, Wheaton, Ill.—D
GENERAL ELECTRIC CO., Apparatus Div., 1 River Rd., Schenectady 5, N.Y.—D
GENERAL ELECTRIC CO., Germanium Products Div., Electronics Park, Syracuse, N.Y.—I
General Electrosonics, Inc., 32 W. 22 St., New York 10, N.Y.—D
GENERAL RADIO CO., 275 Mass. Ave., Cambridge 39, Mass.—A,B,C,D
Granco Products, Inc., 36-17 20 Ave., Long Island City 5, N.Y.—B
Grason-Stadler Co., 106 Hampshire St., Cambridge 39, Mass.—A
GRAYBAR ELECTRIC CO., 420 Lexington Ave., New York 17, N.Y.—A
Greene Co., L. Charlton, 314 Washington St., Newton 58, Mass.—A

Greenleaf Mfg. Co., 7814 Maplewood Ind. Ct., St. Louis 17, Mo.—D
 Gulton Mfg. Corp., 212 Durham Ave., Metuchen, N.J.—D
 G. W. Associates, P.O. Box 2263, El Segundo, Calif.—I
 Hamlyn Electronics Corp., 32 Holman Blvd., Hicksville, N.Y.—A.G
 Heath Co., 305 Territorial, Benton Harbor, Mich.—A.H
 Hewlett-Packard Co., 395 Page Mill Rd., Palo Alto, Calif.—A.B.I
 HICKOK ELECTRICAL INSTRUMENT CO., 10514 Dupont Ave., Cleveland 8, Ohio—E
 Industrial Test Equipment Co., 55 E. 11th St., New York 3, N.Y.—A
 Int'l. Research Assoc., 2221 Warwick Ave., Santa Monica, Calif.—A.B
 Jackson Electrical Instrument Co., 18 S. Patterson Blvd., Dayton 1, Ohio—A
 Johnson Laboratories, Div. of Aladdin Industries, Inc., Willard Rd., Norwalk, Conn.—B
 Jones Electronics Co., M.C., 185 N. Main St., Bristol, Conn.—B
 KAY ELECTRIC CO., 14 Maple Ave., Pine Brook, N.J.—B.F.I
 Kings Electronics Co., 40 Marbledale Rd., Tuckahoe, N.Y.—B.I
 Kirby Products Corp., 175 5th Ave., New York 10, N.Y.—B
 Korb Eng'g. & Mfg. Co., 30 Ottawa Ave., Grandville, Mich.—I
 Krohn-Hite Instrument Co., 580 Mass. Ave., Cambridge 39, Mass.—A.D
 Laboratory for Electronics, 75 Pitts St., Boston, 14, Mass.—I
 Linear Equipment Labs., Brightwater Pl., Massapequa, L.I., N.Y.—H
 Lux Industries, Inc., 38 Argyle Park, Buffalo 22, N.Y.—B
 Magnex Corp., 90-28 Van Wyck Expressway, Jamaica 18, N.Y.—B
 MANUFACTURERS ENG'G. & EQUIP. CORP., York & Mill Rds., Hatboro, Pa.—F
 Marconi Instruments Ltd., 23 Beaver St., New York 4, N.Y.—A.F
 Marine View Electronics, 744 E. 138 St., New York 54, N.Y.—A.B.C.D
 Maxson Corp., W.L., 460 W. 34th St., New York 1, N.Y.—A.I
 MEASUREMENTS CORP., Boonton, N.J.—H
 Mercury Electronic Co., Box 450, Red Bank, N.J.—A.B.C.D
 Metropolitan Electronics & Instruments Co., 106 5 Ave., New York 11, N.Y.—A.B
 Midwest Eng'g. Devel. Co., 3648 State Line, Kansas City 3, Kansas—I
 Millen Mfg. Co., James, 150 Exchange St., Malden 48, Mass.—H
 Miller Instruments, Inc., Wm., 325 N. Halstead Ave., Pasadena 8, Calif.—A.C
 Nassau Research & Development Associates, 66 Main St., Mineola, N.Y.—I
 NEW LONDON INSTRUMENT CO., P.O. Box 189, New London, Conn.—H
 Nichols Products Co., 325 W. Main St., Moorestown, N.J.—B
 Perma-Power Co., 4727 N. Damen Ave., Chicago 25, Ill.—E
 Peschel Electronics, Inc., 13 Garden St., New Rochelle, N.Y.—G
 Peters Co., O. S., 1353 N.Y. Ave., N.E., Washington 2, D.C.—B
 Phebe, Inc., 900 Kingston Rd., Baltimore 12, Md.—A.G
 Philamon Labs., Inc., 5717 3 Ave., Brooklyn 20, N.Y.—C
 PHILCO CORP., Gov't & Industrial Div., 4700 Wissahickon Ave., Philadelphia 44, Pa.—I
 POLARAD ELECTRONICS CORP., 100 Metropolitan Ave., Brooklyn 11, N.Y.—E.I
 POLYTECHNIC RESEARCH & DEVELOPMENT CO., 202 Tillary St., Brooklyn 1, N.Y.—I
 Precise Development Corp., 999 Long Beach Rd., Oceanside, L.I., N.Y.—A.B
 Precision Apparatus Co., 92-27 Horace Harding Blvd., Elmhurst, L.I., N.Y.—A.B
 Precision Associates, 354 Cumberland St., Brooklyn 17, N.Y.—A
 PRESTO RECORDING CORP., Box 500, Paramus, N.Y.—I
 Pulse Techniques, Inc., 1411 Palisade Ave., W. Englewood, N.J.—A
 Radex Corp., 2076 Elston Ave., Chicago 14, Ill.—A
 Radio City Products Co., 101 West 31 St., New York 1, N.Y.—A.B.E.F
 RADIO CORP. OF AMERICA, RCA VICTOR DIV., ENGG. PRODUCTS DIV., Camden 2, N.J.—A
 RADIO CORP. OF AMERICA, Tube Div., 415 S. 5 St., Harrison, N.J.—A.B.E
 Radio Sonic Corp., 111 Bleeker St., New York 12, N.Y.—D
 Resdel Eng'g., 2351 Riverside Dr., Los Angeles 39, Calif.—D.I
 Research Electronics Lab., Roslyn, Pa.—A.E
 Riverbank Labs., Batavia Ave., P. O. Box 65, Geneva, Ill.—C
 Scientific Associates, 580 Virginia Ave., N.E., Atlanta, Ga.—I
 Selectar Industries, 401 E. 138 St., New York 54, N.Y.—A.B
 Sierra Electronic Corp., 1050 Brittan Ave., San Carlos 2, Calif.—B.I
 Sorensen & Co., 375 Fairfield Ave., Stamford, Conn.—C
 Southwestern Industrial Electronics Co., 2831 Post Oak Rd., Houston, Texas—A.D

ELECTRONIC INDUSTRIES DIRECTORY

Spartan Radio-TV, 2400 E. Ganson St., Jackson, Mich.—B
 Specialty Assembling & Packing Co., 79 Clifton Pl., Brooklyn 38, N.Y.—A.C
 Sperry Gyroscope Co., Great Neck, N.Y.—I
 Supreme, Inc., Greenwood, Miss.—A.B.E
 TECHNOLOGY INSTRUMENT CORP., 531 Main St., Acton, Mass.—B
 TELECHROME MFG. CORP., 88 Merrick Rd., Amityville, N.Y.—E
 Teletronic Lab., 54 Kinkel St., Westbury, L.I., N.Y.—A.D
 Tel-Instrument Co., 728 Garden St., Carlstadt, N.J.—B.F
 Telonic Industries, 444 S. Rural St., Indianapolis 1, Ind.—B
 TEXAS INSTRUMENTS INC., 6000 Lemmon Ave., Dallas 9, Texas—B.I
 Times Facsimile Corp., 540 W. 59 St., New York 19, N.Y.—A.C
 Triumph Mfg. Co., 913 W. Van Buren, Chicago 7, Ill.—A
 Ultradyne Eng'g. Labs., Inc., P.O. Box 8007, Albuquerque, N. Mex.—G
 United Technical Labs., Morristown, N.J.—E
 Universal Microwave Corp., 380 Hillside Ave., Hillside, N.J.—I
 U.S. Testing Co., 1415 Park Ave., Hoboken, N.J.—A.G.H
 Varian Associates, 611 Hansen Way, Palo Alto, Calif.—I
 VECTRON, INC., 400 Main St., Waltham 54, Mass.—A.I
 Vibro-Ceramics Corp., Metuchen, N.J.—D
 Vuron & Co., George, 835 N. 19th St., Philadelphia 30, Pa.—A
 Walkirt Co., 145 W. Hazel St., Inglewood 3, Calif.—A
 Waveforms, Inc., 333 6th Ave., New York 14, N.Y.—A.B.D
 WAVELINE INC., Passaic Ave., Caldwell, N.J.—I
 Welch Electric Co., 1221 Wade St., Cincinnati 14, Ohio—D
 West Coast Electronics Co., 5873 W. Jefferson Blvd., Los Angeles 16, Calif.—B
 Weston Labs., Inc., Old Littleton Rd., Harvard, Mass.—I
 Weymouth Instrument Co., 1440 Commercial St., East Weymouth 89, Mass.—I
 White Industries, Inc., 421 W. 54th St., New York 19, N.Y.—A.H
 Wickes Eng'g. & Const. Co., 12th St. & Ferry Ave., Camden, N.J.—E
 Wunderlich Radio Co., 2 Fifth Ave., New York 11, N.Y.—A.I.B

45—MEASUREMENT & TEST EQUIPMENT—OSCILLOGRAPHS

Oscillographs, cathode-ray A
 Oscillographs, direct writing B
 Oscillographs, multi-channel E
 Oscillographs, multi-element F
 Oscillographs, portable C
 Oscillographs, recording D

Allegany Instrument Co., 1000 Oldtown Rd., Cumberland, Md.—A.D.E
 American Electronic Labs., Inc., 641 Arch St., Philadelphia 6, Pa.—E
 Authorized Mfg. Service, 155 Spencer St., Brooklyn 5, N.Y.—D
 Beam Instruments Corp., 350 5 Ave., New York 1, N.Y.—A.B.C.E.F
 BENDIX AVIATION CORP., Pacific Div., 11600 Sherman Way, N., Hollywood, Calif.—B
 Browning Labs, Inc., 750 Main St., Winchester, Mass.—A
 BRUSH ELECTRONICS CO., 3405 Perkins Ave., Cleveland 14, Ohio—B.C.D.E.F
 Carol Electronics Corp., 141 E. 26th St., New York 10, N.Y.—C
 Central Research Labs, Inc., Red Wing, Minn.—A.D.F
 Century Geophysical Corp., 1333 N. Utica, Tulsa, Okla.—D.E
 Consolidated Eng'g. Corp., 300 N. Sierra Madre Villa, Pasadena 15, Calif.—C.D.E.F
 Dubrow Development Co., 235 Penn St., Burlington, N.J.—A
 DUMONT LABS., INC., Instrument Div., 760 Bloomfield Ave., Clifton, N.J.—A.C.E
 DUMONT LABS., INC., Allen B., TV Transmitter Dept., Mobile Comm. Dept., 1500 Main St., Clifton, N.J.—A.C
 Edin Co., 207 Main St., Worcester 8, Mass.—B.C.D.E
 Electro-Medical Lab., 1 Hoof-print Trail, S. Woodstock 10, Vt.—A.B
 Electronic Instrument Co., 54 Withers St., Brooklyn 11, N.Y.—A
 Electronic Measurements Corp., 280 Lafayette St., New York 12, N.Y.—A

Electronic Systems Co., 578 E. 161 St., New York 56, N.Y.—A
 ELECTRONIC TUBE CORP., 1200 E. Mead Lane, Philadelphia 18, Pa.—A.E
 Electro-Tech Equip. Co., 308 Canal St., New York, N.Y.—C.D
 El-Tronics, Inc., 5 & Noble Sts., Philadelphia 23, Pa.—A
 Feiler Eng'g. & Mfg. Co., 8026 N. Monticello Ave., Sokie, Ill.—A.C
 Franklin Electronics, 415 W. Pike St., Philadelphia 40, Pa.—A.D.E
 GENERAL ELECTRIC CO., Apparatus Div., 1 River Rd., Schenectady 5, N.Y.—F.D
 GENERAL ELECTRIC CO., Broadcast Equip. & Commercial Equip. Div., Electronics Park, Syracuse, N.Y.—A
 GENERAL ELECTRIC CO., Germanium Products Div., Electronics Park, Syracuse, N.Y.—A
 General Electrosonics, Inc., 32 W. 22 St., New York 10, N.Y.—A
 Goodyear Aircraft Corp., 1210 Massillon Rd., Akron 15, Ohio—B.D.E
 Grass Instrument Co., 101 Old Colony Ave., Quincy 70, Mass.—B
 Hamlyn Electronics Corp., 32 Holman Blvd., Hicksville, N.Y.—A
 Hathaway Instrument Co., 1315 S. Clark St., Denver 10, Colo.—A.C.D.E.F
 Heath Co., 305 Territorial, Benton Harbor, Mich.—A
 Heiland Research Corp., 150 E. 5 Ave., Denver 9, Colo.—C.D.E.F
 HICKOK ELEC. INSTRUMENT CO., 10514 Dupont Ave., Cleveland 8, Ohio—A
 Hull & Co., R. O., 1300 Parsons Ct., Rocky River, Ohio—A
 Hycon Mfg. Co., 2961 E. Colo. Blvd., Pasadena 8, Calif.—A.C
 Industrial Television, 369 Lexington Ave., Clifton, N.J.—A
 Int'l. Electronics Corp., 137 Hudson St., New York 13, N.Y.—A
 Jack Scientific Instrument Co., Bill, Box C-1, Solana Beach, Calif.—H
 Jackson Elect. Instrument Co., 18 S. Patterson Blvd., Dayton 1, Ohio—A
 Kirby Products Corp., 175 5th Ave., New York 10, N.Y.—A
 Lab. for Electronics, Inc., 75 Pitts St., Boston, Mass.—A
 Lavoie Labs., Inc., Morganville, N.J.—A.B
 LIBRASCOPE INC., 1607 Flower St., Glendale 1, Calif.—D
 Linear Equipment Labs., Brightwater Pl., Massapequa, L.I., N.Y.—A
 Maico Co., 21 N. 3rd St., Minneapolis 1, Minn.—A
 Maryland Electronic Mfg. Corp., 5009 Calvert Rd., College Park, Md.—C.D
 Midwestern Geophysical Labs., 3401 S. Harvard, Tulsa, Okla.—C.D.E.F
 Millen Mfg. Co., James, 150 Exchange St., Malden, Mass.—A
 Miller Instruments, Inc., Wm., 325 N. Halstead Ave., Pasadena 8, Calif.—A.C.D.E.I
 Minn.-Honeywell Regulator Co., Industrial Div., 4428 Wayne Ave., Phila. 44, Pa.—B
 Mohawk Electronic Research Labs., RD #4, Box 126A, Amsterdam, N.Y.—A
 Offner Electronics, Inc., 5320 N. Kedzie Ave., Chicago 25, Ill.—B.D
 PHILCO CORP., Accessory Div., "A" & Allezheny Ave., Philadelphia 34, Pa.—A.C
 Phoenix Precision Instr. Co., 3803 N. 5 St., Philadelphia 40, Pa.—D
 Photon Instrument Co., 6516 Detroit Ave., Cleveland 2, Ohio—B.C.D.E.F
 POLARAD ELECTRONICS CORP., 100 Metropolitan Ave., Brooklyn 11, N.Y.—A
 Precise Development Corp., 999 Long Beach Rd., Oceanside, N.Y.—A
 Precision Apparatus Co., 92-27 Horace Harding Blvd., Elmhurst, N.Y.—A
 Radiation, Inc., Drawer Q, Melbourne, Fla.—H
 Radio City Products Co., 101 West 31 St., New York 1, N.Y.—A.C
 RADIO CORP. OF AMERICA, RCA TUBE DEPT., 415 S. 5 St., Harrison, N.J.—A.I
 RADIO CORP. OF AMERICA, RCA VICTOR DIV., ENGG. PRODUCTS DIV., Camden 2, N.J.—A
 Rolab Studios, Walnut Tree Hill, Sandy Hook, Conn.
 Sanborn Co., Cambridge 39, Mass.—B
 Sigma Instruments, 62 Pearl St., Boston, Mass.—B
 Simpson Electric Co., 5208 W. Kinzie St., Chicago 44, Ill.—A.C
 Southwestern Indust. Electronics Co., 2831 Post Oak Rd., Houston, Texas—D.E
 Spencer-Kennedy Labs., 186 Mass. Ave., Cambridge 39, Mass.—A
 Supreme, Inc., Greenwood, Miss.—A
 SYLVANIA ELECTRIC PRODUCTS, 17 Broadway, New York 19, N.Y.—A
 Syntronic Instruments, Inc., 100 Industrial Rd., Addison, Ill.—A
 Teletronic Labs, Inc., 1835 W. Rosecrans Ave., Gardena, Calif.—A.C
 TEKTRONIX, INC., Box 831, Portland, Ore.—A.C.E
 TEXAS INSTRUMENTS INC., 6000 Lemmon Ave., Dallas 9, Texas—B.D.E
 Thompson Clock Co., H. C., 38 Federal St., Bristol, Conn.—A.B.C.D
 Tinker & Razor, P. O. Box 281, San Gabriel, Calif.—A

Triumph Mfg. Co., 913 W. Van Buren, Chicago 7, Ill.—A
 S. Testing Co., 1415 Park Ave., Hoboken, N.J.—A
VICTOREEN INSTRUMENT CO., 4800 Perkins Ave., Cleveland 12, Ohio—C
VOLKERS & SCHAFFER, 1675 Broadway, Schenectady, N.Y.—A.C
WATERMAN PRODUCTS CO., 2445 Emerald St., Philadelphia 25, Pa.—A.C.E
 Waters Mfg. Inc., 4 Gordon St., Waltham 54, Mass.—D
 Wickes Eng'g. & Const. Co., 12th St. & Ferry Ave., Camden, N.J.—A

46—MEASUREMENT & TEST EQUIPMENT—SPECIAL PURPOSE

Attenuators, A-F	A
Attenuators, logarithmic	B
Attenuators, R-F	C
Barretors	D
Bolometers	E
Cabinets, temperature test	F
Callibrators	G
Cameras, oscilloscope recording	H
Chronographs	I
Combustion test equipment	AA
Comparators	J
Color equipment	M
Converters, frequency	K
Delay lines	L
Direction finders	AR
Filters	T
Frequency measuring equipment	N
Integrators	U
Instrument parts	V
Inverters	W
Lenses	X
Lights, neon test	Y
Locators, interference	Z
Microwave test equipment	AO
Multivibrators	AB
Optical equipment	O
Pressure measuring equipment	P
Probes	AC
Pulse equipment	AS
Radar test sets	AP
Recorders, frequency response	AD
Regulators	AE
Screen rooms	AF
Slotted lines	AQ
Specialties, capacitor	AG
Specialties, inductance	AH
Specialties, resistance	AI
Spectrographic equipment	Q
Spring testing equipment	R
Stroboscopes	AJ
Synchrosopes	AK
Thermocouples	AL
Tracers, signal	AM
Tuning forks	AN
Vibration measuring equipment	S

Ace Eng'g. & Machine Co., 3644 N. Lawrence St., Philadelphia 40, Pa.—AF
 Acme Scientific Co., 1450 W. Randolph St., Chicago 7, Ill.—O
 Advance Electronics Co., 8510 N. End Ave., Oak Park 37, Mich.—T
 Advance Electronics Co., 451 Highland Ave., Passaic, N.J.—L.N
 Advance Electronics, Inc., 94 Silas Deane Hwy., Rocky Hill, Conn.—S
 Aero Electronics Co., 1512 N. Wells St., Chicago 10, Ill.—I.J.O
 Aerolite Electronics, 507 26th St., Union City, N.J.—L
 Aerolux Light Corp., 653 11 Ave., New York 36, N.Y.—O.Y.AJ
 Affiliated Photographic Co., 21 W. 45 St., New York 19, N.Y.—O
 Airborne Instruments Laboratory, 160 Old Country Rd., Mineola, L.I., N.Y.—C
AIRTRON, INC., 1109 W. Elizabeth Ave., Linden, N.J.—K.AO
 Airtronix Development Corp., 20 W. 22 St., New York 10, N.Y.—AF
 Alco Electronics Mfg. Co., 3 Wolcott Ave., Lawrence, Mass.—AE
ALDEN PRODUCTS CO., 117 N. Main St., Brockton 64, Mass.—Y
 Allied Intl. Inc., 230 Park Ave., New York 17, N.Y.—N
 American Chronoscope Corp., 316 W. 1st St., Mount Vernon, N.Y.—I.N
 American Engineering Corp., 2040 Colo. Ave., Santa Monica, Calif.—C.G.N.AB
 American Instrument Co., Silver Spring, Md.—F.H
American Optical Co., Buffalo 15, N.Y.—M.O.Q.X

American Radio Co., 445 Park Ave., New York 22, N.Y.—AO.AP
AMERICAN TELEVISION & RADIO CO., 300 E. 4th St., St. Paul 1, Minn.—W
 American Thermo-Electric Co., 198-11 Hollis Ave., Hollis 12, N.Y.—AL
 Amplifier Corp. of America, 398 Broadway, New York 13, N.Y.—T
 Anchor Electronics, Inc., 717 Sip St., Union City, N.J.—V.AH
 Andersen Labs., Inc., 39 Talcott Rd., W. Hartford 10, Conn.—G.L.T.U.AB.AP
ANDREW CORP., 363 E. 75 St., Chicago 19, Ill.—AQ
 Applied Research Labs., P.O. Box 1710 Glendale, Calif.—Q
 Arenberg Ultrasonic Lab., 94 Green St., Jamaica Plain 30, Mass.—C.L
 Atomic Instrument Co., 84 Mass. Ave., Cambridge 39, Mass.—N
 Audio Instrument Co., 133 W. 14 St., New York 11, N.Y.—B
 Austin Co., Special Devices Div., 76 9 Ave., New York 11, N.Y.—I.U
 Authorized Mfrs. Service Co., 919 Wyckoff Ave., Brooklyn 27, N.Y.—S
 Auto-Test, Inc., 600 S. Michigan Ave., Chicago 5, Ill.—Y.AA
 Avion Instrument Corp., 299 State Hwy. #17, Paramus, N.J.—K.O.AE
 Avionex Electronics Corp., 2838 N. Naomi St., Burbank, Calif.—AR
 Bache & Co., Semon, 636 Greenwich St., New York 14, N.Y.—X
 Baird Associates, Inc., 33 University Rd., Cambridge 38, Mass.—Q
 Baldwin-Lima-Hamilton Corp., Philadelphia 42, Pa.—F.G.R.S
 Ballantine Labs., Inc., 100 Fanny Rd., Bonton, N.J.—W
 Barker & Williamson, Inc., 237 Fairfield Ave., Upper Darby, Pa.—K.L.N.T
 Barlow Electrical Mfg. Co., 155 E. 128 St., New York 35, N.Y.—C
 Barnes Devel. Co., 213 W. Baltimore Pk., Lansdowne 2, Pa.—AG.AH.AI
 Bar-Ray Products, Inc., 209 25 St., Brooklyn 32, N.Y.—N
 Bassett, Inc., Rex, 1314 N.E. 17 Ct., Fort Lauderdale, Fla.—N.AB
 Watson Electronics Corp., J. A., 1031 9. 27 St., Omaha, Neb.—Y.AC
 Bausch & Lomb Optical Co., 628 St. Paul St., Rochester, N. Y.—J.O.Q.X
 Bayside Watch Tool Co., 20-02 Utopia Parkway, Whitestone 57, N.Y.—V
 Beam Instruments Corp., 350 5 Ave., New York 1, N.Y.—H.A.G.A.L
 Beckman & Whitley, Inc., 985 San Carlos Ave., San Carlos, Calif.—P.AA
 Bell Television Inc., 254 W. 54th St., New York 19, N.Y.—G.T
 Beluck Instrument Corp., 111-01 14th Ave., College Point 56, N.Y.—V
 Berkeley Div., Beckman Instruments, Inc., 2200 Wright Ave., Richmond 3, Calif.—I, K.N.P.AI
 Berkshire Labs., 586 Beaver Pond Rd., Lincoln, Mass.—AJ
 Biddle Co., James G., 1316 Arch St., Philadelphia 7, Pa.—N
BILLEY ELECTRIC CO., Union Station Bldg., Erie, Pa.—I
BOGART MFG. CORP., 315 Seigel St., Brooklyn 6, N.Y.—C.A.C.AO.AP
 Bone Eng'g. Corp., 701 W. Broadway, Glendale 4, Calif.—S
 Borden Eng'g. Co., 63 Clinton Ave., New Providence, N.J.—J
BURNS LABS., 6135 Magnolia Ave., Riverside, Calif.—P
 Bowen & Co., 4712 Bethesda Ave., Bethesda, Md.—O.V.AN
 Bowser Tech. Refrigeration, Div. Bowser Inc., Terryville, Conn.—F
 Bram Chemical Co., 820-65 Ave., Philadelphia 26, Pa.—AI
BREW & CO., RICHARD D., 106 Concord Ave., Belmont 78, Mass.—L
 Bristol Eng'g. Corp., Bristol, Pa.—AP
 British Electronic Sales Co., 23-03 45th Rd., Long Island City 1, N.Y.—A.B.C.O.X.A.F. AI
 Budd-Stanley Co., 43-01 22nd St., Long Island City 1, N.Y.—C.A.C.AO
 Rudelman Radio Corp., 375 Fairfield Ave., Stamford, Conn.—NAO
 Buhl Optical Co., 1009 Beech Ave., Pittsburgh 12, Pa.—O.X
 Runnell & Co., J., 81 Prospect St., Brooklyn 1, N.Y.—AN
BURKE & JAMES, INC., 321 S. Wabash Ave., Chicago 4, Ill.—H.O.X
BURNELL & CO., 45 Warburton Ave., Yonkers, N.Y.—L.T.AH
BURROUGHS CORP., Electronic Instruments Div., 1209 Vine St., Philadelphia 7, Pa.—MAS
 Calidyne Co., 120 Cross St., Winchester, Mass.—S
 Cal-Tronics Corp., 11307 Hindry Ave., Los Angeles 45, Calif.—AO.AP
 Capitol Stage Lighting Co., 527 W. 45th St., New York 36, N.Y.—X
 Carlson & Nicholson Inc., 497 Maynard Dr., Buffalo 21, N.Y.—J
 Cascade Research Corp., 53 Victory Lane, Los Gatos, Calif.—AO
 Central Eng'g. Corp., 560 Providence Highway, Norwood, Mass.—P

Central Research Labs., Inc., Red Wing, Minn.—AO.AP
 Century Electronics, 14844 Oxnard St., Van Nuys, Calif.—CAO
 Century Geophysical Corp., 1333 N. Utica, Tulsa, Okla.—P.S
CENTURY METALCRAFT CORP., 14806 Oxnard St., Van Nuys, Calif.—Q
 Chatham Electronics Corp., 630 W. Mt. Pleasant Ave., Livingston, N.J.—W
 Chicago Industrial Instrument Co., 536 W. Elm St., Chicago 10, Ill.—AL
 Clark Crystal Co., 2 Farm Rd., Marlboro, Mass.—K.N
 Clary Multiplier Corp., 408 Junipero St., San Gabriel, Calif.—AE
 Clegg Laboratories, Inc., 142 S. Livingston Ave., Livingston, N.J.—J.L.M.AB.AE.AG.AH.AI
 Coast Coil Co., 5352 W. Wash. Blvd., Los Angeles 16, Calif.—T
 Cole Instrument Co., 1320 S. Grand Ave., Los Angeles, Calif.
 Color Television Inc., 973 E. San Carlos Ave., San Carlos, Calif.—AO
 Colortone Electronics, 238 William St., New York 38, N.Y.—G.N
 Communication Measurements Lab., Inc., 350 Leland Ave., Plainfield, N.J.—L
 Computer Control Co., 106 Concord Ave., Belmont 78, Mass.—L
 Computer Corp. of America, 149 Church St., New York 7, N.Y.—G.U.AE
 Conn. Ltd., C. G., 1101 E. Beardsley Ave., Elkhart, Ind.—N
 Consolidated Eng'g. Corp., 300 N. Sierra Madre Villa, Pasadena 15, Calif.—G.P.Q.S
 Control Devices Inc., 9918 Charlevoix Ave., Detroit 14, Mich.—AI
 Control Electronics Co., 1925 New York Ave., Huntington Station, N.Y.—L.T
CONTROL ENG'G., 560 Providence Highway, Norwood, Mass.—P
 Creative Eng'g. Corp., 10816 Burbank Blvd., N. Hollywood, Calif.—L
 Cubic Corp., 2841 Canon St., San Diego 6, Calif.—AO.AP
 Custom Electronics Corp., 738 Speedwell Ave., Morris Plains, N.J.—G
 Dante Electric Mfg. Co., P. O. Box 6, Bantam, Conn.—Y
 Daven Co., 191 Central Ave., Newark 4, N.J.—A.B.C.L.AI
 Davies Labs., Inc., 4705 Queensbury Rd., Riverdale, Md.—AD
 Decade Instrument Co., Box 153, Caldwell, N.J.—K.N
 Delaware Optical Labs., 36 Williams St., Fernwood, Pa.—H.I.M.O.Q.V.X
 Demco Products, P.O. Box 5042, Philadelphia 11, Pa.—L
 DeMorney-Bonardi, Inc., 780 S. Arroyo Pkway, Pasadena, Calif.—CAO
DIAMOND MICROWAVE CORP., 7 North Ave., Wakefield, Mass.—NAO
 Digital Instrument Co., 212 Almeria Ave., Coral Gables, Fla.—G.I.N.AB
 DuAll Co., 254 N. Laurel Ave., Des Plaines, Ill.—G.J
 Dorn Equipment Corp., 88 Broad St., Boston 10, Mass.—X
 Douglas Microwave Co., 11 Beechwood Ave., New Rochelle, N.Y.—C.A.CAO
 Dressen-Barnes Corp., 250 N. Vinelo Ave., Pasadena 8, Calif.—AE
 Drive-In-Theater Mfg. Co., 505 W. 9th, Kansas City, Mo.—T
 Dubrow Development Co., 235 Penn St., Burlington, N.J.—N.T.U
DUMONT LABS., INC., Allen B., TV Transmitter Dept., Mobile Comm. Dept., 1500 Main St., Clifton, N.J.—C.I.M.N
DUMONT LABS., INC., Allen B., Instrument Div., 760 Bloomfield Ave., Clifton, N.J.—G.H.AK
DUMONT LABS., INC., Allen B., 2 Main Ave., Passaic, N.J.—H.N
 Dwyer Mfg. Co., F. W., 317 S. Western Ave., Chicago 12, Ill.—P.AA
 Eder Engineering Co., 1568 S. 1st St., Milwaukee 4, Wis.—V
EDISON INC., THOMAS A., Instrument Div., Lakeside Ave., W. Orange, N.J.—AC
 Eicor, Inc., 1501 W. Congress St., Chicago 7, Ill.—W
 Eldi Electronic Devices, 204 W. Houston St., New York 14, N.Y.—AC
 Electric Eye Equipment Co., 6 W. Fairchild St., Danville, Ill.—AJ
 Electrodyne Co., Endicott St., Norwood, Mass.—H
 Electrofilm Inc., 7116 Laurel Canyon Blvd., N. Hollywood, Calif.—AL
 Electro Impulse Lab., 62 White St., Red Bank, N.J.—G.N.AO.AP
 Electro-Medical Lab., 1 Hoop-print Trail, S. Woodstock 10, Vt.—H.I
 Electrometric Inc., Box 107, Woodstock, Ill.—I
 Electronic Brazing Co., 140 Glenridge Ave., Montclair, N.J.—AJ
 Electronic Measurements Co., Lewis St., & Maple Ave., Eatontown, N.J.—AJ
 Electronic Systems Co., 578 E. 161 St., New York 56, N.Y.—L.T
ELECTRONIC TUBE CORP., 1200 E. Mermaid Lane, Philadelphia 18, Pa.—H
 Electron-Radar Products, 1041 N. Pulaski Rd., Chicago 51, Ill.—A.C.A.L.AP

Electro-Physics Co., 287 Broadway, New York
 N.Y.—M
ELECTRO-PRODUCTS LABS., INC., 4501 N.
 Ravenswood Ave., Chicago, Ill.—P.S
 Electro-Tech Equip. Co., 308 Canal St., New
 York, N.Y.—J.A.A.A.I.
 Electrotech Corp., 15601 Arrow Hwy.,
 Azusa, Calif.—AK
 Electro-Technics, Inc., 198 Albion Ave., Pater-
 son, N.J.—A.B.J.T.A.H
 Elk Electronic Labs., Inc., 333 W. 52 St., New
 York 19, N.Y.—A.C.K.P
 Ellison Draft Gage Co., 548 W. Monroe St., Chi-
 cago 6, Ill.—P
 Elm Labs., 18 S. Broadway, Dobbs Ferry,
 N.Y.—N
 El-Rad Mfg. Co., 2800 W. Cullom, Chicago 18,
 Ill.—I
 El-Tronics, Inc., 5 & Noble Sts., Philadelphia
 23, Pa.—I.N.A.I
 Emeloid Co., 1239 Central Ave., Hillside, N.J.
 —X
 Empire Devices, Inc., 38-25 Bell Blvd., Bay-
 side 61, N.Y.—C.A.O
 Empire State Labs., 2608 Merrick Rd., Bell-
 more, L.I., N.Y.—I.T
 Endevo Corp., 689 S. Fair Oaks Ave., Passa-
 dena 2, Calif.—S.A.J
 Eng'g. Associates, 434 Patterson Rd., Dayton
 9, Ohio—A.K.A.O.A.P
 Engis Equipment Co., 431 S. Dearborn St.,
 Chicago 5, Ill.—O
 Equipment & Service Co., 6815 Oriole Dr.,
 Dallas 9, Texas—A.B.C.G.N.T.A.A.A.F
 Erwood, Inc., 1770 Berceau Ave., Chicago 13,
 Ill.—S
 Esc Corp., 578 E. 161st St., New York 56,
 N.Y.—I.T
 Esco Mfg. Co., Box 344, Summit, Ill.—AJ
 Federal Mfg. & Eng'g. Corp., 211 Steuben
 St., Brooklyn 5, N.Y.—B
FEDERAL TELECOMMUNICATION LABS.,
 500 Washington Pl. Nutley, N.J.—AO
 Feiler Eng'g. & Mfg. Co., 8026 N. Monticello
 Ave., Skokie, Ill.—A.C.G.H.A.C.A.G.A.I.A.K.
 AM
 Fenwal Inc., Pleasant St., Ashland, Mass.—
 AL
 Ferris Instrument Co., 110 Cornelia St.,
 Boonton, N.J.—G
 Field Electrical Instrument Co., 8 N. Manheim
 Blvd., New Paltz, N.Y.—N.A.L
 Fielden Instrument Co., 2920 N. 4th St.,
 Philadelphia 33, Pa.—J.P.A.G.A.L.A.L
 Fish-Schurman Corp., 70 Portman Rd., New
 Rochelle, N.Y.—O.X
 Flader Inc., Fredrick, 583 Division St., N.
 Tonawanda, N.Y.—P
 Flott Laboratory, 3711 Marshall Rd., Drexel
 Hill, Pa.—O
 Foxboro Co., 38 Neponset Ave., Foxboro,
 Mass.—P.A.L
 Franklin Electronics Inc., 415 W. Pike St.,
 Philadelphia 40, Pa.—G.H.S.A.P
FREED TRANSFORMER CO., 1718 Weirfield
 St., Brooklyn 27, N.Y.—T.A.H
 Frequency Standards, P. O. Box 504, Asbury
 Park, N.J.—N
 F-R Machine Works, Electronics & X-Ray
 Div., 44-14 Astoria Blvd., Long Island City
 3, N.Y.—C.N.A.O
 Furst Electronics, 3322-A W. Lawrence Ave.,
 Chicago 25, Ill.—N
GATES RADIO CO., 123 Hampshire St.,
 Quincy, Ill.—N
 General Cement Mfg. Co., 919 Taylor Ave.,
 Rockford, Ill.—Y
GENERAL COMMUNICATION CO., 681
 Beacon St., Boston 15, Mass.—N.A.O.A.P
 General Devices, Inc., P.O. Box 253, Prince-
 ton, N.J.—G.J
GENERAL ELECTRIC CO., Lamp Div., Nela
 Park, Cleveland 12, Ohio—Y
GENERAL ELECTRIC CO., Apparatus Div., 1
 River Rd., Schenectady 5, N.Y.—M.U.S.W.
 AL
 General Electronics, Inc., 32 W. 22 St., New
 York 10, N.Y.—Z
 General Hermetic Sealing Corp., 99 E. Haw-
 thorne Ave., Valley Stream, L.I., N.Y.—L
GENERAL RADIO CO., 275 Mass. Ave., Cam-
 bridge 39, Mass.—A.C.E.H.N.S.T.A.B.A.J.A.N.
 AO
 General R-F Fittings Co., 702 Beacon St., Bos-
 ton 15, Mass.—C.A.C
 Genisco, Inc., 2233 Federal Ave., Los Angeles
 64, Calif.—S
GERTSCH PRODUCTS INC., 11846 Miss. Ave.,
 Los Angeles 25, Calif.—N.T.A.O
 Gillilan Bros., 1815 Venice Blvd., Los An-
 geles 6, Calif.—AO
 Gilmore Industries, Inc., 5713 Euclid Ave.,
 Cleveland 3, Ohio—P
 Glenco Corp., Durham Ave., Metuchen, N.J.
 —AG.A.I
 G & M Equipment Co., 7315 Varna Ave., Holly-
 wood, Calif.—N.A.F.A.K.A.O.A.P
 Gorrell & Gorrell, Hawthorth, N.J.—V
 Gotham Instruments Div., American Machine
 & Metals, Sellersville, Pa.—P
 Gow-Mac Instrument Co., 100 Kings Rd.,
 Madison, N.J.—AA
 Granco Products, Inc., 36-17 20 Ave., Long Is-
 land City 5, N.Y.—K.N
 Grason-Stadler Co., 106 Hampshire St.,
 Cambridge 39, Mass.—O
 Grass Instrument Co., 101 Old Colony Ave.,
 Quincy 70, Mass.—H
 Greenleaf Mfg. Co., 7814 Maplewood Ind. Ct.,
 St. Louis 17, Mo.—P

ELECTRONIC INDUSTRIES DIRECTORY

Grieve-Hendry Co., 1815 W. Lake St., Chi-
 cago 12, Ill.—F
GUDEMAN CO., 9200 Exposition Blvd., Los
 Angeles 34, Calif.—L.T
 Gulton Mfg. Corp., 212 Durham Ave., Me-
 tuchen, N.J.—L.P.S.T.A.C.A.G.A.I
 Gundlach Mfg. Co., 38 E. Main St., Fairport,
 N.Y.—O.X
 G. W. Associates, P. O. Box 2263, El Segundo,
 Calif.—G.A.O
 Harder Co., Donald C., 3338 India St., San
 Diego 1, Calif.—L.T
 Hathaway Instrument Co., 1315 S. Clarkson
 St., Denver 10, Colo.—P.S.A.N
 Hewlett-Packard Co., 395 Page Mill Rd., Palo
 Alto, Calif.—A.E.N.A.O.A.P
 Hill Electronic Eng'g & Mfg. Co., New
 Kingstown, Pa.—N
 Hillyer Instrument Co., 54 Lafayette St.,
 New York 13, N.Y.—AP
HI-Q DIV., AEROVOX CORP., Olean, N.Y.—
 L.T.A.I
 Hoke, Inc., 136 S. Dean St., Englewood, N.J.
 —P
 Huppert Co., K. H., 6830 Cottage Grove Ave.,
 Chicago 37, Ill.—AL
 Hyeon Mfg. Co., 2961 E. Colo. Blvd., Pasadena
 8, Calif.—H.I.N.A.J.A.O
 Hyeor Co., 11423 Vanowen St., N. Hollywood,
 Calif.—AH
 Impedance Inc., 9 Alan St., Framingdale, L.I.,
 N.Y.—AO
 Industrial Devices, Edgewater, N.J.—Y
 Industrial Electronics, Inc., 8060 Wheeler
 St., Detroit 10, Mich.—P
 Industrial Television, 369 Lexington Ave., Clif-
 ton, N.J.—K.L.M.T
 Industrial Test Equipment Co., 55 E. 11th
 St., New York 3, N.Y.—J
 Instrument Development Labs., 163 Highland
 Ave., Needham Heights 94, Mass.—M
 Insuline Corp. of America, 185 Granite St.,
 Manchester, N.H.—AD.A.O.A.P
 International Research Associates, 2221 War-
 wick Ave., Santa Monica, Calif.—C.L.P.T.U
**INTERNATIONAL RESEARCH & DEVELOP-
 OPMENT CORP.**, 168 E. Hosack St., Col-
 umbus 7, Ohio—S.A.J
 Jacobs Instrument Co., 4718 Bethesda Ave.,
 Bethesda 14, Md.—L
JAMES KNIGHTS CO., Sandwich, Ill.—N
 Jarrell-Ash Co., 165 Newbury St., Boston 16,
 Mass.—O.Q.X
J-R INSTRUMENTS, 441 Chapel St., New
 Haven, Conn.—N.A.L
JENNINGS RADIO MFG. CO., P. O. Box 1278,
 San Jose 8, Calif.—AG
 Jerold Electronics Corp., 26 & Dickinson
 Sts., Philadelphia 46, Pa.—C
 Jiffy Clip Mfg. Co., 128 Clinton Ave., Hunting-
 ton, N.Y.—AC
 Kalhell Labs., 1090 Morena Blvd., San Diego
 10, Calif.—A.B.G.I.A.E
KAY ELECTRIC CO., 14 Manle Ave., Pine
 Brook, N.J.—A.C.M.N.S.A.O.A.P
 Kearfott Co., 1378 Main, Clifton, N.J.—U
KEYLOG SWITCHBOARD & SUPPLY CO.,
 79 W. Monroe St., Chicago 3, Ill.—A
 Keystone Electronics Corp., 423 Broome St.,
 New York 12, N.Y.—Y.A.C
 Kings Electronics Co., 40 Marbledale Rd.,
 Tuckahoe, N.Y.—A.B.C.E.L.A.C.A.O.A.P
 Kings Microwave Co., 719 Main St., New Ro-
 chelle, N.Y.—N
KOLLSMAN INSTRUMENT CORP., 80-0R 45
 Ave., Elmhurst 73, N.Y.—N
 Kybernetes Corp., 1100 Raymond Blvd., New-
 ark 5, N.J.—S
 L. A. B. Corp., East Onondaga St., Skane-
 ateles, N.Y.—S
 Lab. for Electronics, Inc., 75 Pitts St., Boston,
 Mass.—L.A.K.A.P
 LaMotte Chemical Products Co., Baltimore 4,
 Md.—J
 Lavoie Labs., Inc., Morganville, N.J.—G.N.A.K
 Lear, Inc., 11916 W. Pico Blvd., Los Angeles
 64, Calif.—W
LEE ELECTRONIC LABS., INC., 233 Dud-
 ley St., Boston 19, Mass.—AG.A.I
LePace Mfg. Co., 75-19 64th St., Glendale 27,
 N.Y.—T
 Lerner Instrument & Electronics Mfg. Corp.,
 G P O Box 620, Brooklyn 1, N.Y.—AI
LIBRASCOPE INC., 1607 Flower St., Glen-
 dale 1, Calif.—O.U
 Lieco, Inc., 147 Ocean Ave., Lynbrook, N.Y.—
 AO.A.P
 Lindgren & Associates, 4515 N. Ravenswood
 Ave., Chicago 40, Ill.—AF
 Linear Equipment Labs., Brightwater Pl.,
 Massapequa, N.Y.—AC
 Link Aviation, Inc., Binghamton, N.Y.—J
 Loral Electronics Corp., 794 E. 140 St., New
 York 54, N.Y.—N
 Lvsco Mfg. Co., 1401 Clinton, Hoboken, N.J.—K
 MacLeod & Hanopol, 10 Roland St., Charles-
 town, Mass.—AG.A.I
 Magne-Pulse Corp., 140 Nassau St., New York
 38, N.Y.—L.A.D

Magnetic Instrument Co., 82 Main St.,
 Orange, N.J.—L.T.A.E
Magnex Corp., 90-28 Van Wyck Expressway
 Jamaica 18, N.Y.—J.O.P.V.A.H
 Manning Maxwell & Moore, 250 E. Main St.,
 Stratford, Conn.—P
 Manson Labs., 207 Greenwich Ave., Star-
 ford, Conn.—AP
MANUFACTURERS ENG'G & EQUIP. CORP.
 York & Mill Rds., Hatboro, Pa.—E.M.Q
 Marconi Instruments Ltd., 23 Beaver St., New
 York 4, N.Y.—N.A.O.A.P
 Marion Electrical Instrument Co., Manche-
 ster, N.H.—V
 Masco Products Co., 2119 S. Sepulveda Blvd.,
 Los Angeles 25, Calif.—V
Massa Labs., Inc., 5 Fottler Rd., Hingham
 Mass.—S
Master Appliances, Inc., 1600 Factory Ave.,
 Marion, Ohio—Y
 Maxson Corp., W. L., 460 W. 34th St., New
 York 1, N.Y.—AE.A.P
May Eng'g. Co., 6055 Lankershim Blvd.,
 Hollywood, Calif.—L
MB Mfg. Co., 1060 State St., New Haven 1,
 Conn.—G.S
 McShan Development Corp., 71 Murray St.,
 New York 7, N.Y.—J
MEASUREMENTS CORP., Boonton, N.J.—
 C.D.G
 Menlo Research Lab., P. O. Box 522, Menlo
 Park, Calif.—J
 Mercury Electronic Co., Box 450, Red Bank,
 N.J.—A.C.A.F.A.J
 Metal Products Co., Craighead St., Nashville
 4, Tenn.—P
 Metrotype Corp., 6100 Archer Rd., Summit
 Ill.—N.U
 Meyer-Opticraft, Inc., 39 W. 60 St., New York
 23, N.Y.—O.V.X
 Microlab, Inc., 71 Okner Pkwy., Livingston,
 N.J.—C.T.A.O
 Microwave Devel. Labs. Inc., 22D Grove St.,
 Waltham 54, Mass.—C
 Midwest Eng'g. Devel. Co., 3648 State Line
 Kansas City 3, Kansas—N.A.O
Mil Instrument Corp., 92-15 172 St., Jamaica
 33, N.Y.—AM
 Millen Mfg. Co., James, 150 Exchange St.,
 Malden, Mass.—L.A.K
MILLIVAC INSTRUMENT CORP., 444 2 St.,
 Schenectady, N.Y.—W.A.C
 Minneapolis-Honeywell Regulator Co., Min-
 neapolis 8, Minn.—AL
 Mission-Western Engineers, 132 W. Colorado
 St., Pasadena, Calif.—K
 Multi-Tron Laboratory, 4624 W. Washington
 Blvd., Chicago 44, Ill.—M.O.X
 Munatun Mfg. & Service Inc., Beech St.,
 Philip, N.Y.—A.N.A.P
 Murphy & Miller, Inc., 1324 S. Michigan
 Ave., Chicago 5, Ill.—F
 Nassau Research & Development Associates,
 66 Main St., Mineola, N.Y.—C.D.E.N.A.O.
 AO.A.P
 National Capacitor Co., 585 Washington St.,
 Quincy 69, Mass.—I.T
 National Electrical Machine Shops, 919 Jesus
 Blair Dr., Silver Spring, Md.—P
 Nichols Products Co., 325 W. Main St.,
 Moorestown, N.J.—AC.A.P
 Norram Labs., Ernst, Williams Ray, Wil-
 —W
 Northeastern Eng'g. Inc., Belford St., Man-
 chester, N.H.—AO
 Northern Radio Co., 143 W. 22nd St., New
 York 11, N.Y.—N
 Olympic Development Co., Div., Olympic Ra-
 dio & Television Corp., 30 Commerce Rd.,
 Stamford, Conn.—E.O.X
 OMCO Test Equip., Box 196, N. Las Vegas,
 Nev.—AC.A.E.A.I
 Ossian Mfg. Co., Box 151A, RR 2, Ossian,
 Ind.—L
 Owen Labs., 412 Woodward Blvd., Pasadena
 10, Calif.—G
 Pacific Mercury TV Mfg. Corp., 5955 Van
 Nuys Blvd., Van Nuys, Calif.—M.S.A.O.A.P
 Pacific Transducer Corp., 11921 W. Pico Blvd.,
 Los Angeles 64, Calif.—O
 Pacific Universal Products Corp., 168 Vista
 Ave., Pasadena 8, Calif.—H.O.X
 Pancro Mirrors, Inc., 2958 Los Feliz Blvd.,
 Los Angeles 39, Calif.—X
 Panoramic Radio Products, 10 S. 2 Ave., M
 Vernon, N.Y.—AD.A.O
 Pantek Co., 208 42 St., Manhattan Beach
 Calif.—AJ
 Par Products Corp., 926 N. Citrus Ave.,
 Hollywood 38, Calif.—O.V.X
 Penberthy Instrument Co., 666 Adams St.,
 Seattle 8, Wash.—O
 Penn Industrial Instrument Corp., 4110 Haver-
 ford Ave., Philadelphia 4 Pa.—P
 Penna Testing Lab., Doylestown, Pa.—AG
 Perkin Eng'g. Corp., 345 Kansas St., El
 Segundo, Calif.—AF
 Peschel Electronics, Inc., 13 Garden St., Ne-
 Rochelle, N.Y.—AE
 Peters Co., O. S., 1353 N.Y. Ave., N.E., Wash-
 ington 2, D.C.—G.J.K.N.A.B
PHAOSTRON CO., 151 Pasadena Ave.,
 Pasadena, Calif.—V. AC. AI
 Phila. Scientific Glass Co., 4 Eckard Ave., Al-
 ington, Pa.—F
 Philamon I abs., Inc., 5717 3 Ave., Brooklyn 2,
 N.Y.—AN
 Philbrick Researchers, Inc., Geo. A., 230 Cor-
 greess St., Boston 10, Mass.—U

ILCO CORP., Gov'l & Industrial Div., 700 Wissahickon Ave., Philadelphia 44, Pa.—M.A.O.
 ILCO CORPORATION Accessory Div., 400 & Allegheny Ave., Philadelphia 34, Pa.—C
 Lenix Precision Instrument Co., 3803 N. St., Philadelphia 40, Pa.—E.O.Q.V.AE
 Leonard & Burns, 240 Highland Ave., Needham 94, Mass.—E
 LARAD ELECTRONICS CORP., 100 Metropolitan Ave., Brooklyn 11, N.Y.—C.M.A.O.A.P.
 LYTECHNIC RESEARCH & DEVELOPMENT CO., 202 Tillary St., Brooklyn 1, N.Y.—A.C.D.E.N.A.O.A.P.
 Le Instruments Inc., 150 Express St., Dallas, Tex.—J
 Lester Instrument Co., 115 Cutter Mill Rd., Great Neck, N.Y.—I.K.N.A.B
 Leukica Co., 48 W. 29 St., New York 1, N.Y.—H
 Leise Measurements Co., 942 Kings Highway, Brooklyn 23, N.Y.—Q.W.X.A.C
 Leision Apparatus Co., 92-27 Horace Harding Blvd., Elmhurst, N.Y.—A.C
 Leision Products, 719 7 St. N.W., Washington, D.C.—O.X
 Leision Scientific Co., 3737 W. Cortland St., Chicago 47, Ill.—F.A.E
 Lemier Instrument Corp., 52 W. Houston St., New York 12, N.Y.—C
 Lemoss Wireless Labs., Inc., 25 Prospect Pl., W. Newton 65, Mass.—A.O
 Lemoss & Instruments, 15 Stone Ave., Brooklyn 33, N.Y.—O.Q
 LEO-S Corp., 29 W. 60 St., New York 23, N.Y.—O
 Leo City Products Co., 101 West 31 St., New York 1, N.Y.—A.P
 RADIO CORP. OF AMERICA, RCA VICTOR DIV. ENGG. PRODUCTS DIV., Camden 2, N.J.—N.A.O
 RADIO CORP. OF AMERICA, RCA TUBE DEPT., 415 S. 5 St., Harrison, N.J.—G, M.A.C
 Radio Frequency Labs., Inc., Boonton, N.J.—G
 Rawson Electrical Instrument Co., 117 Potter St., Cambridge 32, Mass.—G.A.L
 Rawson Found Co., 35-54 36 St., Long Island City 1, N.Y.—A.O
 Refrigeration Systems Inc., 646 W. Wash. Blvd., Chicago 6, Ill.—F
 Regulator Eng'g. & Devel. Co., 11545 W. Jefferson Blvd., Culver City, Calif.—A.E
 Reuter Electronics Corp., 152 W. 25th St., New York 1, N.Y.—A.C
 Ressel Eng'g., 2351 Riverside Dr., Los Angeles 39, Calif.—K.W.A.P
 R.F.I. Shielded Enclosures Corp., 3634 N. Lawrence St., Philadelphia 40, Pa.—A.F
 Richards Co., Arklay S., 37 Winchester St., Newton Highlands 61, Mass.—A.L
 Riverbank Labs., Batavia Ave., Geneva, Ill.—A.N
 Robinette Co., W. C., 802 Fair Oaks Ave., S. Pasadena, Calif.—A.E
 Rosch Co. D. J., 2200 S. Figueroa St., Los Angeles 7, Calif.—A.I
 Rollan Co., Rt. 1 & Camp Meeting Rd., Topsfield, Mass.—C.A.C
 Rubin Co., Ridge Ave. at 35th St., Philadelphia 32, Pa.—G.V
 Rutherford Electronics Co., 3707 S. Robertson Blvd., Culver City, Calif.—G
 Rutishauser Corp., 490 S. Fair Oaks Ave., Pasadena 1, Calif.—P
 Ryan Industries Inc., 19159 John R St., Detroit 3, Mich.—S
 Safe Flight Instrument Corp., 4 Water St., White Plains, N.Y.—S
 SAMPSON CHEMICAL & PIGMENT CORP., 30 W. Lake St., Chicago 12, Ill.—Y
 Sanders Associates, Inc., 137 Canal St., Nashua, N.H.—J
 Scientific Associates, Inc., 580 Virginia Ave., E., Atlanta, Ga.—A.O
 Scientific Specialties Corp., Snow & Union St., Brighton 35, Mass.—O
 Seismograph Service Corp., 701 Kennedy Bldg., Tulsa, Okla.—H.S.A.D
 Selective Research Instrument Corp., 9 Elm St., Mt. Vernon, N.Y.—G.N.A.C.A.I.A.L
 Selco Corp. of America, 2020 Jericho Tpke., New Hyde Park, L.I., N.Y.—E.K.N
 SELCROSS MFG. CO., 520 Pusey Ave., Hingdale, Pa.—A.C.L
 SELDING, INC., Riverside Park, N.J.—A.F
 Selup Eng'g. Co., 221 E. Cullerton St., Chicago 16, Ill.—S
 Sierra Electronic Corp., 1050 Brittan Ave., San Carlos, Calif.—E.A.O
 Silitie Inc., 37-41 Neptune Hwy., Neptune, N.J.—Y
 Sison Electric Co., 5208 W. Kinzie St., Chicago 44, Ill.—M
 Sorenson & Co., 375 Fairfield Ave., Stamford, Conn.—K.W.A.E
 Southwestern Industrial Electronics Co., 2831 1st Oak Rd., Houston, Tex.—A
 Southern Radio Television, 2400 E. Ganson St., Jackson, Mich.—N
 Special Products Co., 9115 Brookville Rd., Silver Spring, Md.—A.M
 Spencer-Kennedy Labs., 186 Mass. Ave., Cambridge 39, Mass.—T
 Sperry Gyroscope Co., Great Neck, L.I., N.Y.—D.E.G.N.A.O.A.P
 Square Root Mfg. Co., 391 Saw Mill River Rd., Yonkers, N.Y.—T.A.H

Standard Coil Products Co., 2329 N. Pulaski Rd., Chicago 39, Ill.—L.P.T
 Standard Electrical Products Co., 2240 E. 3rd St., Dayton 3, Ohio—A.E
 Standard Electric Time Co., 119 Logan St., Springfield 2, Mass.—N.A.J
 Standard Electronics Research Corp., 2 East End Ave., New York 21, N.Y.—A.H
 Staver Co., 41-51 N. Saxon Ave., Bay Shore, N.Y.—V
 Steiner-Ives Co., 483 Springfield Rd., Union, N.J.—A.A
 Sticht Co., Herman H., 27 Park Place, New York 7, N.Y.—A.I
 Stoddart Aircraft Radio Co., 6644 Santa Monica Blvd., Hollywood 38, Calif.—C
 STUPAKOFF CERAMIC & MFG. CO., Latrobe, Pa.—A.G
 Sub Zero Products, 3932 Reading Rd., Cincinnati 29, Ohio—F
 Supreme Inc., Greenwood, Miss.—A.M
 SYLVANIA ELECTRIC PRODUCTS, INC., 1740 Broadway, New York 19, N.Y.—A.K
 Syntonic Instruments, Inc., 100 Industrial Rd., Addison, Ill.—A.K
 Taco West Corp., 525 N. Noble St., Chicago 22, Ill.—A.L
 Tech Laboratories Inc., Bergen & Edsall Bldgs., Palisades Park, N.J.—A.B.C.T
 Technical Products Co., 19 N. Dunlap, Medical Center, Memphis 1, Tenn.—F.I.J.M.O., R.A.A.A.N
 Technicraft Laboratories, 1200 Main St., Thomaston, Conn.—C.G.A.O
 Technitrol Engineering Co., 2751 N. 4th St., Philadelphia 33, Pa.—I
 Techno Instrument Co., 6666 Lexington Ave., Los Angeles 38, Calif.—S
 TELECHROME INC., 88 Merrick Rd., Amityville, L.I., N.Y.—L.M
 Telectro Industries Corp., 35-16 37 St., Long Island City 1, N.Y.—G
 Telerad Mfg. Corp., 1440 Broadway, New York 18, N.Y.—N
 Telegreen Corp., 36 Grove St., New Canaan, Conn.—A.E
 Teletronics Lab., 54 Kinkel St., Westbury, L.I., N.Y.—G.N
 Telex Co., 217 Riverdale Ave., Yonkers, N.Y.—O
 Television Zoomer Corp., 500 5th Ave., New York 38, N.Y.—X
 TEL-INSTRUMENT CO., 728 Garden St., Carlstadt, N.J.—C.G.I.M.T.A.P
 Tenney Engineering Inc., 1090 Springfield Rd., Union, N.J.—F
 Tensitron, Inc., Pin Hill, Harvard, Mass.—A.K
 TEXAS INSTRUMENTS INC., 6000 Lemmon Ave., Dallas 9, Tex.—A.D.A.O.A.P
 Thompson Clock Co., H. C., 38 Federal St., Bristol, Conn.—N.O.R.V.Y.A.J.A.K
 Thompson Products Inc.—Electronics Div., 2196 Clarkwood Rd., Cleveland 3, Ohio—C
 Times Facsimile Corp., 540 W. 54th St., New York 19, N.Y.—A.N
 T.L.G. Electric Corp., 31 W. 27th St., New York 1, N.Y.—A.P
 Trad Television Corp., 1001 1 Ave., Asbury Park, N.J.—C
 United Transformer Co., 150 Varick St., New York 13, N.Y.—L.T.A.H
 Transformers Inc., 532 North St., Endicott, N.Y.—T
 Transformer Technicians Inc., 2608 N. Cicero Ave., Chicago 39, Ill.—T
 Ultra-Violet Products, 145 Pasadena Ave., S. Pasadena, Calif.—Y
 U.M. & F. Mfg. Corp., 10929 Van Owne St., N. Hollywood, Calif.—L.Q.A.I
 Universal Electronics Co., 2012 S. Sepulveda Blvd., Los Angeles 25, Calif.—A.E
 Universal Microwave Corp., 380 Hillside Ave., Hillside, N.J.—A.C.A.O
 U.S. Testing Co., 1415 Park Ave., Hoboken, N.J.—G.J.I.S.T.V.A.C.A.F.A.L.A.P
 Vacuum Tube Products, 506 S. Cleveland St., Oceanside, Calif.—X.A.L
 Varo Mfg. Co., 1801 Walnut St., Garland, Tex.—K.T.W.A.E.A.N
 VECTRON INC., 400 Main St., Waltham 54, Mass.—C.G.K.N.T.V.A.O.A.P
 Vibroscope Co., 6 E. 39 St., New York 16, N.Y.—S
 Vibro-Ceramics Corp., Metuchen, N.J.—S
 VICTOREEN INSTRUMENT CO., 3800 Perkins Ave., Cleveland 14, Ohio—S
 Vitaire Electronics Mfg. Co., 576 W. Merrick Rd., Lynbrook, L.I., N.Y.—C
 VOLKERS & SCHAFFER, 1679 Broadway, Schenectady, N.Y.—A.C
 Voron & Co., George, 835 N. 19th St., Philadelphia 30, Pa.—G.A.P
 Waldorf Instrument Corp., Park Ave., Huntington, N.Y.—A.O
 Walkirt Co., 145 W. Hazel St., Inglewood 3, Calif.—K
 Wang Labs., 296 Columbus Ave., Boston 16, Mass.—K.U
 Warrick Co., Frederick P., 6732 Dixie Hwy., Clarkston, Mich.—H
 Washington Institute of Technology Inc., 4810 Calvert Rd., College Park, Md.—N
 Waveforms, Inc., 333 6th Ave., New York 14, N.Y.—A.C.N.A.B.A.O
 WAVELINE INC., Passiac Ave., Caldwell, N.J.—C.E.A.C.A.O.A.P

Weinschel Eng'g & Mfg. Corp., 10505 Metropolitan Ave., Kensington, Md.—C
 Weltronic Co., 19500 W. 8 Mile Rd., Detroit 19, Mich.—K.A.E
 West Coast Electronics Co., 5873 W. Jefferson Blvd., Los Angeles 16, Calif.—N
 West Instrument Corp., 525 N. Noble St., Chicago 22, Ill.—A.I
 Western Instrument Co., 826 N. Victory Blvd., Burbank, Calif.—G
 Westinghouse Electric Corp., Box 868, Pittsburgh 30, Pa.—A.K
 WESTON ELECTRICAL INSTRUMENT CORP., 614 Frelinghuysen Ave., Newark 5, N.J.—A.K
 Weston Labs., Inc., Old Littleton Rd., Harvard, Mass.—N.A.O.A.P
 Weymouth Instrument Co., 1440 Commercial St., East Weymouth 89, Mass.—A.O
 Wheelco Instruments Div., Barber-Colman Co., 1300 Rock St., Rockford, Ill.—A.L
 Wheeler Labs., Great Neck, L.I., N.Y.—A.O
 White Industries Inc., 421 W. 54 St., New York 19, N.Y.—C.L.A.C
 White Instrument Laboratories, 203 Riverside Dr., Austin 4, Texas—T
 Wickes Eng'g & Const. Co., 12th St. & Ferry Ave., Camden, N.J.—M
 Wilcox Research Corp., 340 La Brea Ave., Los Angeles 36, Calif.—A.J
 Williams, Brown & Earle, 904-06 Chestnut St., Philadelphia 7, Pa.—J.M.O.Q.X.A.J
 Winslow Co., 9 Liberty St., Newark 5, N.J.—N.A.L
 Worcester Pressed Aluminum Corp., 13 Hope Ave., Worcester, Mass.—V
 Wunderlich Radio Co., 2 5th Ave., New York 11, N.Y.—C.N

47—MEASUREMENT & TEST EQUIPMENT—STANDARDS

- Standards, capacitanceA
- Standards, frequencyB
- Standards, inductanceC
- Standards, resistanceD
- Standards, timeE
- Standards, voltageF

Airtron Inc., 1101 W. Elizabeth Ave., Linden, N.J.—B
 Allied Intl. Inc., 230 Park Ave., New York 17, N.Y.—B.F
 A.R.F. Products, Inc., 7627 Lake St., River Forest, Ill.—B
 Barker & Williamson, Inc., 237 Fairfield Ave., Upper Darby, Pa.—C
 Bassett Inc., Rex., 1314 NE 17th Court, Ft. Lauderdale, Fla.—B
 BERKELEY SCIENTIFIC, DIV. BECKMAN INSTRUMENTS, INC., 2200 Wright Ave., Richmond 3, Calif.—B
 Biddle Co., James G., 1316 Arch St., Philadelphia 7, Pa.—B.D
 BILEY ELECTRIC CO., Union Station Bldg., Erie, Pa.—B
 Centralab Div., Globe Union, Inc., 900 E. Keefe Ave., Milwaukee 1, Wisc.—A
 Central Sales & Mfg. Corp., Richwood Pl., Danville, N.J.—A
 Clark Crystal Co., 2 Farm Rd., Marlboro, Mass.—B
 Clegg Laboratories, Inc., 142 S. Livingston Ave., Livingston, N.J.—A.C.D
 Colortone Electronics, 238 William St., New York 38, N.Y.—B.F
 Computer Co. of America, Div. of Bruno N.Y. Industries Corp., 149 Church St., New York 7, N.Y.—F
 Conn. Ltd., C. G., Electronic Equip. Div., 1101 E. Beardsley Ave., Elkhart, Ind.—B
 Cornell-Dubilier Elec. Corp., 333 Hamilton Blvd., S. Plainfield, N.J.—A
 Cramer Co., R. W., Centerbrook, Conn.—E
 Daven Co., 191 Central, Newark, N.J.—D
 Demco Products, P.O. Box 5042, Philadelphia 11, Pa.—E
 DeMornay-Bonardi, Inc., 780 S. Arroyo Pkway, Pasadena, Calif.—B
 Electrofilm Inc., 7116 Laurel Canyon Blvd., N. Hollywood, Calif.—A.C.D.F
 Electron Radar Products, 1041 E. Pulaski Rd., Chicago, Ill.—D
 Electro-Tech Equip. Co., 308 Canal St., New York 13, N.Y.—D.E.F
 Elk Electronic Labs., Inc., 333 W. 52 St., New York 19, N.Y.—B
 El-Tronics, Inc., 437 N. 5 St., Phila. 23, Pa.—D
 FREED TRANSFORMER CO., 1718 Weirfield St., Brooklyn 27, N.Y.—B.C
 Frequency Standards, Box 504, Asbury Park, N.J.—B
 GENERAL ELECTRIC CO., Apparatus Div., 1 River Rd., Schenectady 5, N.Y.—B.M
 GENERAL RADIO CO., 275 Mass. Ave., Cambridge 39, Mass.—A.B.C.D.E
 Gertsch Products Inc., 11846 Mississippi Ave., Los Angeles 25, Calif.—B
 G. & M. Equipment Co., 7315 Varna Ave., N. Hollywood, Calif.—R
 Gotham Instruments Div., American Machine & Metals, Sellersville, Pa.—F
 Gray Instrument Co., 64 W. Johnson St., Philadelphia 44, Pa.—D

Haydon Mfg. Co., 245 E. Elm St., Torrington, Conn.—E
 Hewlett-Packard Co., 395 Page Mill Rd., Palo Alto, Calif.—B
 Hill Electronic Eng'g & Mfg. Co., New Kingstown, Pa.—B,E
 International Business Machines Corp., 690 Madison Ave., New York 22, N.Y.—E
 Jackson Electrical Instrument Co., 18 S. Patterson Blvd., Dayton 2, Ohio—F
 Kalbfell Labs., 1090 Morena Blvd., San Diego 10, Calif.—F
 LaRose & Assoc., W. T., 31 Ontario St., Cohoes, N.Y.—F
 Leeds & Northrup Co., 4970 Stenton Ave., Philadelphia 44, Pa.—A,D,F
 Linear Equipment Labs., Brightwater Pl., Massapequa, L.I., N.Y.—B
 Mackenzie Products Co., 141 Brewery St., New Haven 11, Conn.—E
 MacLeod & Hanopol, Inc., 10 Roland St., Charlestown 29, Mass.—A,D
 Marconi Instruments Ltd., 23 Beaver St., New York 4, N.Y.—B
 Miller Electro-Research Labs., 5529 S. 5 St., Milwaukee 7, Wisc.—D
 Nassau Research & Development Associates, 66 Main St., Mineola, N.Y.—B
 Neutronic Associates, 87-16 116th St., Richmond Hill, L.I., N.Y.—F
 Non-Linear Systems, Del Mar Airport, Del Mar, Calif.—D,F
 N.Y. Testing Labs., 47 West St., New York 6, N.Y.—A,B,C,D,E,F
 Norman Labs., Ernst, Williams Bay, Wis.—B,E
 Peters Co., O. S., 1353 N.Y. Ave., N.E., Washington 2, D.C.—B
 PHAOSTRON CO., 151 Pasadena Ave., S. Pasadena, Calif.—D
 Phebo, Inc., 900 Kingston Rd., Baltimore 12, Md.—U
 Philamon Labs., Inc., 5717 3rd Ave., Brooklyn 19, N.Y.—B
 Potter Instrument Co., 115 Cutter Mill Rd., Great Neck, N.Y.—B
 Radiation, Inc., Drawer Q, Melbourne, Fla.—F
 Radio City Products Co., 101 W. 31st St., New York 1, N.Y.—A,F
 Riverbank Labs., Batavia Ave., Geneva, Ill.—B
 Rubicon Co., Ridge Ave. at 35th St., Philadelphia 32, Pa.—C,D,F
 Rutherford Electronics Co., 3707 S. Robertson Blvd., Culver City, Calif.—E
 Scala Radio Co., 2814 19 St., San Francisco 10, Calif.—AC
 Sensitive Research Instrument Corp., 9 Elm Ave., Mt. Vernon, N.Y.—D,F
 Servo Corp. of America, 20-20 Jericho Turnpike, New Hyde Park, N.Y.—B
 SHALLCROSS MFG. CO., 520 Pusay Ave., Colingdale, Pa.—D
 Sorensen & Co., 375 Fairfield Ave., Stamford, Conn.—F
 Standard Electric Time Co., 119 Logan St., Springfield 2, Mass.—B,E
 Standard Electronics Research Corp., 2 E. End Ave., New York 21, N.Y.—B
 Sterling Mfg. Co., 7201 Wentworth Ave., Cleveland 2, Ohio—F
 Sun Electric Corp., Harlem & Avondale Aves., Chicago 31, Ill.—F
 TECHNOLOGY INSTRUMENT CORP., 531 Main St., Acton, Mass.—B
 Telecomputing Corp., 133 E. Santa Anita Ave., Burbank, Calif.—D,F
 Telescreen Corp., 36 Grove St., New Canaan, Conn.—A
 Teletronic Labs. Inc., 1835 W. Rosecrans Ave., Gardena, Calif.—E
 Teletronics Laboratory, Inc., 54 Kinkel St., Westbury, L.I., N.Y.—B,E
 Thompson Clock Co., H. C., 38 Federal St., Bristol, Conn.—B
 Time-O-Matic Co., 1106 Bahls St., Danville, Ill.—E
 Times Facsimile Corp., 540 W. 58 St., New York 19, N.Y.—B
 U.S. Testing Co., 1415 Park Ave., Hoboken, N.J.—A,B,C,D,E,F
 Varo Mfg. Co., 1801 Walnut St., Garland, Tex.—B
 VECTRON, INC., 400 Main St., Waltham 54, Mass.—B
 Weston Labs., Inc., Old Littleton Rd., Harvard, Mass.—B
 Wunderlich Radio Co., 2 5th Ave., New York 11, N.Y.—B

48—MEDICAL ELECTRONIC EQUIPMENT

Anoxia photometers A
 Diathermy equipment C
 Electrocardiographs D
 Electrocauterizers E
 Electroencephalographs F
 Electromyographs G
 Electron microscopes H
 Electrodesative generators I
 Electroshock machines J
 Electrosurgical equipment S
 Fluoroscope machines K



Germicidal lamps L
 Heating elements M
 Hemoglobinometers N
 Oscillometers T
 Photographic x-ray equipment O
 Psychogalvanometers P
 Radioactivity equipment U
 Stimulators B
 Stethographs & stethophones Q
 Ultrasonic equipment V
 X-ray equipment R

Ace Electric Mfg. Co., 1458 Shakespeare Ave., New York 52, N.Y.—M
 Advanced Electronics, Inc., 94 Silas Deane Hwy., Rocky Hill, Conn.—R
 Ahrendt Instrument Co., 4910 Calvert Rd., College Park, Md.—R
 American Cystoscope Makers, 1241 Lafayette Ave., New York 59, N.Y.—C,S
 American Diathermy Products, 11858 Miss. Ave., Los Angeles 25, Calif.—C
 American Electronic Labs., 641 Arch St., Philadelphia 6, Pa.—U
 American Optical Co., Box A, Buffalo 15, N.Y.—N
 American Scientific Co., 1295 Grand Concourse, New York 52, N.Y.—J
 Amperex Electronic Corp., 230 Duffy Ave., Hicksville, L.I., N.Y.—C,R
 Anton Electronic Labs., 1226 Flushing Ave., Brooklyn 37, N.Y.—U
 Applegate & Co., C. J., 1816 Grove St., Boulder, Colo.—J
 A.R.F. Products, Inc., 7627 Lake St., River Forest, Ill.—L
 Arkey Co., 605 1 Ave. S. W., Rochester, Minn.—B,F
 Atlas Coil Winders Inc., 39 Manhattan St., Stamford, Conn.—R
 Audio-Tone Oscillator Co., 6511 Main St., Long Hill, Conn.—I
 Bar-Ray Products, 209 25 St., Brooklyn 32, N.Y.—O
 Beam Instruments Corp., 350 5 Ave., New York 1, N.Y.—D
 Beck-Lee Corp., 630 W. Jackson Blvd., Chicago 6, Ill.—D
 Bedford Surgical Co., 1326 Fulton St., Brooklyn, N.Y.—R
 Birtcher Corp., 4371 Valley Blvd., Los Angeles 32, Calif.—C,L
 BRUSH ELECTRONICS CO., 3405 Perkins Ave., Cleveland 14, Ohio—D,F,G
 Calbest Eng'g. & Electronics Co., 828 N. Highland Ave., Hollywood 38, Calif.—M
 Cambridge Instrument Co., 3033 Grand Central Terminal, New York 17, N.Y.—D,Q
 Cameron Surgical Specialty Co., 666 W. Division St., Chicago 10, Ill.—E
 Cast Optics Corp., 1010 Post Rd., Riverside, Conn.—R
 Central Scientific Co., 1700 Irving Park Rd., Chicago 13, Ill.—N,Q
 Century Geophysical Corp., 3406 W. Washington Blvd., Los Angeles 18, Calif.—D,F,G
 Colortone Electronics, 238 William St., New York 38, N.Y.—C
 Columbia Resistors Inc., 216 Lafayette St., New York 12, N.Y.—M
 Continental X-Ray Corp., 1536 N. Clybourn, Chicago 10, Ill.—K
 Cox & Co., 115 E. 23 St., New York, N.Y.—M
 Cutler-Hammer, Inc., 436 N. 12th St., Milwaukee 1, Wisc.—M
 Dallons Labs., 5066 Santa Monica Blvd., Los Angeles 29, Calif.—C,E,L
 Delaware Optical Labs., 36 Williams St., Lansdowne, Pa.—L,O
 Demco Products, P.O. Box 5042, Philadelphia 11, Pa.—Q
 Du Pont De Nemours & Co., E. I., 10 & Market Sts., Wilmington 98, Del.—K,R
 Eagle Electric Mfg. Co., 23-10 Bridge Plaza S., Long Island City, N.Y.—M
 Eastman Kodak Co., Rochester 4, N.Y.—O
 Edin Co., 207 Main St., Worcester 8, Mass.—B,D,F,G
 Egan Laboratory, 107-56 113th St., Richmond Hill 19, N.Y.—F
 Electrical & Physical Instrument Corp., 25 W. 43rd St., New York 36, N.Y.—J
 Electrodyne Co., Endicott S., Norwood, Mass.—B,G,I
 Electrofilm Corp., 7116 Laurel Canyon Blvd., N. Hollywood, Calif.—M
 Electro-Medical Lab., S. Woodstock, Vt.—B,F,G,P,Q
 Electronic Control Corp., 1573 E. Forest Ave., Detroit 7, Mich.—A,N
 Electronic Heating Corp., 66 Needham St., Newton Highlands 61, Mass.—C
 Electro-Tech Equip. Co., 308 Canal St., New York, N.Y.—M

Electronic Tube Corp., 1200 E. Mermaid Lane, Philadelphia 18, Pa.—F
 Eng'g. Research & Devel. Co., Addison, Ill.—C
 Equip. & Service Co., 6815 Oriole Dr., Dallas 9, Tex.—F
 Esco Mfg. Co., Box 344, Summit, Ill.—J
 Espey Mfg. Co., 528 E. 72 St., New York 21, N.Y.—C,D,F,G
 Fairchild Camera & Instrument Corp., Robbins Lane, Yonkers, L.I., N.Y.—O
 Fischer & Co., H. G., 9451-91 W. Belmont Ave., Franklin Park, Ill.—R
 Fischer & Co., R. A., 525 Commercial St., Glendale 3, Calif.—B,C,L
 Flett Lab., 3711 Marshall Rd., Drexel Hill, Pa.—Q
 Fraser Development Lab., Box 73, Huntington Station, N.Y.—T
 F-R Machine Works Electronics & X-Ray Div., 44-14 Astoria Blvd., Long Island City 3, N.Y.—K,R
 Gates & Co., G. W., Hampstead Tpke. & Lucille Ave., Franklin Square, L.I., N.Y.—L
 GENERAL ELECTRIC CO., Nela Park, Cleveland 12, Ohio—L
 General Electric Co., X-Ray Dept., 4855 Electric Ave., Milwaukee 1, Wisc.—C,D,R
 General Electronics, Inc., 32 W. 22 St., New York 10, N.Y.—C
 Graessner-Stadler Co., 106 Hampshire St., Cambridge 39, Mass.—B,P
 Grass Instrument Co., 101 Old Colony Ave., Quincy 70, Mass.—B,F,G
 GULTON MFG. CORP., Metuchen, N.J.—D
 Hanovia Chem. & Mfg. Co., Chestnut St. & N.J. R.R. Ave., Newark 5, N.J.—C,L
 Hansen Co., Wm., 165 Silverbrook Ave., Niles, Mich.—Q
 Hathaway Instrument Co., 1315 S. Clarkson St., Denver 10, Colo.—D,P
 Heiland Research Corp., 130 E. 5 Ave., Denver 9, Colo.—D
 Huppert Co., K. H., 6830 Cottage Grove Ave., Chicago 37, Ill.—M
 Kanthal Corp., Amelia Pl., Stamford, Conn.—M
 Keleket X-Ray Corp., Covington, Ky.—R
 Kemlite Labs., 1819 W. Grand Ave., Chicago 22, Ill.—L
 Lavole Labs., Morgantown, N.J.—G
 Lektra Labs., 154 11 Ave., New York 11, N.Y.—J
 Levinthal Electronic Products, 2821 Fair Oaks Ave., Redwood City, Calif.
 Liebel-Flarsheim Co., 111 E. Amity, Cincinnati 15, Ohio—C,R,S
 Litton Eng'g. Labs., 1049 Brittan Ave., San Carlos, Calif.—F
 Luckenbach & Co., Paul, 312 W. 231 St., New York 63, N.Y.—C
 Lyco Mfg. Co., 1401 Clinton St., Hoboken, N.J.—C
 Mackay Inc., A. D., 198 Broadway, New York 38, N.Y.—R
 Magnex Corp., 90-28 Van Wyck Expressway, Jamaica 18, N.Y.—R
 Maico Co., 21 N. 3 St., Minneapolis, Minn.—P
 Marconi Instruments Ltd., 23 Beaver St., New York 4, N.Y.—C,D,F
 Master Appliances, 1600 Factory Ave., Marion, Ohio—C
 Mattern Mfg. Co., F., 4647 N. Cicero Ave., Chicago 47, Ill.—R
 Medco Products Co., 3607 E. Admiral Place, Tulsa 12, Okla.—R
 Medcraft Electronic Corp., 41-41 24 St., Long Island City 1, N.Y.
 Medical Quartz Products Co., 5066 Santa Monica Blvd., Los Angeles 27, Calif.—C,L,V
 Mendelsohn Speedgun Co., 457 Bloomfield Ave., Bloomfield, N.J.—D
 Menlo Research Lab., P. O. Box 527, Menlo Park, Calif.—L
 Mercury Mfg. Corp., 45 Brown St., Buffalo 11, N.Y.—C
 Merix Chemical Co., 1021 E. 55 St., Chicago 14, Ill.—O
 Microtran Co. Div. Crest Labs., 84-11 Rockaway Beach Blvd., Rockaway Beach 93, N.Y.—J
 Miller Surgical Co., 2449 N. Pulaski Rd., Chicago 10, Ill.—S
 Miskella Infra-Red Co., E. 73 St. & Grand Ave., Cleveland 4, Ohio—M
 Mooradian High Frequency Labs., 13 E. 74th Lee Rd., Bogota, N.J.—C
 Newark Wire Cloth Co., 851 Verona Ave., Newark 4, N.J.—R,S
 New Hampshire Ball Bearings, Peterborough, N.H.—R
 Norco Mfg. Co., 392 Bleecker St., New York 14, N.Y.—L
 Nuclear Instrument & Chemical Corp., 21 W. Erie St., Chicago 10, Ill.—S,U
 Offner Electronics, Inc., 5320 N. Kedzie Ave., Chicago 25, Ill.—F,J
 Oregon Corvek Co., 1005 N. W. 16 Ave., Portland, Ore.—D
 Orthon Corp., 196 Albion Ave., Paterson, N.J.—R,R
 Peerless X-Ray Labs. & Mfg. Corp., 467 18th Ave., New York 18, N.Y.—K,R
 Pereny Equip. Co., 893 Chambers Rd., Columbus 12, Ohio—M
 Phebo, Inc., 900 Kingston Rd., Baltimore 12, Md.—F
 Phoenix Precision Instrument Co., 8303 N. 5 St., Philadelphia 40, Pa.—A,L

Photocon Research Prod., 421 N. Foothill Blvd., Pasadena 8, Calif.—N
 Potovolt Corp., 95 Madison Ave., New York 16, N.Y.—N
 Raker X-Ray Corp., 25 S. Broadway, White Plains, N.Y.—R
 Rwer Transformer Co., 532 Mulberry St., Newark 5, N.J.—R
 Reuse Measurements Co., 942 Kings Highway, Brooklyn 23, N.Y.—L
 Reuss & Instruments, 15 Stone Ave., Brooklyn 33, N.Y.—B.G
 Professional Equipment Co., Box 488, Maywood, Ill.—R
 Radio Ceramics Corp., 109 S. Superior St., Angola, Ind.—M
 Radio Corp. of America, Eng'g Products Div., Camden, N.J.—H
 Radium Chemical Co., 161 E. 42nd St., New York 17, N.Y.—U
 Radium Emanation Corp., 420 Lexington Ave., New York 17, N.Y.—U
 Raytheon Mfg. Co., 100 River St., Waltham 54, Mass.—C
 R.C. Scientific Instrument, 307 Culver Blvd., Playa Del Rey, Calif.—A
 Redel Eng'g., 2361 Riverside Dr., Los Angeles 39, Calif.—O.R
 Rich-Roth Labs., 1240 Main St., Hartford 3, Conn.—V
 Rubicon Co., Ridge Ave. at 35th St., Philadelphia 32, Pa.—P
 Ruborn Co., 39 Osborne St., Cambridge 39, Mass.—D
 Sensitive Research Instrument Corp., 9 Elm Ave., Mt. Vernon, N.Y.—R
 Sannon Luminous Materials Co., 7356 Santa Monica Blvd., Hollywood 46, Calif.—L
 Sherman Industrial Electronics Co., 5050 Washington Ave., Belleville, N.J.—M
 Standard Electronic Research Corp., 2 East End Ave., New York 21, N.Y.—J
 Standard X-Ray Co., 1932 N. Burling St., Chicago 14, Ill.—R
 Superex Electronics Corp., 23 Atherton St., Yonkers, N.Y.—O
 Tecca Corp., 139 E. 23 St., New York 10, N.Y.—B
 Technical Operations Inc., 6 Schouler Ct., Arlington 74, Mass.—O
 Technical Products Co., 19 N. Dunlap, Medical Center, Memphis 1, Tenn.—A.C.D.E.F.J.L.N
 Technitrol Eng'g. Co., 2751 N. 4 St., Philadelphia 33, Pa.—D
 Tele-Beam Industries, 6th & Soscol Ave., Napa, Calif.—C.V
 Thompson Clock Co., H. C., 38 Federal St., Bristol, Conn.—L.M.O.R
 Times Facsimile Corp., 540 W. 58 St., New York 19, N.Y.—O
 Tracerlab, 130 High St., Boston 10, Mass.—R
 Ultra-Violet Products, 145 Pasadena Ave., S. Pasadena, Calif.—L
 U.M.A. Inc., 56 Cooper Square, New York, N.Y.—T
 Universal X-Ray Products, 1140 N. Western Ave., Chicago 22, Ill.—P.R
 U. S. Radium Corp., 535 Pearl St., New York 7, N.Y.—R
 Vibro-Ceramics Corp., Metuchen, N.J.—D
 Victoreen Instrument Co., 3800 Perkins Ave., Cleveland 12, Ohio—R
 Volkert & Schaffer, 1679 Broadway, Schenectady, N.Y.—D.F
 Vulcan Electric Co., 88 Holten St., Danvers, Mass.—M
WALL MFG. CO., P., Erie St., Grove City, Pa.—M
 Wappler Inc., 27-10 Astoria Blvd., Long Island City 2, N.Y.—B.C.E
 Welch Mfg. Co., W. M., 1515 Sedgwick St., Chicago 10, Ill.—D.N
 Velsh Electric Co., 1221 Wade St., Cincinnati, 14, Ohio—A
 Western Gold & Platinum Works, 589 Bryant St., San Francisco 7, Calif.—M
 Western Radiation Lab., 1107 W. 24 St., Los Angeles 7, Calif.—R
 Westinghouse Electric Corp., 2519 Wilkens Ave., Baltimore 3, Md.—K.R
 Westinghouse Electric Corp., Box 868, Pittsburgh 30, Pa.—R
 Wolf X-Ray Prod. Inc., 59 Bank St., New York 14, N.Y.—R
 Ray Mfg. Corp. of America, 222 Bowery, New York 12, N.Y.—R
 Yellow Springs Instrument Co., P. O. Box 106, Yellow Springs, Ohio—D.P

49—METALS & CARBONS

Carbides AAS
 Carbon A
 Cloth, wire screen D
 Diamonds H
 Die castings X
 Electroplating compounds G
 Foil Y
 Graphite I
 Core materials, laminated J
 Core materials, powdered K
 Magnets, electro L
 Magnets, permanent M
 Metal bellows AH

Metal-coated glass AAT
 Metallic paint AI
 Porous bearing metals AN
 Sheet metal AP
 Spring contact metals AR
 Stampings AS
 Thermostatic metals AWW

METALS

Alnico N
 Aluminum O
 Antimony P
 Barium Q
 Bearings R
 Beryllium S
 Brass T
 Bronze U
 Bronze phosphor V
 Cadmium W
 Cesium B
 Chromium C
 Cobalt E
 Copper F
 Ferrites AAR
 Gold Z
 Iron AA
 Iron oxide AB
 Kovar AAU
 Lead & Alloys AC
 Lithium AD
 Magnesium & alloys AE
 Manganese AG
 Molybdenum AJ
 Monel AK
 Nickel AL
 Platinum AM
 Radium AAQ
 Radium AAQ
 Radium AAQ
 Silver alloys AQ
 Silver AO
 Steel, metal coated AT
 Steel, stainless AU
 Strontium AV
 Tantalum AW
 Tin & Alloys AX
 Titanium AAN
 Tungsten AAO
 Uranium AAP
 Zinc AY
 Zirconium AZ

SOLDER

Aluminum solder AAA
 Lead-tin solder AAB
 Printed circuit solder AAC
 Silver solder AAD

TUBING

Aluminum tubing AAM
 Brass tubing AAE
 Copper tubing AAF
 Flexible metal hose AAL
 Monel tubing AAG
 Nickel tubing AAH
 Silver tubing AAJ
 Steel tubing AAJ
 Tungsten tubing AAK

Acheson Colloids Co., 1950 Washington Ave., Port Huron, Mich.—I
 Acme Oxygen Co., 119 S. Fourth St., Harrison, N.J.—O.T.U.AQ.AU
 Acromark Co., 601 Morrell St., Elizabeth 4, N.J.—AS
 Aerolite Electronics Corp., 507 26 St., Union City, N.J.—ARAS
 Air Associates Inc., 1231 Airway, Glendale 1, Calif.—AAB.AAD
 ALDEN PRODUCTS CO., 117 N. Main St., Brockton 64, Mass.—J
 Allegheny Ludlum Steel Corp., Oliver Bldg., Pittsburgh, Pa.—J.M.N.AP.AS.AU.AAJ
 Allen-Bradley Co., 1326 S. 2nd St., Milwaukee 4, Wis.—K
 Allied Research & Eng'g. Inc., 1041 N. Las Palmas, Hollywood, Calif.—F.Z.A.LAO
 ALPHA METALS, 56 Water St., Jersey City, N.J.—W.AC.AX.AAA.AAB.AAC.AAD
 American Brass Co., 414 Meadow St., Waterbury 20, Conn.—F.R.S.T.U.V.AP.AS.AAE.AAF.AAL.AAM
 American Cladmetals Co., P. O. Box 544, Carnegie, Pa.—J.AP
 American Electro Metal Corp., 320 Yonkers Ave., Yonkers 3, N.Y.—K.AJ
 American Platinum Works, 231 N.J. R.R. Ave., Newark 6, N.J.—Z.AM.AO.AQ.AAD.AAI
 American Silver Co., 36-07 Prince St., Flushing 54, N.Y.—F.J.O.S.T.U.V.Y.Z.AA.AJ.AK.AL.AM.AO.AQ.AR.AT.AU.AW.AZ.AAD.AAN.AAW
 Anchor Metal Co., 244 Boerum St., Brooklyn 6, N.Y.—F.O.P.Q.S.W.X.Y.AC.AD.AE.AG.AL.AN.AO.AQ.AS.AX.AY.AAA.AAB.AAC.AAD
 Anderson Assoc., H. V., 289 Park Ave., Berkeley Heights, N.J.—Z.AO
ANTARA CHEMICALS DIV., General Dye-stuff Corp., 436 Hudson, New York, N.Y.—AA
Apollo Metal Works, 66 Place & S. Oak Park Ave., Chicago 33, Ill.—AT
Armed Steel Corp., 1683 Curtis St., Middletown, Ohio—AT.AU
ARNOLD ENGR. CO., P. O. Box G. Marengo, Ill.—J.K.M
Art Wire & Stamping Co., 1 Boyden Pl., Newark 2, N.J.—AS
 Associated Eng'g. & Mfg. Corp., Glen Ridge, N.J.—AJ
 Atlas E-E Corp., Bedford, Mass.—AS
 Auburn Mfg. Co., Stack St., Middletown, Conn.—AS
Bar-Ray Products, Inc., 209 25 St., Brooklyn 32, N.Y.—AC
Bart-Messing Corp., 229 Main St., Belleville 9, N.J.—F.W.A.L.AX
Bayside Watch Tool Co., 20-02 Utopia Parkway, Whitestone 57, N.Y.—H
Beryllium Corp., Reading 21, Pa.—S
Bishop & Co., J., King St., Malvern, Pa.—Z.AM.AU.AAG.AAH.AAJ
Bow Solder Products Co., 251 Freeman St., Brooklyn 22, N.Y.—AC.AX.AAB
Bram Chemical Co., 820 65th Ave., Philadelphia 26, Pa.—B.C.E.F.G.J.K.N.O.P.Q.S.T.U.V.W.Z.AD.AE.AF.AG.AJ.AK.AL.AM.AN.AO.AP.AQ.AR.AU.AV.AW.AZ.AAA.AAD.AAE.AAF.AAG.AAH.AAI.AAK.AAM.AAN.AAO.AAP.AAQ.AAR.AAW
Breeze Corporations, 700 Liberty Ave., Union, N.J.—AHAAL
Bridgeport Brass Co., Bridgeport, Conn.—U.AAE.AAF.AAM
Bristol Brass Corp., 580 Broad St., Bristol, Conn.—F.T.U.AP.AR
Brooks & Perkins, 1950 W. Fort St., Detroit 16, Mich.—AP.AS
Bucks County Enterprises, Quakertown Municipal Airport, Quakertown, Pa.—AS
Bundy Tubing Co., 8109 E. Jefferson Ave., Detroit 14, Mich.—AAG.AAH.AAJ
Canadian Radium & Uranium Corp., 630 5th Ave., New York 20, N.Y.—AAQ
Carpenter Steel Co., 101 W. Bern St., Reading, Pa.—AU.AWW
Chase Brass & Copper Co., 236 Grand St., Waterbury 20, Conn.—D.F.T.U.V.AP.AR.AS.AQ.AX.AAR.AAD.AAE.AAF
CHESTER CABLE CORP., 1000 Hill St., Chester, N.Y.—F
Chicago Expansion Bolt, 1338 W. Concord Pl., Chicago 22, Ill.—X.AS
Cleveland Wire Cloth & Mfg. Co., 3573 E. 78th St., Cleveland 5, Ohio—D
Consolidated Wire & Associated Companies, 1635 S. Clinton St., Chicago 16, Ill.—F
CROSS CO., H. 15 Beekman St., New York 38, N.Y.—AJ.AW.AAO
Crowley & Co., Henry I., 1 Central Ave., W. Orange, N.J.—K.M.AAR
CRUCIBLE STEEL CO. OF AMERICA, Oliver Bldg., Pittsburgh 30, Pa.—M.AF
DeMent Labs., New Fliedner Bldg., Portland 5, Ore.—AAP.AAQ
Division Lead Co., 836 W. Kinzie St., Chicago 22 Ill.—P. R. W. Y. AC. AP. AX. AY. AAA. AAB. AAC. AAD
Dixon Crucible Co., Joseph, Wayne & Monmouth Sts., Jersey City 3, N.J.—I
Dow Chemical Co., Midland, Mich.—X.AE
Du-Co Ceramics Co., Box 587, Butler, Pa.
Eastern Smelting & Refining Corp., 109 W. Brookline St., Boston, Mass.—Z.AG.AM.AO.AQ.AAD.AAI
Eastern Specialty Co., 3627 N. 8th St., Philadelphia 40, Pa.—AS
EBY INC., HUGH H., 4700 Stenton Ave., Philadelphia 44, Pa.—AS
Electrofilm Inc., 7116 Laurel Canyon Blvd., N. Hollywood, Calif.—A.C.E.F.I.J.K.O.T.U.W.AA.AB.AC.AE.AF.AJ.AL.AM.AO.AU.AY.AAR.AAN.AAW
Electronic Parts Mfg. Co., 508 25 St., Union City, N.J.—AS
Electro-Technics, Inc., 198 Albion Ave., Paterson, N.J.—L
Enthoven Solders Ltd., 107 N. Water St., Rochester 4, N.Y.—P.AC.AX.AAA
Erie Resistor Corp., 644 W. 12th St., Erie, Pa.—AS
Eutectic Welding Alloys Corp., 40-40 172 St., Flushing 58, N.Y.—AQ.AAB
Fansteel Metallurgical Corp., 2200 Sheridan Rd., N. Chicago, Ill.—AJ.AW.AAO
Farrelloy Co., 1245 N. 26 St., Philadelphia 21, Pa.—AAA.AAC.AAD
Federated Metals Div., American Smelting & Refining Co., 120 Broadway, New York 5, N.Y.—F. O. P. T. U. W. AC. AE. AX. AY. AAA. AAB. AAC
Ferricore Inc., 16 School St., Yonkers, N.Y.—K.AAR
Ferroxcube Corp of America, 233 E. Bridge St. Saugerties, N.Y.—K.M.AAR

Flexonics Corp., 1315 S. 3 Ave., Maywood, Ill.—AH,AAE,AAF,AAJ,AAI
GENERAL CERAMICS & STEATITE CORP.
 Keady, N.J.—AAR
GENERAL ELECTRIC CO., CARBOLOY DEPT., 11177 E. 8 Mile Rd., Detroit 32, Mich.—M,N
GENERAL ELECTRIC CO. Apparatus Div., 1 River Rd., Schenectady 5, N.Y.—RAAS
 General Magnetic Corp., 10001 Erwin Ave., Detroit 34, Mich.—M
Gilman Electric Co., 8350 Frankstown Ave., Pittsburgh 21, Pa.—AM,AO,AS
 Goldsmith Bros., 111 N. Wabash Ave., Chicago 2, Ill.—P,Z,AC,AG,AM,AO,AQ,AA, AAC,AA
 Gries Reproducer Corp., 5 Second St., New Rochelle, N.Y.—X
 Handy & Harman, 82 Fulton St., New York 38, N.Y.—Z,AL,AO,AQ,AA
 Helwig Co., 2544 N. 30 St., Milwaukee, Wis.—IR
HUDSON TOOL & DIE, 412 S. 14 St., Newark 7, N.J.—AS
 Improved Seamless Wire Co., 775 Eddy St., Providence 5, R.I.—J,Z,AM,AO,AP,AAI
 Indiana Steel Products, Valparaiso, Ind.—M
 Int'l. Nickel Co., 67 Wall St., New York 5, N.Y.—AK,AL,AP,AA,AG,AAH
 Int'l. Powder & Metallurgy, 439 W. Main St., Ridgway, Pa.—F,T,U
 Investment Casting Co., 319 Chestnut St., Newark, N.J.
 Jarrell-Ash Co., 165 Newbury St., Boston 16, Mass.—A, B, C, E, F, I, O, P, Q, S, W, Y, Z, AA, AD, AF, AJ, AL, AM, AO, AV, AW, AY, AZ
 Jelliff Mfg. Corp., C.O., Southport, Conn. D
 Johnson Mfg. Co., Mt. Vernon, Iowa.—P,W, AC,AX,AY,AAA,AA,BAAC
 Jonston Foil Mfg. Co., 6106 S. Broadway, St. Louis 11, Mo.—Y
 Kaiser Aluminum & Chemical Corp., 1924 Broadway, Oakland 12, Calif.—O,AA
 Kanthal Corp., Amelia Pl., Stamford, Conn.—O,C,AA
KESTER SOLDER CO., 4201 Wrightwood Ave., Chicago 39, Ill.—AAA,AA,BAAC
 Keystone Carbon Co., 1935 State St., St. Marys, Pa.—AN
 Keystone Watch Case Div., Riverside Metal Co., 1 Pavilion Ave., Riverside, N.J.—V,U,AR,AS
 Kings Labs., Inc., 127 Solar St., Syracuse 4, N.Y.—Q,AS,AV
 Kinney Co., Rosslyn Rd., Carnegie, Pa.—AT
 Kirk & Blum, 3120 Forer St., Cincinnati 9, Ohio—AP
Kling Metal Spinning Co., 174 Centre St., New York 13, N.Y.—AP,AS
 Kupfrian Mfg. Co., 367 State St., Binghamton, N.Y.—AAI
 Lerner Instrument & Electronics, GPO Box 620, Brooklyn 1, N.Y.—AAA,AA
 Lewis Spring & Mfg. Co., 2656 W. North Ave., Chicago 47, Ill.—AR,AS
 Libbey-Owens-Ford Glass Co. Liberty Mirror Div., Breckenridge, Pa.—AAT
 Limick Chemical Co., 59 E. Madison St., Chicago 3, Ill.—G
 London Chemical Co., 325 W. 32nd St., Chicago 16, Ill.—AA,BA
 Mackay Inc., A.D., 198 Broadway, New York 38, N.Y.—A, B, C, D, E, F, H, I, K, N, O, P, Q, S, T, U, V, W, Y, Z, AA, AB, AC, AD, AE, AF, AG, AJ, AK, AL, AM, AN, AO, AP, AQ, AR, AU, AV, AW, AX, AY, AZ, AAA, AAB, AAC, AAD, AAH, AAI, AAK, AAM, AAN, AAO, AAP, AAQ
 Magnetic Core Corp., Ossining, N.Y.—K,M
 Magnetic Metals Co., Hayes Ave., at 21 St., Camden 1, N.J.—J
 Magnetic Powders, Inc., Box 247, Johnsonburg, Pa.—K,Z,AA
 Mackepeace Co., D.E., Attleboro, Mass.—Z, AO,AQ,AR,AA,DAE,AAF,AAI,AA
 Mallinckrodt Chemical Works, 2nd & Mallinckrodt Sts., St. Louis 7, Mo.—F,O,P,Q,W, AA,AB,AC,AE,AG,AL,AO,AX,AY,AA
 MELPAR, 452 Swann Ave., Alexandria, Va.—K
 Metal Products Co., Craighead St., Nashville 4, Tenn.—AS
 Metal Textile Corp., Roselle, N.J.—D
 Metals & Controls Corp., Gen. Plate Div., 34 Forest St., Attleboro, Mass.—S,Y,Z,AM,AO, AQ,AR,AA,AAI,AA,AW
 Metz Refining Co., 369 Mulberry St., Newark 2, N.J.—Z,AO
 Micro-Circuits Co., New Buffalo, Mich.—AI
 Milwaukee Stamping Co., 800 S. 72 St., Milwaukee 14, Wis.—AS
 Miniature Prec. Bearings, 101 Carpenter St., Keene, N.H.—R
 Modern Wire Co., 39-30 Review Ave., Long Island City 1, N.Y.—AAB
 Multicore Sales Corp., 164 Duane St., New York, N.Y.—AAB
 Multi-Metal Wire Cloth Co., 1350 Garrison Ave., New York 59, N.Y.—D,AS
 Multi-Tron Lab., 4624 W. Washington Blvd., Chicago 44, Ill.—AS
 National Gasket & Asher Co., 124 E. 25th St., New York 10, N.Y.—AS
 National Lead Co., 111 Broadway, New York 6, N.Y.—AC,AA,BAAD
 National Radiator Co., 165 Bridge St., Johnstown, Pa.—K,AA,AB,AF,AL,AN
 Newark Wire Cloth Co., 351 Verona Ave., Newark 4, N.J.—D
 Ney Co., J.M., Hartford 1, Conn.—Z,AM,AO, AAD

ELECTRONIC INDUSTRIES DIRECTORY

North American Philips Co., Elmet Div., Lisbon Rd., Lewiston, Me.—F,H,O,AJ,AO, AAO
 Northern Metal Products Co., 9595 W. Grand Ave., Franklin Park, Ill.—AS
 Osborne Products, Glen Ellyn, Ill.—Patton-Mac Guyer Co., 201 Chapman St., Providence 5, R.I.—AS
 Peerless Products Industries, 812 N. Pulaski Rd., Chicago 51, Ill.—AS
PERMAG CORP., 214 Taaffe Pl., Brooklyn 5, N.Y.—M
 Permoflux Corp., 4960 W. Grand Ave., Chicago 39, Ill.—J,AAAR
 Petroff, Peter A., 127 Water St., New York 5, N.Y.—AH
PHELPS DODGE COPPER PRODUCTS, 40 Wall St., New York 5, N.Y.—F,AAF
 Phosphor Bronze Corp., 20 Franklin St., Seymour, Conn.—V,AP,AAQ,AR
 Pix Mfg., 22 Bedford, Newark 3, N.J.—AS
 Plamondon Magnetics Co., 1457 W. Hubbard St., Chicago 22, Ill.—M
 Powdered Metal Products Corp., 9335 W. Belmont Ave., Franklin Park, Ill.—K,R,T,U, AA,AN
 Precision Tube Co., Church Rd. & Wissahickon Ave., North Wales, Pa.—AAE,AAF,AAH, AAJ,AA
 Pyroferic Co., 621 E. 216 St., New York 67, N.Y.—K,AAAR
 Quality Components, Inc., St. Marys, Pa.—K
 Rada Products Co., 2911 W. Carroll Ave., Chicago 12, Ill.—AS
 Radio Cores, Inc., 9540 Tulley Ave., Oak Lawn, Ill.—J,K
 Rapid Electroplating Process, 1414 S. Wabash Ave., Chicago 5, Ill.—G
 Republic Foil & Metal Mills, 55 Triangle St., Danbury, Conn.—Y
 Revere Copper & Brass, 230 Park Ave., New York 17, N.Y.—F,O,T,U,V,AP,AS,AAE, AAF,AAJ,AA
 Reynolds Metals Co., 2500 S. 3rd St., Louisville 1, Ky.—O,Y,AA
 Rigidized Metals Corp., 657 Ohio St., Buffalo 3, N.Y.—F,O,T,Y,AE,AP,AT,AU,AY
 Romac Products Co., 48-01 25 Ave., Long Island City 3, N.Y.—AS
 Rostan Corp., 5650 59th St., Maspeth 78, L.I., N.Y.—AS
 Ruby Chemical Co., 68-70 McDowell St., Columbus 8, Ohio—AAN
 Ryerson & Son, Inc., Joseph T., Box 8000-A, Chicago 80, Ill.—AP,AAU,AAJ
 Secon Metals Corp., 7 Intervale St., White Plains, N.Y.—F, G, O, T, U, V, Z, AA, AE, AL, AM, AO, AU, AAN
SEL-REX PRECIOUS METALS, INC., 229 Main St., Belleville 9, N.J.—Z,AO,AAV
 St. Marys Carbon Co., State St., St. Marys, Pa.—AQ,U,AA,AN
 Semrow Products Co., 6120 N.W. Highway, Chicago 31, Ill.—D
 Sightmaster Corp., 111 Cedar St., New Rochelle, N.Y.—AN,AAA
 Smith Mfg. Co., Nathan R., 105 Pasadena Ave., S. Pasadena, Calif.—J
 Southwest Products, Inc., Alamo Downs Box 85-D, San Antonio 4, Tex.—AAQ
 Spincraft, Inc., 4122 W. State St., Milwaukee 8, Wis.—AS
STACKPOLE CARBON CO., Tannery St., St. Marys, Pa.—K,M,AAAR
 Standard Metals Corp., 262 Broad St., North Attleboro, Mass.—J,Z,AM,AO,AQ,AR,AA, AAF,AAI
 Star Stainless Screw Co., 190 Union Ave., Paterson 1, N.J.—AU
 Steward Mfg. Co., D.M., P.O. Box 510, Chattanooga, Tenn.—AAR
STUPAKOFF CERAMIC & MFG. CO., Latrobe, Pa.—AAU
 Super Flow Solder, 90 State St., Albany, N.Y.—AAA,AA,BAAD
SUPERIOR FLUX & MFG. CO., 1302 Ontario St., Cleveland 13, Ohio—AQ
 Superior Tube Co., Box 191, Norristown, Pa.—AAH,AAJ
SYLVANIA ELECTRIC PRODUCTS, 1740 Broadway, N.Y. 19, N.Y.—S,AJ,AS,AAO
 Technic Inc., 39 Snow St., Providence 3, R.I.—G,Z,AM,AAV
 Technical Products Co., 19 N. Dunlap, Medical Center, Memphis 1, Tenn.—AG,AM,AA
 Television Labs. Inc., 5045 W. Lake St., Chicago 44, Ill.—L
 Tempel Mfg. Co., 1939 Bryn Mawr Ave., Chicago 26, Ill.—J
 Thomas & Skinner, 1120 E. 23 St., Indianapolis 7, Ind.—C,E,J,M,N
 Thompson Clock Co., H.C., 38 Federal St., Bristol, Conn.—T,AAE,AAJ
 Tricon Mfg. Co., 8008 Wallace St., Chicago 20, Ill.—Z,AM,AO,AQ,AA
U.S. ELECTRONICS CORP., 275 Warren St., Lyndhurst, N.J.—L
 U.S. Radium Corp., 535 Pearl, N.Y., N.Y.—AAQ
 U.S. Testing Co., 1415 Park Ave., Hoboken, N.J.—A,I,L,M,Y

Universal Mfg. Co., 410 Hillside Ave., Hillside, N.J.—AS
 Vacumet Inc., 1009 W. Weed St., Chicago 22, Ill.—AI
 Vacuum Metals Corp., 70 Memorial Dr., Cambridge 42, Mass.—E,F,AA,AL,AAU
WALL MFG. CO., P. Grove City, Pa.—AAB
 Western Gold & Platinum Works, 589 Bryan St., San Francisco 7, Calif.—Z,AG,AM,AQ, AAD
WESTINGHOUSE ELECTRIC CORP., P. O. Box 868, Pittsburgh 30, Pa.—J
 Weymouth Instrument Co., 1440 Commercial St., East Weymouth 89, Mass.—L
 Whitehead Stamping, 1661 W. Lafayette Blvd., Detroit 16, Mich.—AS
 White Industries, Inc., 421 W. 54th St., New York 19, N.Y.—AS
 Wildberg Bros. Smelting & Refining, 742 Market St., San Francisco 2, Calif.—G,Z,AG,AM, AO,AQ,AA,AAI
 Williams & Co., C.K., 640 N. 13 St., Easton, Pa.—AA,AB
 Wilson Co., H.A., 2655 U.S. Route 22, Union, N.J.—Z,AL,AM,AO,AQ,AA,AAO,AAW
 Yale & Towne Mfg. Co., Powdered Metal Prods. Div., 9335 W. Belmont Ave., Franklin Park, Ill.—K,R
 Zero Mfg. Co., 1121 Chestnut St., Burbank, Calif.—AP,AS

50—METERS, AUDIO

- Meters, audio A
- Meters, decibel B
- Meters, distortion C
- Meters, frequency K
- Meters, intermodulation L
- Meters, modulation D
- Meters, noise E
- Meters, output F
- Meters, phase angle G
- Meters, recording H
- Meters, sound level I
- Meters, wow & flutter J

Advance Electronics Co., P. O. Box 394, Passaic, N.J.—G
 Aeronautical Electronics, Raleigh-Durham Airport, Raleigh, N.C.—G
 American Electroneering Corp., 2040 Colo. Ave., Santa Monica, Calif.—D
 Audio Instrument Co., 133 W. 14 St., New York 11, N.Y.—E,H,L
 Barber-Colman Co., 1300 Rock St., Rockford, Ill.—H
 Barker & Williamson, 237 Fairfield Ave., Upper Darby, Pa.—A,C,E
 Bassett Inc., Rex, 1314 NE 17th Court, Ft. Lauderdale, Fla.—A,C
 Berndt-Inch, Inc., Auricon Div., 6916 Romaine St., Hollywood 38, Calif.—H
 Burlington Instrument Co., 203 N. 3 St., Burlington, Iowa—B
 Clark Crystal Co., 2 Farm Rd., Marlboro, Mass.—C
 Clough-Bregle Co., 6014 Broadway, Chicago 40, Ill.—B
 Colortone Electronics, 238 William St., New York 38, N.Y.—C
 Communication Measurements Lab, 350 Leiland Ave., Plainfield, N.J.—A
 Conn Ltd., C. G., Elkhart, Ind.—C
 Cubic Corp., 2841 Canon St., San Diego 6, Calif.—G
 Daven Co., 191 Central Ave., Newark 4, N.J.—A,B,C,E,F,H,K
 Dayton Aviation Radio & Equip. Corp., P. O. Box 167, Vandalia, Ohio—F
 Deltion Inc., P. O. Box 192, Glenside, Pa.—G
 Digital Instrument Co., 212 Almeria Ave., Coral Gables, Fla.—C
 D & H Ltd., 402 E. Gutierrez St., Santa Barbara, Calif.—J,K,L
 Dubrow Development Co., 235 Penn St., Burlington, N.J.—C,K
 Electro-Mechanical Instrument Co., 812 Chestnut St., Perkasie, Pa.—I
 Elk Electronic Labs, 333 W. 52 St., New York 19, N.Y.—K,L
 Elm Laboratories, 18 S. Broadway, Dobbs Ferry, N.Y.—C
 Empire Devices, 38-25 Bell Blvd., Bayside, L.I., N.Y.—E,K
 Eng'g. Research & Dev. Co., Addison, Ill. F.
 Feiler Eng'g. & Mfg. Co., 8026 N. Monticello Ave., Skokie, Ill.—A,B,C,E,F,I
 Fluke Eng'g. Co., John, 1111 W. Nickerson St., Seattle 99, Wash.—G
 Franklin Electronics Inc., 415 W. Pike St., Philadelphia 40, Pa.—H,I
FREED TRANSFORMER CO., 1718 Weirfield St., Brooklyn 27, N.Y.—K
 Furst Electronics, 3322 W. Lawrence Ave., Chicago 26, Ill.—J
 Gates Radio Co., 123 Hampshire St., Quincy, Ill.—D,I
GENERAL ELECTRIC CO. Apparatus Div., 1 River Rd., Schenectady 5, N.Y.—C,G,I
GENERAL ELECTRIC CO., Electronics Park, Syracuse, N.Y.—D
GENERAL RADIO CO., 275 Mass. Ave., Cambridge 39, Mass.—B,C,D,E,F,I,K
GERTSCH PRODUCTS, INC., 11846 Miss. Ave., Los Angeles 26, Calif.—C,H
 Gonset Co., 801 S. Main St., Burbank, Calif.—D

Granco Products Inc., 36-17 20 Ave., Long Island City 5, N.Y.—C
 Heath Co., 305 Territorial, Benton Harbor, Mich.—A,C
 Hewlett-Packard Co., 395 Page Mill Rd., Palo Alto, Calif.—A,B,C,D,K
HICKOK ELECTRICAL INSTRUMENT CO., 10514 Dupont Ave., Cleveland 8, Ohio—F,H
 Industrial Television Inc., 369 Lexington Ave., Clifton, N.J.—I
 Industrial Test Equip. Co., 55 E. 11 St., New York 3, N.Y.—G
 Interelectronics Corp., 2432 Grand Concourse, New York 58, N.Y.—A
 International Instrument, Inc., P. O. Box 2954, New Haven 16, Conn.—B,I
 Kings Electronics Co., 40 Marbledale Rd., Tuckahoe, N.Y.—C
 Lavoie Labs., Inc., Morganville, N.J.—C
 Link Aviation, Inc., Binghamton, N.Y.—G
 Loral Electronics Corp., 794 E. 140 St., New York 54, N.Y.—C
 Marion Electrical Instrument Co., 400 Canal St., Manchester, N.H.—A,B,F
 Maxson Corp., W. L., 460 W. 34 St., New York 1, N.Y.—G
MEASUREMENTS CORP., Boonton, N.J.—L
 Meters, Inc., 5353 N. Keystone Ave., Indianapolis 20, Ind.—B
 Mill Instrument Corp., 92-15 72 St., Jamaica 33, N.Y.—B
 Millen Mfg. Co., James, 150 Exchange St., Malden, Mass.—C
 North American Instruments, 3445 Cabuenga Blvd., Los Angeles 28, Calif.—C
 Oberline, Ltd., 6411 Hollywood Blvd., Hollywood 28, Calif.—A
 OMCOT Test Equip., Box 196, N. Las Vegas, Nev.—A,B
 Panoramic Radio Products, 10 S. 2nd Ave., Mt. Vernon, N.Y.—E,K,L
PHASTRON CO., 151 Pasadena Ave., S. Pasadena, Calif.—A,B,F,I
 Phila. Scientific Glass Co., 4 Eckard Ave., Abington, Pa.—H
 Potter Instrument Co., 115 Cutter Mill Rd., Great Neck, N.Y.—C
 Radio City Products Co., 101 West 31 St., New York 1, N.Y.—A,B
 Rawson Electrical Instrument Co., 117 Potter St., Cambridge 42, Mass.—A,F
 Scheffel Mfg., Palisades Park, N.J.—AS
 Scott, Inc., Hermon Hooper, 385 Putnam Ave., Cambridge 39, Mass.—A,B,E,I
 Sensitive Research Instrument Corp., 9 Elm Ave., Mt. Vernon, N.Y.—A,B,C,F
 Sparten Radio Television, 2400 E. Ganson St., Jackson, Mich.—C
 Supreme, Inc., Greenwood, Miss.—F
TECHNOLOGY INSTRUMENT CORP., 531 Main St., Acton, Mass.—G
TELECHROME MFG. CORP., 88 Merrick Rd., Amityville, N.Y.—G
 Thompson Clock Co., H.C., 38 Federal St., Bristol, Conn.—C,G
 Trio Laboratories, P.O. Box 143, Wantagh, L.I., N.Y.—A
 Triplett Electrical Instrument Co., Harmon Rd., Bluffton, Ohio—A,B,C
 Vacolite Co., 3003 N. Henderson St., Dallas 6, Texas—A
 Walkirt Co., 145 W. Hazel St., Ingwood 3, Calif.—C
 Wang Labs., 296 Columbus Ave., Boston 16, Mass.—C
 Waveforms, Inc., 333 6th Ave., New York 14, N.Y.—A,B,F
WELCH MFG. CO., W.M., 1515 Sedgwick St., Chicago 10, Ill.—B
 West Coast Electronics Co., 5873 W. Jefferson Blvd., Los Angeles 16, Calif.—C,D
 Westinghouse Electric Corp., Box 868, Pittsburgh 30, Pa.—B,H

51—METERS, ELECTRICAL MEASUREMENT

Machmeters **AB**
Meters, ammeter **A**
Meters, capacitance **B**
Meters, conductance **AC**
Meters, d'arsonval **C**
Meters, electrometer **D**
Meters, flux **E**
Meters, frequency **F**
Meters, galvanometer **G**
Meters, impedance **H**
Meters, kilovolt **I**
Meters, kilowatt **J**
Meters, megohm **K**
Meters, microampere **L**
Meters, microfarad **M**
Meters, microampere **N**
Meters, milliampere **O**
Meters, millivolt **AD**
Meters, multimeter **P**
Meters, noise **Q**
Meters, ohm **R**
Meters, output **S**
Meters, phase angle **T**
Meters, power factor **U**

Meters, Q **V**
Meters, snap around **AA**
Meters, tension **AE**
Meters, vacuum tube volt **W**
Meters, volt **X**
Meters, watt **Y**
Meters, watt-hour **Z**

Advance Electronics Co., 451 Highland Ave., Passaic, N.J.—F,T
 Aerolux Light Corp., 553 11 Ave., New York 36, N.Y.—I
 Aeronautical Electronics, P.O. Box 6043, Raleigh, N.C.—T
 American Chronoscope Corp., 316 W. 1 St., Mount Vernon, N.Y.—P,W
 Applied Physics Corp., 362 W. Colo. St., Pasadena 1, Calif.—D,N
 Applied Research Labs., P.O. Box 1710, Glendale, Calif.—D
 Assembly Products, Main and Bell Sts., Chagrin Falls, O.—A,C,L,O,X
 Associated Research Inc., 3758 W. Belmont Ave., Chicago 18, Ill.—K,R
 Automatic Electric Co., 1033 W. Van Buren St., Chicago 7, Ill.—W
 Auto-Test Inc., 600 S. Michigan Ave., Chicago 5, Ill.—A,A,A
 Ballantine Labs., Inc., Boonton, N.J.—P,W
 Barber-Colman Co., 1300 Rock St., Rockford, Ill.—O
 Barker & Williamson, Inc., 237 Fairfield Ave., Upper Darby, Pa.—F,H,Q
 Beckman Instruments, Inc., Fullerton 1, Calif.—N
 Beede Electrical Instrument Co., Penacook, N.H.—A,O,L,X
BENDIX AVIATION CORP., CINCINNATI DIV., 203 W. 3 St., Cincinnati 2, Ohio—D
 Beta Electric Corp., 333 E. 103 St., New York 29, N.Y.—I
BOONTON RADIO CORP., Intervale Rd., Boonton, N.J.—V,A,C
 Borden Eng'g. Co., 63 Clinton Ave., New Providence, N.J.—G,L,O,R
 Bristol Co., Waterbury 20, Conn.—J
 British Electronic Sales Co., 23-03 45th Rd., Long Island City 1, N.Y.—A,C,G,I,L,M,N,O,X
 Burlington Instrument Co., 203 N. 8 St., Burlington, Iowa.—A,C,F,G,H,I,L,O,Q,S
 Cal-Tronics Corp., 11307 Hindry Ave., Los Angeles 45, Calif.—X
 Cambridge Instrument Co., 3033 Grand Central Terminal, New York 17, N.Y.—E,G
 Carol Electronics Corp., 141 E. 25th St., New York 10, N.Y.—P
 Century Geophysical Corp., 1333 N. Utica, Tulsa, Okla.—G
 Central Scientific Co., 1700 W. Irving Park Rd., Chicago, Ill.—C,D,E
 Chicago Industrial Instrument Co., 536 W. Elm St., Chicago 10, Ill.—A,C,L,M,N,O,P,R,S,W,X
 Clark Crystal Co., 2 Farm Rd., Marlboro, Mass.—F
 Clegg Laboratories, Inc., 142 S. Livingston Ave., Livingston, N.J.—H
CLIPPARD INSTRUMENT LAB., 7390 Colrain Rd., Cincinnati 24, Ohio—W
 Colortone Electronics, 238 William St., New York 38, N.Y.—F,X
 Columbia Electric Mfg. Co., 4519 Hamilton Ave., Cleveland 14, Ohio—A
 Communication Measurements Lab., Inc., 350 Leland Ave., Plainfield, N.J.—K,W
 Computer Corp. of America, 149 Church St., New York 7, N.Y.—W,X
 Consolidated Eng'g. Corp., 300 N. Sierra Madre Villa, Pasadena 15, Calif.—G
 Control Devices Inc., 9918 Charlevoix Ave., Detroit 14, Mich.—R,W
 Conn. Telephone & Electric Co., 70 Britannia St., Meriden, Conn.—P,Q,R
 Cubic Corp., Scott & Cannon Sts., San Diego 6, Calif.—Y
 Daven Co., 191 Central Ave., Newark 4, N.Y.—W
 Delta Electronics, 259 Green St., Brooklyn 22, N.Y.—W
DEJUR-AMSCO CORP., 45-01 Northern Blvd., Long Island City 1, N.Y.—A,C,L,O
 Deltron Inc., P. O. Box 192, Glenside, Pa.—T
DIAMOND MICROWAVE CORP., 7 North Ave., Wakefield, Mass.—F
 Dice Co., J.W., 1 Engle St., Englewood, N.J.—K,R
 Digital Instrument Co., 212 Almeria Ave., Coral Gables, Fla.—F
 Doelcam Corp., 1400 Soldiers Field Rd., Boston 35, Mass.—G,W,X
 Douglas Instrument Labs., 176 Norfolk Ave., Boston 19, Mass.—P
 Dubrow Development Co., 235 Penn St., Burlington, N.J.—H,R,Q,S,V,W
EDISON INC., THOMAS A., Instrument Div., W. Orange, N.J.—C,G
 Electric Design & Mfg. Co., Jefferson St., Burlington, Iowa.—A,C,L,O,X
 Electrofilm Inc., 7116 Laurel Canyon Blvd., N. Hollywood, Calif.—G,I,J,K,L,R,W,X
 Electro Impulse Lab., 62 White St., Red Bank, N.J.—J,S,W
 Electro-Mechanical Instrument Co., 812 Chestnut St., Perkasie, Pa.—A,O,X
 Electro Mechanical Research, Ridgefield, Conn.—G

Electronic Instrument Co., 84 Withers St., Brooklyn 11, N.Y.—R,X
 Electronic Measurements Co., Lewis St. & Maple Ave., Eatontown, N.J.—R,W
 Electronic Measurements Corp., 280 Lafayette St., New York 12, N.Y.—AA
 Electro-Tech Equipment Co., 104 Canal St., New York, N.Y.—A,B,C,E,F,G,I,J,K,L,M,O,P,R,S,U,W,Y,AA
 Electro-Technics Inc., 198 Albion Ave., Paterson, N.J.—V
 Elk Electronic Labs., Inc., 333 W. 52 St., New York 19, N.Y.—V
 Empire Devices, 38-25 Bell Blvd., Bayside, L.I., N.Y.—Q
 Engineering Research & Devel. Co., Addison, Ill.—Q
 Epsco, Inc., 126 Mass. Ave., Boston 15, Mass.—B
 Esterline-Angus Co. Inc., P. O. Box 596, Indianapolis, Ind.—A,F,I,J,O,R,U,X,Y
 Feiler Eng'g. & Mfg. Co., 8026 N. Monticello Ave., Skokie, Ill.—B,F,H,I,K,M,O,P,Q,R,S,V,W,X
 Ferranti Electric Inc., 30 Rockefeller Plaza, New York 20, N.Y.—D,X
 Fielden Instrument Div., Robertshaw-Fulton Controls Co., 2920 N. 4 St., Philadelphia 33, Pa.—A,L,O,X
 F-I Machine Works, 44-14 Astoria Blvd., Long Island City 3, N.Y.—F
FREED TRANSFORMER CO., 1718 Weirfield St., Brooklyn 27, N.Y.—V,W
 Frequency Standards, P. O. Box 504, Asbury Park, N.J.—F
 Furst Electronics, 3322-A W. Lawrence Ave., Chicago 25, Ill.—X
 Gaskins Co., 1005 S. Aurora Way, Wheaton, Ill.—H,P,W
GENERAL ELECTRIC CO., Apparatus Div., 1 River Rd., Schenectady 5, N.Y.—A,C,E,G,I,J,K,L,O,T,U,W,X,Y,Z,AA
 General Hermetic Sealing Corp., 99 E. Hawthorne Ave., Valley Stream, L.I., N.Y.—K
GENERAL RADIO CO., 275 Mass. Ave., Cambridge 39, Mass.—B,F,K,Q,S,U,W
GERTSCH PRODUCTS, INC., 11846 Mississippi Ave., Los Angeles 26, Calif.—I,W
 G-M Labs., Inc., 4300 N. Knox Ave., Chicago 41, Ill.—G
 Gotham Instruments Div., American Machine & Metals, Sellersville, Pa.—A,X
 Granco Products, Inc., 36-17 20 Ave., Long Island City 5, N.Y.—F
 Greibach Instruments Corp., 212 Durham Ave., Metuchen, N.J.—A,G,L,N,O,P,X
 Gulton Mfg. Corp., 212 Durham Ave., Metuchen, N.J.—A,G,L,N,O,P,R,X
 G. W. Associates, P. O. Box 2263, E. Segundo, Calif.—X,Y
 HD Electric Co., 760 Osterman Ave., Deerfield, Ill.—A
 Heath Co., 305 Territorial, Benton Harbor, Mich.—I,P,V,W
 Hewlett-Packard Co., 395 Page Mill Rd., Palo Alto, Calif.—F,Q,W
HICKOCK ELECTRICAL INSTRUMENT CO., 10514 Dupont Ave., Cleveland 8, Ohio—A,C,F,I,O,P,Q,R,S,U,W,X,Y
 Hoyt Electrical Instrument Works, 42 Carleton St., Cambridge, Mass.—A,L,O,X
 Hycon Mfg. Co., 2961 E. Colorado St., P.O. Box 155, Pasadena 4, Calif.—P,W
 Industrial Instruments Inc., 89 Commerce Rd., Cedar Grove, N.J.—K
 Industrial Test Equipment Co., 55 E. 11 St., New York 3, N.Y.—T,W,Y
 Instrument Electronics Corp., 90 Main St., Port Washington, N.Y.—W
 Instrument Labs., 315 W. Walton Pl., Chicago, Ill.—P
 International Instruments, Inc., P. O. Box 2954, New Haven 15, Conn.—A,C,L,O,P,X
 Janco Corp., 311 Winona Ave., Burbank, Calif.—A
 J-B-T Instruments, 441 Chapel St., New Haven, Conn.—G
 Keithley Instruments, 3868 Carnegie Ave., Cleveland 15, Ohio—A,D,I,K,L,N,O,W
 Kings Electronics Co., 40 Marbledale Rd., Tuckahoe, N.Y.—F
 Kirby Products Corp., 175 Fifth Ave., New York 10, N.Y.—P,R,W,X
 Land-Air, Inc., 201 N. Wells St., Chicago 6, Ill.—D
 Landis & Gyr, 45 W. 45th St., New York 36, N.Y.—Z
 Lavoie Labs., Inc., Morganville, N.J.—F,H
 Loral Electronics Corp., 794 E. 140 St., New York 54, N.Y.—F
 Lyman Electronic Corp., 12 Cass St., Springfield, Mass.—R
 MacLead & Hanopol, 10 Roland St., Charlestown, Mass.—B,K
 Marion Electrical Instrument Co., 400 Canal St., Manchester, N.H.—A,C,E,G,I,K,L,O,P,R,S,X
MEASUREMENTS CORP., Boonton, N.J.—Q,T,W
 Meters, Inc., 5353 N. Keystone Ave., Indianapolis 20, Ind.—A,C,G,I,L,O,R,S,X
 Metropolitan Electronics & Instruments Co., 106 5 Ave., New York 11, N.Y.—A,B,W,X
 Metrotype Corp., 6100 Archer Rd., Summit, Ill.—A,I,J,Z
 Midwestern Geophysical Lab., 3401 S. Harvard, Tulsa, Okla.—G
 Mil Instrument Corp., 92-15 172 St., Jamaica 33, N.Y.—A,C,G,I,J,L,O,P,R,S,X

Millen Mfg. Co., James, 150 Exchange St., Malden, Mass.—F
 Miller Instruments, Inc., Wm., 325 No. Halstead Ave., Pasadena 8, Calif.—G
 MILLIVAC INSTRUMENT CORP., 444 2 St., Schenectady, N.Y.—L.N.O.P.W
 Munston Mfg. & Service Inc., Beech St., Islip, N.Y.—P.R.W
 Nassau Research & Devel. Assoc., 66 Main St., Mineola, N.Y.—F
 National Capacitor Co., 585 Washington St., Quincy 69, Mass.—B
 National Electrical Machine Shops, 919 Jesup Blair Dr., Silver Spring, Md.—T
 Neutronic Associates, 87-16 116th St., Richmond Hill, N.Y.—I
 Non-Linear Systems, Box "S", Del Mar, Calif.—X
 North American Instruments, 3445 Cahuenga Blvd., Los Angeles 28, Calif.—F
 OMCO Test Equip., Box 196, N. Las Vegas, Nev.—I,K,L,N.O.P.R.S.W.X
 Peerless TV Radio Co., 6508 Euclid Ave., Cleveland, Ohio—W
 PHAOSTRON CO., 151 Pasadena Ave., S. Pasadena, Calif.—A,B,C,G,I,J,K,L,N.O.P.R.S.W.X.Y
 PHILCO CORPORATION—Accessory Div., "A" & Allegheny Ave., Philadelphia 34, Pa.—W.X.Y
 Phoenix Precision Instrument Co., 3803 5 St., Philadelphia 40, Pa.—C,G,N
 Precise Development Corp., 999 Long Beach Rd., Oceanside, L.I., N.Y.—W
 Precise Measurements Co., 942 Kings Highway, Brooklyn 23, N.Y.—I
 Precision Apparatus Co., 92-27 Horace Harding Blvd., Elmhurst, N.Y.—A,C,G,I,L,O.P.R.W.X
 Pyramid Instrument Corp., 630 Merrick Rd., Lynbrook, N.Y.—A,P,X
 Radio City Products Co., 101 W. 31 St., New York 1, N.Y.—B,F,K,O,P.R.S.W.X
 RADIO CORP. OF AMERICA, RCA TUBE DEPT., 415 S. 5 St., Harrison, N.J.—A,K,L,N,O.P.R.W
 Radio Kits, Inc., 120 Cedar St., New York 6, N.Y.—R,W,X
 Rawson Electrical Instrument Co., 117 Potter St., Cambridge 42, Mass.—A,C,D,E,G,I,K,L,N.O.P.R.S.X.Y
 Resdel Eng'g., 2351 Riverside Dr., Los Angeles 39, Calif.—B,V
 Research Electronics Labs., Roslyn, Pa.—W
 Rowe Industries, 1702 Wayne St., Toledo 9, Ohio—I
 Rubicon Co., Ridge Ave. at 35th St., Philadelphia 32, Pa.—C,E,G
 Scott, Inc., Herman Hosmer, 385 Putnam Ave., Cambridge 39, Mass.—Q
 Seay Instrument Co., 6521 N. Lamar Blvd., Austin 5, Texas—W
 Sensitive Research Instrument Corp., 9 Elm Ave., Mount Vernon, N.Y.—A,C,D,E,F,G,H,I,J,K,L,O.P.R.S.X.Y
 SHALLCROSS MFG. CO., 520 Pusey Ave., Coalingdale, Pa.—A,G,H,I,K,O,P,R
 Sierra Electronic Corp., 1050 Brittan Ave., San Carlos, Calif.—W,X,Y
 Simpson Electric Co., 5200 W. Kinzie St., Chicago 44, Ill.—A,C,G,I,K,L,O.P.R.W.X.Y
 Snuckler & Co., A.F., 202 Tillary St., Brooklyn 1, N.Y.—W
 Southwestern Industrial Electronics Co., 2831 Post Oak Rd., Houston, Texas—K,W
 Sparton Radio Television, 2400 E. Ganson St., Jackson Mich.—F
 Special Instruments Lab., Inc., 312 W. Vine St., Knoxville, Tenn.—D,K
 Specialty Assembling & Packing Co., 79 Clifton Pl., Brooklyn 38, N.Y.—P,W
 Spellman Television Co., 3029 Webster Ave., Bronx 67, N.Y.—I
 Sterling Mfg. Co., 7201 Wentworth Ave., Cleveland 2, Ohio—A,O,X
 Sticht Co., Herman H., 27 Park Place New York 7, N.Y.—K,R
 Stoddart Aircraft Radio Co., 6644 Santa Monica Blvd., Hollywood 38, Calif.—Q
 Streeter-Amet Co., 4101 N. Ravenswood Ave., Chicago 13, Ill.—U,Z
 Sun Electric Corp., Harlem & Avondale Aves., Chicago 31, Ill.—A,C,X
 Supreme, Inc., Greenwood, Miss.—A,C,G,L,N,O.P.R.S.W,X
 Taco West Corp., 525 N. Noble St., Chicago 22, Ill.—C,G
 TECHNOLOGY INSTRUMENT CORP., 53 Main St., Acton, Mass.—G,H,T,V
 TELECHROME MFG. CORP., 88 Merrick Rd., Amityville, N.Y.—T
 Telecomputing Corp., 133 E. Santa Anita Ave., Burbank, Calif.—K,O,P,R,X
 Telescreen Corp., 36 Grove St., New Canaan, Conn.—B
 Thompson Clock Co., H.C., 38 Federal St., Bristol, Conn.—A,B,D,F,G,R,T,U
 T.I.G. Electric Corp., 31 West 27th St., New York 1, N.Y.—E,O
 Transition, Inc., 154 Spring St., New York 12, N.Y.—K
 Triplett Electrical Instrument Co., Harmon Rd., Bluffton, Ohio—A,C,F,G,L,O.P.R.W,X,Y
 Trio Laboratories, P.O. Box 143, Wantagh, L.I., N.Y.—W,X,AD
 United States Gauge Div. American Machine & Metals, Inc., Clymer Ave., Sellersville, Pa.—A

ELECTRONIC INDUSTRIES DIRECTORY

Universal Scientific Co., 1102 Shelby St., Vincennes, Ind.—A,C,O,P
 Valtronics, Inc., 242 Valley St., Dayton 4, Ohio—P
 Videon Electronic Corp., 222 E. Ohio St., Indianapolis 4, Ind.—R
 Walkirt Co., 145 W. Hazel St., Inglewood 3, Calif.—F
 Wang Labs., 296 Columbus Ave., Boston 16, Mass.—F
 Waveforms, Inc., 333 6 Ave., New York, N.Y.—W
 WELCH MFG. CO., W.M., 1515 Sedgwick St., Chicago 10, Ill.—A,C,I,L,O.P.R.U.X,Y
 Westberg Mfg. Co., 144 S. Coombs St., Napa, Calif.—F
 West Coast Electronics Co., 5873 W. Jefferson Blvd., Los Angeles 16, Calif.—F
 Western Radiation Lab., 1107 W. 24 St., Los Angeles 7, Calif.—D
 Westinghouse Electric Corp., Box 868, Pittsburgh 30, Pa.—A,C,F,I,J,K,L,O.P.R.T.U,X,Y,Z
 WESTON ELECTRICAL INSTRUMENT CORP., 614 Frelinghuysen Ave., Newark 5, N.J.—A,C,F,G,K,L,N,O.P.R.S.T,U,Y
 Winslow Co., 9 Liberty St., Newark 5, N.J.—A,C,F,G,K,L,O,R,X

52—METERS—RF

Meters, ammeters, RF A
 Meters, attenuation B
 Meters, decibel C
 Meters, distortion D
 Meters, field strength E
 Meters, FM deviation F
 Meters, frequency G
 Meters, grid dip H
 Meters, microwave I
 Meters, noise J
 Meters, output K
 Meters, phase angle L
 Meters, R-F power M
 Meters, standing wave ratio N
 Meters, wave O

Advance Electronics Co., P. O. Box 394, Passaic, N.J.—L
 Air Associates, Teterboro, N.J.—F
 Airborne Instruments Laboratory, 160 Old Country Rd., Mineola, L.I., N.Y.—N
 Airtron Inc., 1103 W. Elizabeth Ave., Linden, N.J.—I,N
 Ansley Electronics, Inc., 85 Tremont St., Meriden, Conn.—N
 Approved Electronic Inst. Corp., 928 Broadway, New York 10, N.Y.—E
 A.R.F. Products, Inc., 7627 Lake St., River Forest, Ill.—F
 Assembly Products, Inc., P.O. Box 191, Chagrin Falls, Ohio—A
 Barker & Williamson, Inc., 237 Fairfield Ave., Upper Darby, Pa.—D,G,H,J,M
 Bassett Inc., Rex, 1314 NE 17th Court, Ft. Lauderdale, Fla.—E,G,H
 Bell Television Inc., 254 W. 54th St., New York 19, N.Y.—E
 Biddle Co., Jas. G., 1316 Arch St., Philadelphia 7, Pa.—G
 Browning Labs., Inc., 750 Main St., Winchester, Mass.—F,G,N
 Budd-Stanley, Co., 43-01 22nd St., Long Island City 1, N.Y.—B,I,N,O
 Budelman Radio Corp., 375 Fairfield Ave., Stamford, Conn.—E,F,G,M
 Burlington Instrument Co., 203 N. 3 St., Burlington, N.J.—B,E,F,G
 Century Electronics, Div. Century Metalcraft Corp., 14806 Oxnard St., Van Nuys, Calif.—O
 Chicago Industrial Instrument Co., 536 W. Elm St., Chicago 10, Ill.—A
 Clark Crystal Co., 2 Farm Rd., Marlboro, Mass.—G
 Color Television Inc., 973 E. San Carlos Ave., San Carlos, Calif.—N
 Colortone Electronics, 238 William St., New York 38, N.Y.—G
 Conn. Telephone & Electric Co., 70 Britannia St., Meriden, Conn.—G
 Control Electronics Co., 1925 New York Ave., Huntington Station, N.Y.—M
 Cubic Corp., Scott & Canon Sts., San Diego 6, Calif.—N
 Daven Co., 191 Central Ave., Newark 4, N.J.—B,C,D
 Deltron Inc., P. O. Box 192, Glenside, Pa.—L
 DeMornay-Bonardi, Inc., 780 S. Arroyo Pkway, Pasadena, Calif.—I,N,O
 DIAMOND MICROWAVE CORP., 7 North Ave., Wakefield, Mass.—O
 Douglas Microwave Co., 11 Beechwood Ave., New Rochelle, N.Y.—G,I,O

Dubrow Development Co., 235 Penn St., Burlington, N.J.—B,E,F,G
 Dyna-Labs, Inc., 1075 Stewart Ave., Garden City, L.I., N.Y.—E
 EDISON, INC., THOMAS A. INSTRUMENT DIV., Lakeside Ave., W. Orange, N.J.—N
 Eldico of N.Y., Inc., 70-72 E. Second St., Mineola, L.I., N.Y.—E,G,H,M
 Electro Impulse Lab., 62 White St., Red Bank, N.J.—G,I,K,M,N,O
 Electron-Radar Products, 1041 N. Pulaski Rd., Chicago 51, Ill.—B,I,M
 Electro-Tech Equip. Co., 308 Canal St., New York, N.Y.—A
 Elk Electronic Labs., Inc., 333 W. 52 St., New York 19, N.Y.—E,J,O
 Empire Devices, Inc., 38-25 Bell Blvd., Bay-side 61, N.Y.—D,E,J
 ENGINEERING RESEARCH & DEVEL. CO., Addison, Ill.—J
 FEDERAL TELEPHONE & RADIO DIV. I.T. & T. CORP., 100 Kingsland Rd., Clifton, N.J.—E
 Feiler Eng'g. & Mfg. Co., 8026 N. Monticello Ave., Skokie, Ill.—C,G,H,J,K,M
 Ferris Instrument Co., 110 Cornelia St., Boonton, N.J.—E,J
 F-R Machine Works, 44-14 Astoria Blvd., Long Island City 3, N.Y.—G,I,N,O
 Frequency Standards, P. O. Box 504, Asbury Park, N.J.—G
 Gaskins Co., 1005 Saurora Way, Wheaton, Ill.—A,H
 GENERAL COMMUNICATION CO., 681 Beacon St., Boston 15, Mass.—I,M
 GENERAL ELECTRIC CO., 1 River Rd., Schenectady, N.Y.—A
 GENERAL ELECTRIC CO Apparatus Div., 1 River Rd., Schenectady 5, N.Y.—A,G,I
 GENERAL RADIO CO., 275 Mass. Ave., Cambridge 39, Mass.—D,F,G,O
 GERTSCH PRODUCTS, INC., 11846 Miss Ave., Los Angeles 25, Calif.—G
 Granco Products Inc., 36-17 20 Ave., Long Island City 5, N.Y.—G,H
 G.W. Associates, P. O. Box 2263, El Segundo, Calif.—I
 Hewlett-Packard Co., 395 Page Mill Rd., Palo Alto, Calif.—G,I,N,O
 Hycon Mfg. Co., 2961 E. Colo. Blvd., Pasadena 8, Calif.—I
 Industrial Television, 369 Lexington Ave., Clifton, N.J.—E
 Jerrold Electronics Corp., 26 & Dickinson Sts., Philadelphia 46, Pa.—E
 Jones Electronics Co., M.C., 185 N. Main St., Bristol, Conn.—M,N
 Kings Electronics Co., 40 Marbledale Rd., Tuckahoe, N.Y.—B,G,I,M,N,O
 Korh Eng'g. & Mfg. Co., 30 Ottawa Ave., Grandville, Mich.—I
 Lampkin Labs., Inc., Bradenton 2, Fla.—F,G
 Lavoie Labs, Inc., Morganville, N.J.—G,N,O
 Lear, Inc., 11916 W. Pico Blvd., Los Angeles 64, Calif.—E
 Lerner Instrument & Electronic Mfg. Corp., G P O Box 620, Brooklyn 1, N.Y.—N
 Linear Equipment Labs, Inc., Brightwater Place, Massapequa, N.Y.—H,O
 Lorai Electronics Corp., 794 E. 140 St., New York 54, N.Y.—G
 Lysoe Mfg. Co., 1401 Clinton St., Hoboken, N.J.—H
 Magnex Corp., 90-28 Van Wyck Expressway, Jamaica 18, N.Y.—M
 Maxson Corp., W. L., 460 W. 34 St., New York 1, N.Y.—L
 MEASUREMENTS CORP., Boonton, N.J.—E,H,J
 MICO INSTRUMENT CO., 75 Trowbridge St., Cambridge 38, Mass.—I,O
 Midwest Eng'g. Devel. Co., 3648 State Line Kansas City 3, Kansas—G,I,M,N,O
 Mil Instrument Corp., 92-15 72 St., Jamaica 33, N.Y.—C
 Millen Mfg. Co., James, 150 Exchange St., Malden, Mass.—G,H,N,O
 MILLIVAC INSTRUMENT CORP., 444 2 St., Schenectady, N.Y.—A,C,M
 Nassau Research & Development Assoc., 66 Main St., Mineola, N.Y.—I,M,N,O
 National Electrical Machine Shops, 919 Jesup Blair Dr., Silver Spring, Md.—E,I
 NEW LONDON INSTRUMENT CO., New London, Conn.—H,J
 North American Instruments, 3445 Cahuenga Blvd., Los Angeles 28, Calif.—G
 OMCO Test Equip., Box 196, N. Las Vegas, Nev.—C
 Peters Co., O. S., 1353 N.Y. Ave., N.E., Washington 2, D.C.—G
 PHAOSTRON CO., 151 Pasadena Ave., S. Pasadena, Calif.—A,C,E,K,M
 POLARAD ELECTRONICS CORP., 100 Metropolitan Ave., Brooklyn 11, N.Y.—M
 POLYTECHNIC RESEARCH & DEVELOPMENT CO., 202 Tillary St., Brooklyn 1, N.Y.—N
 Radio City Products Co., 101 W. 31 St., New York 1, N.Y.—C,H,K
 RADIO CORP. OF AMERICA, RCA VICTOR DIV., ENG'G. PRODUCTS DIV., Camden 5, N.J.—A
 Radion Corp., 1130 W. Wisconsin Ave., Chicago 14, Ill.—E
 Resdel Eng'g Corp., 2351 Riverside Dr., Los Angeles 39, Calif.—E
 Rollin Co., 2010 N. Lincoln Ave., Pasadena 8, Calif.—N

Seismograph Service Corp., 701 Kennedy Bldg., Tulsa, Okla.—N
 Sensitive Research Instrument Corp., 9 ELM Ave., Mt. Vernon, N.Y.—A
 Sierra Electronic Corp., 1060 Brittan Ave., San Carlos, Calif.—M.N
 Simpson Electric Co., 5208 W. Kinzie St., Chicago 44, Ill.—A
 Sparton Radio Television, 2400 E. Ganson St., Jackson, Mich.—G
 Sperry Gyroscope Co., Great Neck, N.Y.—B, G.I.N.O
 Stoddart Aircraft Radio Co., 6644 Santa Monica Blvd., Hollywood 38, Calif.—E
 Supreme, Inc., Greenwood, Miss.—K
TECHNOLOGY INSTRUMENT CORP., 531 Main St., Acton, Mass.—L
TELECHROME MFG. CORP., 88 Merrick Rd., Amityville, N.Y.—I
TEL-INSTRUMENT CO., 728 Garden St., Carlstadt, N.J.—B
TEXAS INSTRUMENTS INC., 6000 Lemmon Ave., Dallas 9, Tex.—H.I
 Thompson Clock Co., H. C., 39 Federal St., Bristol, Conn.—G.L.M
 Thompson Products Inc., 2196 Clarkwood Rd., Cleveland 3, Ohio—O
 Trad Television Corp., 1001 1 Ave., Asbury Park, N.J.—N
 Transvision, Inc., 460 North Ave., New Rochelle, N.Y.—E
 Triplett Electrical Instrument Co., Harmon Rd., Bluffton, Ohio—A
 U. S. Electrical Motors Inc., 200 E. Slauson Ave., Los Angeles 64, Calif.—D
VECTRON, INC., 400 Main St., Waltham 54, Mass.—G.I.N
 Vidair Electronics Mfg. Co., 576 W. Merrick Rd., Lynbrook, L.I., N.Y.—O
 Walkirt Co., 145 W. Hazel St., Inglewood 3, Calif.—G
 Wang Labs., 296 Columbus Ave., Boston 16, Mass.—G
WAVELINE, INC., Passaic Ave., Caldwell, N.J.—N
WELCH MFG. CO., W. M., 1515 Sedgewick St., Chicago 10, Ill.—C
 West Coast Electronics Co., 5873 W. Jefferson Blvd., Los Angeles 16, Calif.—F.G
 Westinghouse Electric Corp., Box 868, Pittsburgh 30, Pa.—A
WESTON ELECTRICAL INSTRUMENT CORP., 614 Frelinghuysen Ave., Newark 5, N.J.—A.C.G.K.I
 Weston Labs., Inc., Old Littleton Rd., Harvard, Mass.—N.O
 Weymouth Instrument Co., 1440 Commercial St., E. Weymouth 89, Mass.—I.N.O
 White Industries, Inc., 421 W. 54th St., New York 19, N.Y.—G.H.O

Aero Electronics Co., 1512 N. Wells St., Chicago 10, Ill.—N.O.P.R.T.V
 American Chronoscope Corp., 316 W. 1 St., Mount Vernon, N.Y.—G.R.A.H
 American Optical Co., Instrument Div., Box A, Buffalo 16, N.Y.—U
 Amplifier Corp. of America, 398 Broadway, New York 13, N.Y.—K
 Amthor Testing Instrument Co., 45 Van Sinderen Ave., Brooklyn 7, N.Y.—V
 Anton Electronic Labs., 1226 T. Flushing Ave., Brooklyn 37, N.Y.—A.A.A.F
 Atomic Instrument Co., 84 Mass. Ave., Cambridge 39, Mass.—G.H.V.A.F.A.G
 Authorized Mfrs. Service Co., 919 Wyckoff Ave., Brooklyn 27, N.Y.—P
 Automatic Temperature Control Co., 5212 Pulaski Ave., Philadelphia 44, Pa.—D.E.T
Auto-Test, Inc., 500 S. Michigan Ave., Chicago 5, Ill.—V
 Budget Meter Mfg. Co., 2371 N. 30th St., Milwaukee 45, Wis.—J
 Bailey Meter Co., 1050 Ivanhoe Rd., Cleveland 10, Ohio—J.Q.S.T.X
 Baird Associates, Inc., 33 University Rd., Cambridge, Mass.—U.A.K
 Baldwin-Lima-Hamilton Corp., Philadelphia 42, Pa.—F
 Barton Electronics, Inc., 865 Asylum Ave., Hartford 5, Conn.—R
 Batson Electronics Corp., J. A., 1031 S. 27 St., Omaha, Nebr.—V.A.B
 Beckman Instruments, Inc., 820 Mission St., S. Pasadena 1, Calif.—Q
BENDIX AVIATION CORP., PACIFIC DIV., 11600 Sherman Way, N. Hollywood, Calif.—A.D.F.Y
 Berkeley Div., Beckman Instruments, Inc., 2200 Wright Ave., Richmond 3, Calif.—C, G.H.J.O.R.V
 Biddle Co., Jas. G., 1816 Arch St., Philadelphia 7, Pa.—V.A.I
 Bodnar Industries, 19 Rail Road Ave., New Rochelle, N.Y.—L.M
 Bone Eng'g. Corp., 701 W. Broadway, Glendale 4, Calif.—J
 Borden Eng'g. Co., 63 Clinton Ave., New Providence, N.J.—B
BOURNS LABORATORIES, 6135 Magnolia Ave., Riverside, Calif.—A
 Brinkmann Instruments Inc., 378 Great Neck Rd., Great Neck, L.I., N.Y.—I
 Burlington Instrument Co., 203 N. 3 St., Burlington, Iowa—G.P.W.X.A.I
 Calidyne Co., 120 Cross St., Winchester, Mass.—Y
 Cal-Tronics Corp., 11307 Hindry Ave., Los Angeles 45, Calif.—T
 Cambridge Instrument Co., 3033 Grand Central Terminal, New York 17, N.Y.—O.Q.S, A.C.A.F
 Century Metalcraft Corp., 14806 Oxnard St., Van Nuys, Calif.—Y
 Chicago Industrial Instrument Co., 536 W. Elm St., Chicago 10, Ill.—S.W.X
 Clary Multiplier Corp., San Gabriel, Calif.—C.H
 Clegg Laboratories, 142 S. Livingston Ave., Livingston, N.J.—B.P
 Computer Co. of America, Div. of Bruno NY Industries Corp., 149 Church St., New York 7, N.Y.—P
 Consolidated Eng'g. Corp., 300 N. Sierra Madre Villa, Pasadena 15, Calif.—Y
 Control Eng'g. Corp., 560 Providence Hwy., Norwood, Mass.—J
 Cramer Co., R.W., Centerbrook, Conn.—G.I, A.G.A.H
DEJUR-AMSCO CORP., 45-01 Northern Blvd., Long Island City, N.Y.—1
 Delaware Optical Labs., 36 Williams St., Lansdowne, Pa.—I.M.R.U
 Delmhorst Instrument, 607 Cedar St., Boonton, N.J.—O
 Deltron Inc., P.O. Box 192, Glenside, Pa.—P
 Demco Products, P.O. Box 5042, Philadelphia 11, Pa.—C
 Detectolab, Inc., 6544 Sheridan Rd., Chicago 26, Ill.—C.A.F
 Dice Co., J. W., 1 Engle St., Englewood, N.J.—N
 Digital Instrument Co., 212 Almeria Ave., Coral Gables, Fla.—C.G.H.V
 Dillon & Co., W. C., 14620 Keswick St., Van Nuys, Calif.—X.A.C
 Dimco-Gray Co., 207 E. 6 St., Dayton 2, Ohio—A.H
 Doelcam Corp., 1400 Soldiers Field Rd., Boston 35, Mass.—D.Z
 Douglas Instrument Labs., 176 Norfolk Ave., Boston 19, Mass.—A.B.A.F.A.G
 Dubrow Development Co., 235 Penn St., Burlington, N.J.—B.H
 Duncan & Bayley, Inc., 785 Hertel Ave., Buffalo 7, N.Y.—F
 Dwyer Mfg. Co., F.W., 317 S. Western Ave., Chicago 12, Ill.—J
EDISON, INC., THOS. A., INSTRUMENT DIV., 93 Lakeside Ave., W. Orange, N.J.—T.X
 Electrical Service Co., 1271 Mission St., San Francisco 3, Calif.—R
 Electrofilm Inc., 7116 Laurel Canyon Blvd., N. Hollywood, Calif.—C.D.G.S.W.X.Z
 Electro-Mechanical Instrument Co., 812 Chestnut St., Perkasie, Pa.—A.B
 Electronic Products Co., 111 E. 3rd St., Mt. Vernon, N.Y.—A.F
 Electro-Physics Co., 287 Broadway, New York 7, N.Y.—I.M.R

Electro-Tech Equip. Co., 308 Canal St., New York, N.Y.—G.L.S.V.W.X.A.B
 Electro-Technica, Inc., 198 Albion Ave., Paterson, N.J.—B
 El-Tronics, Inc., 5 & Noble Sts., Philadelphia 23, Pa.—H.A.F
 Endevo Corp., 180 E. Calif. St., Pasadena 1, Calif.—A
 Engineering Research & Devel. Co., Addison, Ill.—V.Y
 Esterline-Angus Co., Inc., P. O. Box 596, Indianapolis, Ind.—G.V.A.B.A.H
 Feiler Eng'g. & Mfg. Co., 8026 N. Monticello Ave., Skokie, Ill.—S.W
 Field Electrical Instrument Co., 8 N. Mannheim Blvd., New Platz, N.Y.—W
 Fielden Instrument Div., Robertshaw-Fulton Controls Co., 2920 N. 4 St., Philadelphia 33, Pa.—N.O
 Franklin Electronics, 415 W. Pike St., Philadelphia 40, Pa.—A.G.A.H
 Furst Electronics, 3322-A W. Lawrence Ave., Chicago 25, Ill.—K
 Gardner Lab. Inc., Henry A., 4723 Elm St., Bethesda, Md.—R.Z
 Gaskins Co., 1005 S. Aurora Way, Wheaton, Ill.—X
GENERAL CONTROL CO., 1200 Soldiers Field Rd., Boston 34, Mass.—A.H
GENERAL ELECTRIC CO., 1 River Rd., Schenectady, N.Y.—A, B, G, I, J, L, M, O, P, R, S, U, V, W, Y, Z, A.B, A.E, A.F, A.H
 General Hermetic Sealing Corp., 99 E. Hawthorne Ave., Valley Stream, N.Y.—B
GENERAL RADIO CO., 275 Mass. Ave., Cambridge 39, Mass.—A.B.L.M.P.V.Y
 General Riveters Inc., Elmwood & Hertel, Buffalo 7, N.Y.—F
 Giannini & Co., G. M., 914 E. Green St., Pasadena 1, Calif.—A.M
 G-M Labs. Inc., 4300 N. Knox Ave., Chicago 41, Ill.—R.V
 Gray Instrument Co., 64 W. Johnson St., Philadelphia 44, Pa.—S
 Greibach Research & Devel. Labs., 80 Fryer Terrace, New Rochelle, N.Y.—A.A
GULTON MFG. CO., 212 Durham Ave., Metuchen, N.J.—A.N.Y
 Hall Inc., F. Sumner, Amityville, N.Y.—B
 Haydon Mfg. Co., 245 East Elm St., Torrington, Conn.—G.A.H
 Hays Corp., E. 8th St., Michigan City, Ind.—J
 Hewlett-Packard Co., 395 Page Mill Rd., Palo Alto, Calif.—V
 Huppert Co., K. H., 6830 S. Cottage Grove Ave., Chicago 37, Ill.—S
 Hycon Mfg. Co., 2961 E. Colorado St., Pasadena 8, Calif.—K.A.E
 IDEA, Inc., Regency Div., 7900 Pendleton Pike, Indianapolis 26, Ind.—V
 Ideal Industries, 3316 Park Ave., Sycamore, Ill.—V
 Illinois Testing Labs., 420 N. La Salle St., Chicago 10, Ill.—W.X
 Impact-O-Graph Corp., 1900 Euclid Bldg., Cleveland 15, Ohio—A.H.Y
 Impact Register Co., P.O. Box 445, Champaign, Ill.—A
 Industrial Test Equipment Co., 55 E. 11th St., New York 3, N.Y.—P
 Industrial Timer Corp., 131 Ogden St., Newark 4, N.J.—A.H
 Instrument Labs., 315 W. Walton Pl., Chicago, Ill.—A.B
 International Research & Devel. Corp., 168 E. Hoosack St., Columbus 7, Ohio—Y
 Iq Industries, 6110 Wilshire Blvd., Los Angeles 36, Calif.—C.H.R
 Jack Scientific Instrument Co., Bill, Box C-4, Solana Beach, Calif.—I.M.R
 Janco Corp., 311 Winona Ave., Burbank, Calif.—A.B
 J-R-T Instruments, 441 Chapel St., New Haven, Conn.—G.S.W
 Jordan Electronic Mfg. Co., 119 E. Union St., Pasadena 1, Calif.—A.A.A.I
KAY ELECTRIC CO., 14 Maple St., Pine Brook, N.J.—V
 Kearfott Co., 1378 Main Ave., Clifton, N.J.—A.V
KOLLSMAN INSTRUMENT CORP., 80-08 45th Ave., Elmhurst, N.Y.—V
 Link Aviation, Inc., Binghamton, N.Y.—N
 Magnex Corp., 90-28 Van Wyck Expressway, Jamaica 18, N.Y.—R.W
 Manning, Maxwell & Moore, 250 E. Main St., Stratford, Conn.—X
MANUFACTURERS ENGG. & EQUIP. CORP., York & Mill Rds., Hatboro, Pa.—C.H
 Marion Electrical Instrument Co., 400 Canal St., Manchester, N.H.—G.I.I.M.P.R.A.B
 Maurer Inc., J.A., 37-01 31st St., Long Island City 1, N.Y.—I
 Maxson Corp., W.L., 460 W. 34th St., New York 1, N.Y.—J
 May Eng'g. Co., 6055 Lankershim Blvd., No. Hollywood, Calif.—C
MB Mfg. Co., 1060 State St., New Haven 11, Conn.—Y
 Metron Instrument Co., 432 Lincoln St., Denver 3, Colo.—V
 Metrotype Corp., 6100 Archer Rd., Summit, Ill.—B.J
 Minneapolis-Honeywell Regulator Co., Minneapolis 8, Minn.—J

53—METERS, SPECIAL PURPOSE

Machmeters	.....	AM
Meters, acceleration	.....	A
Meters, cable testing	.....	B
Meters, counting rate	.....	C
Meters, deflection	.....	D
Meters, density	.....	E
Meters, dosimeter	.....	AC
Meters, dynamometer	.....	F
Meters, elapsed time	.....	G
Meters, events-per-unit time	.....	H
Meters, exposure for film	.....	I
Meters, flame photometer	.....	AK
Meters, flow	.....	J
Meters, flutter	.....	K
Meters, foot candle	.....	L
Meters, goniometer	.....	AD
Meters, infrared	.....	AE
Meters, light	.....	M
Meters, electronic micrometer	.....	N
Meters, moisture	.....	O
Meters, nuclear radiation	.....	AF
Meters, null	.....	P
Meters, pH	.....	Q
Meters, photoelectric	.....	R
Meters, pyrometer	.....	S
Meters, rate	.....	AG
Meters, ratio	.....	T
Meters, spectral	.....	U
Meters, tachometer	.....	V
Meters, tension	.....	AL
Meters, thermocouple	.....	W
Meters, thermometer	.....	X
Meters, time	.....	AH
Meters, vibrating reed	.....	AI
Meters, vibration	.....	Y
Meters, viscosity	.....	Z
Meters, volume	.....	AJ
Meters, x-ray intensity	.....	AA
Meter shunts	.....	AB

National Electrical Machine Shops, 919 Jesup Blair Dr., Silver Spring, Md.—AE
 Non-Linear Systems, Del Mar Airport, Del Mar, Calif.—T
 North American Phillips Co., 750 S. Fulton Ave., Mount Vernon, N.Y.—Q
 Nuclear Instrument & Chemical Corp., 223 W. Erie St., Chicago 10, Ill.—AC
 Nuclear Research & Devel. Co., 6425 Etzel Ave., St. Louis 14, Mo.—CAA
 Nucleonic Co. of America, 497 Union St., Brooklyn 31, N.Y.—AA
 Olympic Devel. Co., Div. Olympic Radio-TV, 30 Commerce Rd., Stamford, Conn.—S
 Pacific Mercury TV Mfg. 5955 Van Nuys Blvd., Van Nuys, Calif.—B
 Peters Co., O. S., 1353 N.Y. Ave., N.E., Washington 2, D.C.—N.P
 PHAOSTRON CO., 151 Pasadena Ave., S. Pasadena, Calif.—N.P.A.B.A.J
 Philadelphia Scientific Glass Co., 4 Eckard Ave., Abington, Pa.—O.X
 Phoenix Precision Instrument Co., 3803 N. 5 St., Philadelphia 40, Pa.—M.R
 Photobell Co., 116 Nassau St., New York 38, N.Y.—R
 Photocon Research Products, 421 N. Foothill Blvd., Pasadena 8, Calif.—C.M
 Photo Research Corp., 127 W. Alameda Ave., Burbank, Calif.—M
 Photovolt Corp., 95 Madison Ave., New York 16, N.Y.—E.I.L.Q.R
 Physical Research Labs., 1909 Park Ave., New York 35, N.Y.—O
 Potter Instrument Co., 115 Cutter Mill Rd., Great Neck, N.Y.—C.G.H.T.V.A.F.A.G.A.H
 Precise Measurements Co., 942 Kings Highway, Brooklyn 23, N.Y.—B.A.E
 Precision Scientific Co., 3737 W. Cortland St., Chicago 47, Ill.—O
 Process & Instruments, 15 Stone Ave., Brooklyn 33, N.Y.—Q.R
 Pyrometer Instrument Co., 92 Portland Ave., Bergenfield, N.J.—S.W.X
 Radar Engineers, 4528 5th NE, Seattle 5, Wash.—B
 Radiation Counter Labs, Inc., 5122 W. Grove St., Skokie, Ill.—C.A.C.A.F.A.G
 Radio City Products Co., 101 W. 31 St., New York 1, N.Y.—N
 Rawson Electrical Instrument Co., 117 Potter St., Cambridge 42, Mass.—W
 R-C Scientific Instrument Co., 307 Culver Blvds., Playa Del Rey, Calif.—AA
 Resdel Eng'g., 2351 Riverside Dr., Los Angeles 39, Calif.—AF
 Revere Corp. of America, 845 N. Colony Rd., Wallingford, Conn.—J.W
 Richards Co., Arklay S., 37 Winchester St., Newton Highlands 61, Mass.—S.W
 Rockwell Eng'g. Co., 4063 N. New Jersey St., Indianapolis 5, Ind.—AH
 Roesch Co., D. J., 2200 S. Figueroa St., Los Angeles 7, Calif.—B
 Rolab Studios, Walnut Tree Hill, Sandy Hook, Conn.—G
 Rowe Industries, 1702 Wayne St., Toledo 9, Ohio—B.P
 Rubicon Co., Ridge Ave. at 35th St., Philadelphia 32, Pa.—AB
 Schaevitz Eng'g., Crescent Blvd. & Drexel Ave., Camden 1, N.J.—A
 Schwiens Eng'g. Co., 16217 Lindberg St., Van Nuys, Calif.—AG
 Scott, Inc., Herman Hosmer, 385 Putnam Ave., Cambridge 39, Mass.—T.Y
 Sensitive Research Instrument Corp., 9 Elm Ave., Mount Vernon, N.Y.—P.R.S.T.W.A.A.
 AB
 Sierra Electronic Corp., 1050 Brittan Ave., San Carlos, Calif.—B
 Simpson Electric Co., 5208 W. Kinzie St., Chicago 44, Ill.—F.X.A.B
 Southwest Products, Inc., Alamo Downs, Box 86-D, San Antonio 4, Tex.—AA.A.F
 Special Instruments Lab., 312 W. Vine St., Knoxville, Tenn.—G
 Standard Electric Time Co., 119 Logan St., Springfield, Mass.—C.G.H.V.A.H
 Standard Electronic Research Corp., 2 East End Ave., New York 21, N.Y.—N.X
 Stewart Instrument Co., 6507 Grand River, Detroit 8, Mich.—H
 Sticht Co., Herman H., 27 Park Pl., New York 7, N.Y.—B.V
 Streeter-Amet Co., 4101 N. Ravenswood Ave., Chicago 13, Ill.—G.H.P.W.A.F
 Supreme, Inc., Greenwood, Miss.—AR
 Taco West Corp., 525 N. Noble St., Chicago 22, Ill.—S.W
 Tech Laboratories Inc., Bergen & Edsall Blvds., Palisades Park, N.J.—Z.A.R
 Technical Products Co., 19 N. Dunlap, Medical Center, P.O. Box 93, Memphis 1, Tenn.—E.I.L.M.O.Q.S.U.V.W.X.Z.A.C.A.H
 Televiso Corp., 1415 Gulf Rd., Des Plaines, Ill.—Y
 Television Zoomar Corp., 500 5th Ave., New York 38, N.Y.—R
 Tensitron, Inc., Pin Hill, Harvard, Mass.—W.A.I
 Thermo Electric Mfg. Co., 465 Huff St., Dubuque, Iowa—W
 Thompson Clock Co., H. C., 38 Federal St., Bristol, Conn.—C.F.G.H.M.R.V.Z
 Thwing-Albert Instrument Co., Penn St. & Pulaski Ave., Philadelphia 44, Pa.—Q.W
 Tracerlab, Inc., 150 High St., Boston 10, Mass.—H.A.C.A.F



Triplett Electrical Instrument Co., Harmon Rd., Bluffton, Ohio—F.W
 U.M. & F. MFG. CORP., 10920 Van Owen St., N. Hollywood, Calif.—U
 VECTRON, INC., 400 Main St., Waltham 54, Mass.—I
 Vibroscope, 6 E. 39 St., New York, N.Y.—Y
 VICTOREEN INSTRUMENT CO., 3800 Perkins Ave., Cleveland 14, Ohio—A.C.Y.A.C.
 AE
 Walkirt Co., 145 W. Hazel St., Inglewood 3, Calif.—G.H.Y
 Welch Electric Co., 1221 Wade St., Cincinnati 14, Ohio—B.R.AA
 WELCH MFG. CO., W. M., 1515 Sedgwick St., Chicago 10, Ill.—E.L.M.Q.R.S.W.A.B.A.C
 West Instrument Corp., 525 N. Noble St., Chicago 22, Ill.—S.W.X
 Western Radiation Lab., 1107 W. 24 St., Los Angeles 7, Calif.—Y
 Westinghouse Electric Corp., Box 868, Pittsburgh 30, Pa.—F.G.V.W.X
 WESTON ELECTRICAL INSTRUMENT CORP., 614 Frelinghuysen Ave., Newark 5, N.J.—B.L.M.O.P.R.S.T.V.X
 Wheeler Instruments Div., Barber-Colman Co., 1300 Rock St., Rockford, Ill.—W
 Williams, Brown & Earle, Inc., 904 Chestnut St., Philadelphia 7, Pa.—I.L.Q.A.E
 Winalow Co., 9 Liberty St., Newark 5, N.J.—H.G.S.Y.A.I
 Wright Eng'g. Co., 180 E. Calif. St., Pasadena 1, Calif.—A.C.G.H.R.T.V.Y
 Zernickow Co., O., 15 Park Row, New York 38, N.Y.—V
 Zoomar, Inc., 55 Sea Cliff Ave., Glen Cove, L.I., N.Y.—E.I.L.M

54—MICROPHONES

Handsets, telephone A
 Microphones, carbon B
 Microphones, ceramic M
 Microphones, condenser C
 Microphones, contact D
 Microphones, crystal E
 Microphones, dynamic F
 Microphones, hearing aid G
 Microphones, lapel N
 Microphones, lip H
 Microphones, magnetic O
 Microphones, pressure I
 Microphones, throat J
 Microphones, velocity K
 Microphones, wireless P
 Sound powered phones Q
 Stethophones L

Aeronautical Radio Mfg. Co., 155 First St., Mineola, N.Y.—A.B.H.J
 Allied Electronic Equip. Co., 425 Brannan St., San Francisco 7, Calif.—Q
 ALTEC LANSING CORP., 9356 Santa Monica Blvd., Beverly Hills, Calif.—C.F.I.K
 American Elite, Inc., 1775 Broadway, New York 19, N.Y.—C
 American Microphone Co., 370 S. Fair Oaks Ave., Pasadena 1, Calif.—B.D.E.F.I.M.N.O
 AMPERITE CO., INC., 561 Broadway, New York 12, N.Y.—D.F.K.N
 Astatic Corp., P.O. Box 120, Conneaut, Ohio—B.E.F.G.M.N
 Audio Instrument Co., 133 W. 14 St., New York 11, N.Y.—C
 Automatic Electric Co., 1033 W. Van Buren St., Chicago 7, Ill.—A
 Barker & Williamson, 237 Fairfield Ave., Upper Darby, Pa.—C
 BELL & HOWELL CO., 7100 McCormick Rd., Chicago 45, Ill.—E.F
 Berndt-Bach, Inc., Auricon Div., 6916 Romaine St., Hollywood 38, Calif.—F
 British Electronic Sales, 23-03 45 Rd., Long Island, N.Y.—G
 BRUSH ELECTRONICS CO., 8405 Perkins Ave., Cleveland 14, Ohio—E.G.N
 Budelman Radio Corp., 375 Fairfield Ave., Stamford, Conn.—P
 Century Lighting Inc., 521 W. 43rd St., New York 25, N.Y.—P
 Communication Devices Co., 2331 12 Ave., New York 27, N.Y.—A.B.H.J
 Conn. Telephone & Electric Co., 70 Britannia St., Meriden, Conn.—B.D.F.H
 Continental Electronics Ltd., 302 Oakland St., Brooklyn 22, N.Y.—I
 Cook Laboratories Inc., 114 Manhattan St., Stamford, Conn.—C
 Dean Electronics, 85 5 Ave., Brooklyn 17, N.Y.—B
 Demco Products, P.O. Box 5042, Philadelphia 11, Pa.—L

Duotone Co., 77 Walling Terrace, Keyport, N.J.—F
 Ectro, Inc., 425 S. Sandusky St., Delaware, Ohio—E
 Electro-Sound Corp., 115 Halleck St., Boston, Mass.—C.D.E.F.H.J.L.N.P
 Electro-Voice, Inc., Cecil & Carroll Sts., Buchanan, Mich.—A.B.D.E.F.I.K.M.P
 FEDERAL TELEPHONE & RADIO CORP. DIV. INT'L TELEPHONE & TELEGRAPH CORP., 100 Kingsland Rd., Clifton, N.J.—A
 GENERAL RADIO CO., 275 Mass. Ave., Cambridge 39, Mass.—C.F
 GRAYBAR ELECTRIC CO., 420 Lexington Ave., New York 17, N.Y.—C.F
 GULTON MFG. CO., 212 Durham Ave., Metuchen, N.J.—M
 Hallen Corp., 3503 W. Olive Ave., Burbank, Calif.—F.K
 Industrial Research Products, 9400 Belmont Ave., Franklin Park, Ill.—G.N.O
 Int'l Research Associates, 221 Warwick Ave., Santa Monica, Calif.—C
 KELLOGG SWITCHBOARD & SUPPLY CO., 79 W. Monroe St., Chicago 8, Ill.—A.C
 Lear, Inc., 11916 W. Pico Blvd., Los Angeles 64, Calif.—B
 Massa Labs., Inc., 5 Fottler Rd., Hingham, Mass.—E
 Mercury Electro-Products, 622 W. Kinzie St., Chicago 10, Ill.—C
 Miles Reproducer Co., 812 Broadway, New York 3, N.Y.—B.D.J.I.M.N
 Mohawk Business Machines Corp., 944 Halsey St., Brooklyn 37, N.Y.—E.J.N
 Molded Insulation Co., 335 E. Price St., Philadelphia 44, Pa.—A.O
 Permoflux Corp., 4900 W. Grand Ave., Chicago 39, Ill.—A.F.H.L.N
 Philmore Mfg. Co., 113 University Pl., New York 3, N.Y.—B
 Photocon Research Products, 421 N. Foothill Blvd., Pasadena 8, Calif.—I
 RADIO CORP. OF AMERICA, RCA VICTOR Div., Front & Cooper Sts., Camden 2, N.J.—E.F.I.J.K.N
 Remler Co., 2101 Bryant St., San Francisco 10, Calif.—A.O
 Roanwell Corp., 662 Pacific St., Brooklyn 17, N.Y.—A.B.F.H.O.Q
 Roesch Co., D. J., 2200 S. Figueroa St., Los Angeles 7, Calif.—A
 Roflan Co., Tonsfield, Mass.—B
 Rowe Industries, 1702 Wayne St., Toledo 9, Ohio—O
 Sears Co., M. J., Roxbury, N.Y.—A.B.F.H.O.Q
 SHURE BROTHERS, INC., 225 W. Huron St., Chicago 10, Ill.—A.B.E.F.G.I.K.L.N.O.P
 Sontone Corp., Elmsford, N.Y.—B.E.F.G.M.O
 Soundscribe Corp., 146 Munson St., New Haven 4, Conn.—B.F.N
 Stephens Mfg. Corp., 8538 Warner Dr., Culver City, Calif.—C.I.N.P
 Telephonics Corp., Park Ave., Huntington, N.Y.—R.D.F.H.I.J.M.N.O
 Tibbets Industries, Inc., Camden, Maine—E.G
 Toys & Specialties, Inc., 622 W. Kinzie St., Chicago 10, Ill.—C
 TURNER CO., 909 17 St., N.E., Cedar Rapids, Iowa—B.D.E.F.G.K.M.N.O
 Universal Microphone Co., 424 Warren Lane, Inglewood, Calif.—B.E.F.H.J.K
 U. S. Recording Co., 1121 Vermont Ave., N.W., Washington 5, D.C.—R.C.D.E.F.K
 Western Mfg., Co., 1400 W. 22nd St., Kearney, Nebr.—B

55—MICROPHONE ACCESSORIES

Microphone booms A
 Microphone connectors B
 Microphone covers E
 Microphone desk mounts F
 Microphone springs C
 Microphone stands D
 Microphone transformers G

Aerolite Electronics Corp., 507 26 St., Union City, N.J.—B
 ALTEC LANSING CORP., 9356 Santa Monica Blvd., Beverly Hills, Calif.—D.F
 American Microphone Co., 370 S. Fair Oaks Ave., Pasadena 1, Calif.—A.D.E.F.G
 AMERICAN PHENOLIC CORP., 1830 S. 54 Ave., Chicago 50, Ill.—B
 Arey Machine Co., 39 Long Ave., Hillside 8, N.J.—B
 Art Specialty Co., 3245 W. Lake St., Chicago 24, Ill.—D
 Astatic Corp., Conneaut, Ohio—D
 ATLAS SOUND CORP., 1449 39 St., Brooklyn, N.Y.—A.B.C.D.E.F.G
 Baughman Co., E. J., 250 S. Central Ave., Los Angeles 13, Calif.—A.B.C.D
 Berndt-Bach, Inc., Auricon Div., 6916 Romaine St., Hollywood 38, Calif.—A
 British Electronic Sales Co., 23-03 45th Rd., Long Island City 1, N.Y.—B
 CAMERA EQUIPMENT CO., 1600 Broadway, New York 19, N.Y.—A.D.F
 CAMERA MAINT., 1845 Broadway, New York 23, N.Y.—A
 Carter Parts Co., 213 Institute Pl., Chicago 10, Ill.—B

Century Lighting Inc., 521 W. 43rd St., New York 25, N.Y.—A
 Dazor Mfg. Co., 4481 Duncan Ave., St. Louis 10, Mo.—D,F
 Eastern Mike-Stand Co., 56 Christopher Ave., Brooklyn 12, N.Y.—D
 EBY CO., HUGH H., 4700 Stenton Ave., Philadelphia 44, Pa.—B
 Electro-Sound Corp., 115 Hallack St., Boston, Mass.—D,F
 Electro-Voice, Inc., Cecil & Carroll Sts., Buchanan, Mich.—D,F,G
 General Cement Mfg. Co., 919 Taylor Ave., Rockford, Ill.—B
 Halldorson Transformer Co., 4500 Ravenswood Ave., Chicago 40, Ill.—G
 Hallen Corp., 3503 W. Olive Ave., Burbank, Calif.—A
 Hamilton Electronics Corp., 2726 Pratt Ave., Chicago 45, Ill.—D
 Insuline Corp. of America, 186 Granite St., Manchester, N. H.—B
 Kinevox, Inc., 116 N. Hollywood Way, Burbank, Calif.—A
 Kings Electronics Co., 40 Marbledale Rd., Tuckahoe, N.Y.—B
 Maccon Co., 3260 Motor Ave., Los Angeles 34, Calif.—B
 Microtran Co., 84-11 Rockaway Beach Blvd., Rockaway Beach 93, N.Y.—G
 Mohawk Business Machines Corp., 944 Halsey St., Brooklyn 37, N.Y.—B
 Molded Insulation Co., 335 E. Price St., Philadelphia 44, Pa.—B
 Mole-Richardson Co., 937 N. Sycamore Ave., Hollywood 38, Calif.—A
 Peerless Electrical Products, Div. Altec Lansing Corp., 9356 Santa Monica Blvd., Beverly Hills, Calif.—G
 Permoflux Corp., 4900 W. Grand Ave., Chicago 39, Ill.—A,G
 Racon Electric Co., 1261 Broadway, New York 1, N.Y.—D
 RADIO CORP. OF AMERICA, RCA VICTOR Div., Front & Cooper Sts., Camden 2, N. J.—A,D,G
 Reevesound Co., 35-54 36th St., Long Island City 1, N.Y.—A
 Roanwell Corp., 662 Pacific St., Brooklyn 17, N.Y.—A,E
 Sears Co., M. J., Roxbury, N.Y.—A,B,F
 SHURE BROTHERS, INC., 225 W. Huron St., Chicago 10, Ill.—A,D,F,G
 Smith, Inc., Herman H., 436 18 St., Brooklyn 15, N.Y.—B
 Sonotone Corp., Elmsford, N.Y.—G
 Soundscribe Corp., 146 Munson St., New Haven 4, Conn.—F
 Special Products Co., 9115 Brookville Rd., Silver Spring, Md.—D
 Square Root Mfg. Corp., 391 Saw Mill River Rd., Yonkers 2, N.Y.—G
 Starbird, George A., 950 N. Highland Ave., Los Angeles 38, Calif.—A
 Switchcraft, Inc., 1334 N. Halsted St., Chicago 22, Ill.—B
 Telephonics Corp., Park Ave., Huntington, N.Y.—A,B
 Television Products Co., 1147 N. McCadden Pl., Hollywood 38, Calif.—A
 Television Specialty Co., 350 W. 31 St., New York 1, N.Y.—A
 Telex, Inc., 1633 Eustis St., St. Paul 1, Minn.—G
 Thompson Clock Co., H. C., 38 Federal St., Bristol, Conn.—D
 TURNER CO., 909 17 St., N. E., Cedar Rapids, Iowa.—D,G
 Universal Microphone Co., 424 Warren Lane, Inglewood, Calif.—D
 U. S. Recording Co., 1121 Vermont Ave., N.W., Washington 5, D.C.—A,B,D
 Wheeler Insulated Wire Co., 150 East Aurora St., Waterbury 20, Conn.—G

56—MOBILE COMMUNICATIONS EQUIPMENT

Citizens radio	A
Intercommunicating systems	B
Pack sets	C
Receivers, fixed	D
Receivers, mobile	E
Telephones, portable field	F
Transceivers	G
Transmitters	H
Walkie-talkies	I

AIRCRAFT RADIO CORP., Boonton, N.J.—G
 Allied Int'l. Inc., 230 Park Ave., New York 17, N.Y.—C,E,H,I
 American Electroneering Corp., 2040 Colorado Ave., Santa Monica, Calif.—D,E,H
 American Radio Co., 445 Park Ave., New York 22, N.Y.—D,E,H
 Ansley Electronic, Inc., 85 Tremont St., Meriden, Conn.—G,H
 Applied Electronics Co., 1246 Folsom St., San Francisco 3, Calif.—E,F,H
 Approved Electronic Instrument Corp., 928 Broadway, New York 10, N.Y.—D
 ARF Products, Inc., 7627 Lake St., River Forest, Ill.—B

Avia Products Co., 7266 Beverly Rd., Los Angeles 36, Calif.—E,G
 Babcock Radio Eng'g. Inc., 7942 Woodley Ave., Van Nuys, Calif.—H
 Barker & Williamson, 237 Fairfield Ave., Upper Darby, Pa.—H
 Barry Electronics Corp., 136 Liberty St., New York 6, N.Y.—H
 Bassett Inc., Rex., 1314 NE 17th Court, Ft. Lauderdale, Fla.—D,E,G,H
 BENDIX RADIO DIV., BENDIX AVIATION CORP., E. Joppa Rd., Towson 4, Md.—C, D,E,I
 Berger Communications, 109-01 72 Rd., Forest Hills L.I., N.Y.—D,E,G
 Bliss Electronic Corp., Box 123, Sussex, N.J.—B,F
 Bowen & Co., 4712 Bethesda Ave., Bethesda, Md.—B,F
 Bristol Eng'g. Corp., Lincoln & Pond Sts., Bristol, Pa.—G
 Century Lighting Inc., 521 W. 43rd St., New York 25, N.Y.—H
 C.G.S. Laboratories, Inc., 391 Ludlow St., Stamford, Conn.—E
 Codetypewriter Laboratories, 550 Fifth Ave., New York 19, N.Y.—B
 Communications Co., P.O. Box 6250, Coral Gables, Fla.—A,D,E,G,H
 Conn. Telephone & Electric Co., 70 Britannia St., Meriden, Conn.—A,G,H
 Consolidated Productions, Inc., Bldg. 9, Broward Int'l. Airport, Ft. Lauderdale, Fla.—I
 DAGE ELECTRONICS, INC., 71 N. 2nd Ave., Beech Grove, Ind.—A
 Dollar Co., Robert Communications Equipment Div., 50 Drumm St., San Francisco, Calif.—D,E,H
 Dubrow Development Co., 235 Penn St., Burlington, N.J.—B
 DUMONT LABS., INC., ALLEN B., TV Transmitter Dept., Mobile Comm. Dept., 1500 Main St., Clifton, N.J.—E,G,H
 Eldico of N.Y., Inc., 70-72 E. Second St., Micoala, L.I., N.Y.—D,E,G,H,I
 Electro Craft Inc., 68 Jackson St., Stamford, Conn.—I
 Electronic Research Co., 11550-39 St., N.E., Seattle 55, Wash.—H
 EL-Tronics, Inc., 437 N. 5th St., Philadelphia 23, Pa.—B,D,E,G,H
 Electro-Sound Corp., 115 Halleck St., Boston, Mass.—B,F,I
 Electrotech Corp., 15601 Arrow Hwy., Azusa, Calif.—D,H
 Electro-Voice, Inc., Cecil and Carroll Sts., Buchanan, Mich.—D,E,H
 Erco Radio Laboratories, 637 Stewart Ave., Garden City, N.Y.—B,C,D,E,G,H
 Espey Mfg. Co., 528 E. 72nd St., New York 21, N.Y.—A,B,D,E,G,H,I
 FEDERAL TELEPHONE & RADIO DIV., I.T. & T. CORP., 100 Kingsland Rd., Clifton, N.J.—B,D,E,H
 Feiler Eng'g. & Mfg. Co., 8026 N. Monticello Ave., Skokie, Ill.—A,B,D,E,F,G,H,I
 Freed Electronics & Controls Corp., 200 Hudson St., New York 13, N.Y.—B,C,D,E,G,H,I
 GATES RADIO CO., 123 Hampshire St., Quincy, Ill.—H
 GENERAL ELECTRIC COMPANY, ELECTRONICS DIVISION, Syracuse, N.Y.—A,C, D,E,G,H,I
 General Hermetic Sealing Corp., 99 E. Hawthorne Ave., Valley Stream, Long Island, N.Y.—B
 Gonset Co., 801 S. Main St., Burbank, Calif.—C,D,E,G,H
 Hallcrafters Co., 4401 W. Fifth Ave., Chicago 24, Ill.—D,E,G,H,I
 Hamlyn Electronics Corp., 32 Holman Blvd., Hicksville, N.Y.—A,B,C,D,E,G,H
 Harmon Electronics Co., 11431 Truman Rd., Independence, Mo.—B
 Insuline Corp. of America, 186 Granite St., Manchester, N.H.—B,G
 INT'L. RESEARCH CORP., 2221 Warwick Ave., Santa Monica, Calif.—E,H
 Jarvis Electronics Corp., 6058 Fullerton Ave., Chicago 39, Ill.—E
 Jefferson, Ray, 40 E. Merrick Rd., Freeport, N.Y.—G
 JOHNSON CO., E. F., Waseca, Minn.—H
 Kaar Eng'g Corp., 2955 Middlefield Rd., Palo Alto, Calif.—A,C,D,E,G,H
 Lavoie Labs., Morganville, N.J.—E,G,H
 Lear, Inc., 11916 W. Pico Blvd., Los Angeles 64, Calif.—D,E,G,H
 Lettine Radio Mfg. Co., 62 Berkley St., Valley Stream, N.Y.—H
 Link Radio Corp., 125 W. 17th St., New York 11, N.Y.—A,B,D,E,G,H,I
 Lyco Mfg. Co., 1401 Clinton St., Hoboken, N.J.—C,D,E,G,H,I
 Magnavox Co., Ft. Wayne 4, Ind.—G
 Marconi's Wireless Telegraph Co., 23 Beaver St., New York 4, N.Y.—C,D,E,G,H,I
 Mattson-Cowley Corp., 1487 Lincoln Ave., Pasadena 3, Calif.—D,E,H,I
 Mercury Mfg. Corp., Main Office—45 Brown St., Buffalo 11, N.Y.—D
 Metal Products Co., Craighead St., Nashville 4, Tenn.—H
 Miles Reproducer Co., 812 Broadway, New York 3, N.Y.—I
 Mitchell Mfg. Co., 2525 Claybourn Ave., Chicago 14, Ill.—B
 Morrow Radio Mfg. Co., 2794 Market St., Salem, Ore.—C,D,E,G,H,I
 Motorola, Inc., 4545 W. Augusta Blvd., Chicago, Ill.—A,C,D,E,G,H,I

Multi-Products Co., 559 E. Ten Mile Rd., Hazel Park, Mich.—E,H
 Munston Mfg. & Service Inc., Beech St., Islip, N.Y.—B,D,E,H
 National Electronics Labs., 1713 Kalorama Rd. N.W., Washington 9, D.C.—E,H
 North Electric Mfg. Co., S. Market St., Galion, Ohio—B,F
 Optron Mfg. Co., 3223 N. Sheffield Ave., Chicago 13, Ill.—B
 Otis Elevator Co., Electronic Div., 35 Ryerson St., Brooklyn 5, N.Y.—D,E,H
 Pacific Mercury TV Mfg. Corp., 5965 Van Nuys Blvd., Van Nuys, Calif.—A,D,E,G,H,I
 Pearce-Simpson, Inc., 3023 Coral Way, Miami 34, Fla.—G,I
 Petroff, Peter A., 127 Water St., New York 5, N.Y.—B,I
 Plastics & Electronics Co., 272 Northland Ave., Buffalo 8, N.Y.—E
 Plymouth Electronics Corp., 50 Kingsbury St., Worcester, Mass.—I
 Pratt, Albert, 1939 N. 18 St., Milwaukee 5, Wisc.—E,H
 Radio Apparatus Corp., 55 N. New Jersey St., Indianapolis, Ind.—D,E
 RADIO CORP. OF AMERICA, RCA VICTOR Div., Eng'g. Products Div., Camden 2, N.J., B,D,E,G,I
 Radio Kits, Inc., 120 Cedar St., New York 6, N.Y.—G
 Radio Mfg. Engineers, Inc., Div. Electro-Voice, Buchanan, Mich.—A,D,E
 Rayovox Mfg. Co., 902 Albemarle, Brooklyn 18, N.Y.—B
 RAYTHEON MFG. CO., 100 River St., Waltham 54, Mass.—E,G,H
 Remco Mfg. Co., 545 N. LaSalle St., Chicago 10, Ill.—D,E
 Remler Co., 2101 Bryant St., San Francisco 10, Calif.—B,C,H
 Reynolds Radio & Equip. Lab., H. B., 219 Stone St., Oneida, N.Y.—E,G,H
 Roanwell Corp., 662 Pacific St., Brooklyn 17, N.Y.—F
 Roesch Co., D. J., 2200 S. Figueroa St., Los Angeles 7, Calif.—B,C,F
 Rowe Industries, 1702 Wayne St., Toledo 9, Ohio—G,I
 Scantlin Electronics, J.R., 145 W. Hazel St., Los Angeles 24, Calif.—A,E,G,H
 Schuttig & Co., 9th & Kearny Sts., N.E., Washington 17, D.C.—G
 Silver Bay Equip. Co., 5004 20th N.W., Seattle 7, Wash.—C,G,H
 Simpson Mfg. Co., Mark 32-28 49 St., Long Island City 3, N.Y.—B
 Slate & Associates, Claude C., 11370 W. Olympic Blvd., Los Angeles 64, Calif.—D,E,H
 Sonar Radio Corp., 3050 W. 21 St., Brooklyn 24, N.Y.—A,D,E,F,G,H,I
 Sparton Radio-TV, 2400 E. Ganson St., Jackson, Mich.—E
 Spera Electronics Labs., 37-10 33 St., Long Island City 1, N.Y.—A,B,I
 Square Root Mfg. Corp., 391 Saw Mill River Road, Yonkers 2, N.Y.—B
 Stewart-Warner Electric, 1300 N. Kostner Ave., Chicago 51, Ill.—I
 Technical Materiel Corp., 700 Fenimore Rd., Mamaroneck, N.Y.—D,E,H
 Tele-Broadcasters Inc., 158 E. 56th St., New York, N.Y.—A,B,C,D,E,F,G,H,I
 Telemetering Associates, 494C Pine Forest Drive, Marietta, Ga.—H
 Telephonics Corp., Park Ave., Huntington, N.Y.—B,F,G,I
 Transitron, Inc., 154 Spring St., New York 12, N.Y.—D,E,G,H,I
 Transmitter Equipment Mfg. Co., 35 Ryerson St., Brooklyn 5, N.Y.—D,E,H
 Union Spring & Mfg. Co., 1057 Summit Ave., Jersey City 7, N.J.—C,D,E,G,H,I
 U.S. Testing Co., 1415 Park Ave., Hoboken, N.J.—B,D,H,I
 Vocaline Co. of America, Coulter St., Old Saybrook, Conn.—B,G
 Voron & Co., George, 835 N. 19th St., Philadelphia 30, Pa.—B,F
 West Coast Electronics Co., 5873 W. Jefferson Blvd., Los Angeles 16, Calif.—D,E,H
 Western Mfg. Co., 1400 W. 22 St., Kearney, Nebr.—B,D,E,G,H,I,R
 Westinghouse Electric Corp., Box 868, Pittsburgh 30, Pa.—E,H
 Wilmar Mfg. Co., 2715 E. 14th St., Kansas City 27, Mo.—G
 Wunderlich Radio Co., 2-Fifth Ave., New York 11, N.Y.—A,B,C,D,E,F,G,H,I
 Z & W Machine Products, 5100 St. Clair Ave., Cleveland 3, Ohio—B

57—MOBILE COMMUNICATIONS ACCESSORIES

Antennas	A
Antenna bases	B
Auto alarms	C
Control equipment	D
Crystals	E
Microphones	F
Power supplies	G
Power supplies, emergency	H
Recorders, film	I

Recorders, magneticK
Vibration mountingsJ

Abel Mfg. Co., 32-20 37th Ave., Long Island City 1, N.Y.—A,B
Adler Communications Labs., 1 LeFevre Lane, New Rochelle, N.Y.—D
Advance Electronics Co., 8510 North End Ave., Oak Park 37, Mich.—A
Aeronautical Electronics, P.O. Box 6043, Raleigh, N.C.—E
Aeronautical Radio Mfg. Co., 155 1 St., Mineola, N.Y.—A,B,D,E,F,G,J
Allied Intl. Inc., 230 Park Ave., New York 17, N.Y.—G,H
American Engineering Corp., 2040 Colo. Ave., Santa Monica, Calif.—G
AMERICAN PHENOLIC CORP., 1830 S. 54 Ave., Chicago 50, Ill.—A
American Radiotelephone Co., St. Petersburg, Fla.—D
AMERICAN TELEVISION & RADIO CO., 300 E. 4th St., St. Paul 1, Minn.—G, H
Amplifier Corp. of America, 398 Broadway, New York 13, N.Y.—K
ANDREW CORP., 363 E. 75th St., Chicago 19, Ill.—A
Ansley Electronics Inc., 85 Tremont St., Meriden, Conn.—A
Antenna Specialists Co., 12435 Euclid Ave., Cleveland 6, Ohio—A,B
Applied Electronics Co., 1246 Folsom St., San Francisco 3, Calif.—A
Art-Lloyd Metal Products Corp., 2973 Cropsey Ave., Brooklyn 14, N.Y.—B,J
Rabeock Radio Eng'g. Inc., 7942 Woodley Ave., Van Nuys, Calif.—A,C,G
Bailey Corp., Arnold, Amoskeag Bank Bldg., Manchester, N.H.—A
Bassett Inc., Rex, 1314 NE 17th Court, Ft. Lauderdale, Fla.—A,B,E,G
BENDIX RADIO DIV., BENDIX AVIATION CORP., E. Joppa Rd., Towson 4, Md.—A,D, E,J
Bogue Electric Mfg. Co., 52 Iowa Ave., Paterson 3, N.J.—G,H
Bowen & Co., 4712 Bethesda Ave., Bethesda, Md.—A,C,D
Brelco Electronics Corp., 65 Vandam St., New York 13, N.Y.—C
Budd-Stanley Co., 43-01 22nd St., Long Island City 1, N.Y.—A
CGS Laboratories, Inc., 391 Ludlow St., Stamford, Conn.—D
Communications Co., P.O. Box 6250, Coral Gables, Fla.—A,D
Conn. Telephone & Electric Corp., 70 Britannia St., Meriden, Conn.—A,C,G
Codyteler Laboratories, 550 Fifth Ave., New York 19, N.Y.—D
Creative Eng'g. Corp., 10816 Burbank Blvd., N. Hollywood, Calif.—A
Danbury-Knudsen, 15 Thorpe St., Danbury, Conn.—A
Davies, Labs., Inc., 4705 Queensbury Rd., Riverdale, Md.—K
Dressen-Barnes Corp., 250 No. Vinado Ave., Pasadena 8, Calif.—G,H
Dubrow Development Co., 235 Penn St., Burlington, N.J.—G
DUMONT LABS., INC., ALLEN B., TV Transmitter Dept., Mobile Comm. Dept., 1500 Main St., Clifton, N.J.—A,B,D,E,F,G
Eicor, Inc., 1501 W. Congress St., Chicago 7, Ill.—G
EIDSON ELECTRONIC CO., 1902 N. 3 St., Temple, Tex.—E
Eldico of N.Y., Inc., 70-72 E. Second St., Mineola, L.I., N.Y.—G,H
Electronic Measurements Co., Lewis St. & Maple Ave., Eatontown, N.J.—G
Electrotech Corp., 15601 Arrow Hwy., Azusa, Calif.—G
Electro-Voice Inc., Cecil & Carroll Sts., Buchanan, Mich.—F
Erco Radio Laboratories, 637 Stewart Ave., Garden City, N.Y.—D
Espy Mfg. Co., 528 E. 72 St., New York 21, N.Y.—G,H
FAIRCHILD CAMERA & INSTRUMENT CORP., Robbins Lane, Syosset, N.Y.—D
Federal Shock Mount Corp., 1077 Intervale Ave., New York 59, N.Y.—J
FEDERAL TELEPHONE & RADIO DIV., I.T. & T. CORP., 100 Kingsland Rd., Clifton, N.J.—A,G
Feiler Eng'g. & Mfg. Co., 8026 N. Monticello Ave., Skokie, Ill.—I
Flight Research Inc., P. O. Box 1-F, Richmond, Va.—J
Freed Electronics & Controls Corp., 200 Hudson St., New York 13, N.Y.—D,G,H
Gabriel Electronics Div., Gabriel Co., Endicott St., Norwood, Mass.—A
Gates Electric Co., 65 W. Broadway, New York, N.Y.—G,H
GATES RADIO CO., 123 Hampshire St., Quincy, Ill.—G
GENERAL CONTROL CO., 1200 Soldiers Field Rd., Boston 34, Mass.—D
GENERAL ELECTRIC COMPANY, ELECTRONICS DIVISION, Syracuse, N.Y.—A,B, D,E,F,G,H
General Tire & Rubber Co., Industrial Products Div., Wabash, Ind.—J
Generator Corp., Manassas, Va.—G,H
Gonset Co., 801 South Main St., Burbank, Calif.—G

ELECTRONIC INDUSTRIES DIRECTORY

Graf, R.F., 780 West End Ave., New York 25, N.Y.—A
Hammarlund Mfg. Co., 460 W. 34th St., New York 1, N.Y.—D
Harmon Electronics Co., 11431 Truman Rd., Independence, Mo.—D
Hufford Machine Works, 2201 Carolina Ave., Los Angeles 64, Calif.—G
Hughes & Phillips, 3300 N. San Fernando Blvd., Burbank, Calif.—C
Industrial Rectifier Co., 161 Washington St., New York 6, N.Y.—G
Inet Inc., 8655 S. Main St., Los Angeles 3, Calif.—G,H
Insuline Corp. of America, 186 Granite St., Manchester, N.H.—A,B,K,J
INT'L RESEARCH ASSOCIATES, 2221 Warwick Ave., Santa Monica, Calif.—D
Jarvis Electronics Corp., 6058 Fullerton Ave., Chicago 39, Ill.—A,G
JFD Mfg. Co., 6101 16th Ave., Brooklyn 4, N.Y.—A,B
Johns-Manville, 22 E. 40th St., New York 16, N.Y.—J
Kaar Eng'g. Corp., 2995 Middlefield Rd., Palo Alto, Calif.—D
Kepeco Labs., 131-38 Sanford Ave., Flushing 55, N.Y.—G,H
Kings Electronics Co., 40 Marbledale Rd., Tuckahoe, N.Y.—A,B,J
Kirby Products Corp., 175 Fifth Ave., New York 10, N.Y.—G
Korb Eng'g. & Mfg. Co., 30 Ottawa Ave., Grandville, Mich.—K
Lear, Inc., 11916 W. Pico Blvd., Los Angeles 64, Calif.—A,B,E,F,G,H
Link Radio Corp., 125 W. 17th St., New York 11, N.Y.—A,B,D,E,F,G
Lord Mfg. Co., 1635 W. 12 St., Erie, Pa.—J
Mag-Electric Products Inc., 14405 Crenshaw Ave., Gardiner, Calif.—G,H
Magnetic Instrument Co., 82 Main St., W. Orange, N.J.—G
MALLORY & CO., P. R., 3029 E. Washington St., Indianapolis 6, Ind.—G
Marconi's Wireless Telegraph Co., 23 Beaver St., New York 4, N.Y.—J
MB Mfg. Co., 1060 State St., New Haven 11, Conn.—J
Mercury Mfg. Corp., Main Office—45 Brown St., Buffalo 11, N.Y.—C,D
Michigan Electronics Inc., 854 N. Rockwell St., Chicago 22, Ill.—K
Miles Reproducer Co., 812 Broadway, New York 3, N.Y.—F,I
Mohawk Business Machines Corp., 944 Halsey St., Brooklyn 37, N.Y.—K
Molded Insulation Co., 335 E. Price St., Philadelphia 44, Pa.—A
Morrow Radio Mfg. Co., 2794 Market St., Salem Ore.—F,G
Motordyne Inc., 2661 S. Myrtle Ave., Monrovia, Calif.—G,H
Motor Generator Corp., Hobart Sq., Troy, Ohio—G
National Electric Products Corp., 338 14 St., Ambridge, Pa.—A
National Electronic Mfg. Corp., 42-08 Vernon Blvd., Long Island City 1, N.Y.—A,D
Nebel Lab., R. E., 1104 Lincoln Pl., Brooklyn 13, N.Y.—E
Neutronic Associates, 87-16 116th St., Richmond Hill, N.Y.—G,H
North Electric Mfg. Co., S. Market St., Galion, Ohio—D
Onan & Sons, D. W., University Ave., S.E. at 25th, Minneapolis 14, Minn.—G,H
Opnd-Green Co., 71 Warren St., New York 7, New York—G,H
Pearce-Simpson Inc., 3023 Coral Way, Miami 34, Fla.—A
Permoflux Corp., 4900 W. Grand Ave., Chicago 39, Ill.—F,K
Peschel Electronics, 13 Garden St., New Rochelle, N.Y.—G
Petroff, P. A., 127 Water St., New York 5, N.Y.—A,B,D
Phila. Scientific Glass Co., 4 Eckard Ave., Abington, Pa.—D
Plymouth Electronics Corp., 50 Kingsbury St., Worcester, Mass.—B,G
POLYTECHNIC RESEARCH & DEVELOP., 202 Tillary St., Brooklyn 1, N.Y.—G
Portable Electric Tools Inc., 200 W. 83 St., Chicago 20, Ill.—G
Precision Crystal Lab., 2223 Warwick Ave., Santa Monica, Calif.—E
Premax Products, Highland & College Ave., Niagara Falls, N.Y.—A,B
PRODELIN, INC., 307 Bergen Ave., Kearny, N.J.—A
Radiart Corp., 3455 Vega Ave., Cleveland 13, Ohio—A,G
Radio Apparatus Corp., 55 N. New Jersey St., Indianapolis, Ind.—A
RADIO CORP. OF AMERICA, RCA Victor Div. Eng'g. Products Div., Camden 2, N.J.—A,F,G,H,I,K

Reevesound Co., 35-54 36 St., Long Island City 1, N.Y.—G,I
Regulator Eng'g. & Devel. Co., 11545 W. Jefferson Blvd., Culver City, Calif.—G
Remler Co., 2101 Bryant St., San Francisco 10, Calif.—F,J
Roanwell Corp., 662 Pacific St., Brooklyn 17, N.Y.—F
Roesch Co., D. J., 2200 S. Figueroa St., Los Angeles 7, Calif.—D,F,G,H
Schauer Mfg. Co., 4500 Alpine Ave., Cincinnati 36, Ohio—G
SHURE BROS., 225 W. Huron St., Chicago 10, Ill.—F
Silver Bay Equip. Co., 5004 20th N.W., Seattle 7, Wash.—A,B
Simpson Mfg. Co., Mark, 32-28 49th St., Long Island City 3, N.Y.—K
Snyder Mfg. Co., 22 & Ontario Sts., Philadelphia 40, Pa.—A,B
Sonar Radio Corp., 3050 W. 21 St., Brooklyn 24, N.Y.—G
Sorensen & Co., 375 Fairfield Ave., Stamford, Conn.—G
Soundscriber Corp., 146 Munson St., New Haven 4, Conn.—K
Spartan Radio Television, 2400 E. Ganson St., Jackson, Mich.—G
Standard Crystal Co., 1714 Locust St., Kansas City, Mo.—E
Stephens Mfg. Corp., 8538 Warner Dr., Culver City, Calif.—F
Tech Laboratories, Bergen & Edsall Blvds., Palisades Park, N.J.—D,G,H
TECHNICAL APPLIANCE CORP., 1 Taco St., Sherburne, N.Y.—A,H
Technical Materiel Corp., 700 Fenimore Rd., Mamaroneck, N.Y.—A,H,D
Telemarine Communications Co., 3040 W. 21 St., Brooklyn 21, N.Y.—G,H
Terado Co., 1068 Raymond Ave., St. Paul 14, Minn.—G
Transformer Technicians, 2608 N. Cicero Ave., Chicago 39, Ill.—G,H
TURNER CO., 909 17 St., N. E., Cedar Rapids, Iowa—F
Union Spring & Mfg. Co., 1057 Summit Ave., Jersey City 7, N.J.—G,H
Union Switch & Signal-Div., Westinghouse Air Brake Co., 1789 Braddock Ave., Pittsburgh 18, Pa.—F
U.S. Motors Corp., 420 Nebraska St., Oshkosh, Wis.—G,H
U. S. Recording Co., 1121 Vermont Ave., N.W., Washington 6, D.C.—F,G
Varo Mfg. Co., 1801 Walnut St., Garland, Tex.—G
Vokar Corp. Huron River Dr., Dexter, Mich.—C,G,H
Ward Products Corp., Div. Gabriel Co., 1148 Euclid Ave., Cleveland 15, Ohio—A,B
West Coast Electronics Co., 5873 W. Jefferson Blvd., Los Angeles 16, Calif.—A,B
Western Electronic Enterprises, 3348 W. Compton Blvd., Gardena, Calif.—A
Western Mfg. Co., 1400 W. 22 St., Kearney, Nebr.—A,F
White & Son, J. L., 374 Verona Ave., Newark 4, N.J.—A
Wincharger Corp., E. 7th and Division Sts., Sioux City 2, Iowa—G,H
Wind Turbine Co., E. Market St. & Penna. R.R., West Chester, Pa.—B
Wunderlich Radio Co., 2-5th Ave., New York 11, N.Y.—A,B,C,D,E,F,G,H
Z & W Machine Products, 5100 St. Clair Ave., Cleveland 3, Ohio—A,B

58—MOTION PICTURE EQUIPMENT

Cameras, 16 mmA
Cameras, 35 mmB
Kinescope recording apparatusC
Projectors, 16 mmD
Projectors, 35 mmE
Projectors, rearF
Projectors, theatre TVG
Sound readersH
Tape, synchronized magneticI

Acme Camera Corp., 2704 W. Olive Ave., Burbank, Calif.—A,B,C,D,E,F
Akeley Camera & Instrument Corp., 345 Hudson St., New York, N.Y.—A,B
Ampro Corp., 2835 N. Western Ave., Chicago 18, Ill.—D,F,G
Background Engineers, 7313 Santa Monica Blvd., Hollywood 46, Calif.—F
Baughman Co., E. J., 350 S. Central, Los Angeles 13, Calif.—F,G,H
Bausch & Lomb, 628 St. Paul St., Rochester, N.Y.—F,G
BELL & HOWELL CO., 7100 McCormick Rd., Chicago 45, Ill.—A,B,D,H
Berndt-Bach, Inc., Auricon Div., 6916 Rosmaine St., Hollywood 38, Calif.—A,C,H
Beseler Co., Charles, 60 Badger Ave., Newark 8, N.J.—E,F
Bodde Screen Co., 8829 Venice Blvd., Los Angeles 34, Calif.—F
BURKE & JAMES, 321 S. Wabash Ave., Chicago 4, Ill.—B
Calvin Co., 1105 Truman Rd., Kansas City 6, Mo.—D

CAMERA EQUIPMENT CO., 1600 Broadway, New York 19, N.Y.—A,B,D,E,F,G,H,I
 Century Projector Corp., 729 7 Ave., New York 19, N.Y.—E,F,H
 Cinematic Devel. & Cinechrome Lab., 2125 32 Ave., San Francisco, Calif.—A,B
 Cinetech Co., Inc., 106 West End Ave., New York 23, N.Y.—A,B
 Colonial Films, 2118 Mass. Ave., N. W., Washington 8, D.C.—A,C
 Consolidated Producing, 540 W. Congress St., Detroit 26, Mich.—A,B
 DAGP ELECTRONICS, 71 N. 2nd Ave., Beech Grove, Ind.—D
 Delaware Optical Labs., 36 Williams St., Lansdowne, Pa.—G
 DeVry Corp., 1111 Armitage Ave., Chicago 14, Ill.—D,E,F
 Dukane Corp., 305 No. 11th St., St. Charles, Ill.—E
 DUMONT LABS., INC., ALLEN B., TV Transmitter Dept., Mobile Comm. Dept., 1500 Main St., Clifton, N.J.—C,D,E,F
 Eastman Kodak Co., 348 State St., Rochester 4, N.Y.—A,C,D
 Edgerton, Gernsmaier & Grier, 160 Brookline Ave., Boston 15, Mass.—A
 E D L Co., 5929 E. Dunes Highway, Gary 5, Ind.—H
 Electro Vision Laboratory, 30-16 Crescent St., Long Island City 2, N.Y.—I
 FAIRCHILD CAMERA & INSTRUMENT CORP., Robbins Lane, Syosset, N.Y.—A,B
 Federal Mfg. & Eng'g. Corp., 211 Steuben St., Brooklyn 5, N.Y.—D,I
 Feiler Eng'g. & Mfg. Co., 8026 N. Monticello Ave., Skokie, Ill.—I
 Flight Research, Inc., P. O. Box 1-F, Richmond, Va.—A,B
 GENERAL ELECTRIC CO., LAMP DIV., Nela Park, Cleveland 12, Ohio—I
 Golde Mfg. Co., 4888 N. Clark St., Chicago 40, Ill.—F
 Hallen Corp., 3503 W. Olive Ave., Burbank, Calif.—H,I
 Handy Organization, Jam, 2821 E. Grand Blvd., Detroit, Mich.—A
 Holmes Projector Co., 1815 N. Orchard St., Chicago 14, Ill.—D,E,F,G
 Intl. Projector Corp., 55 LaFrance Ave., Bloomfield, N.J.—E
 Kinevox, Inc., 116 N. Hollywood Way, Burbank, Calif.—H
 Land-Air, Inc., 201 N. Wells St., Chicago 6, Ill.—A,B
 Libra Film & Equipment, 6525 Sunset Blvd., Hollywood 28, Calif.—A
 Maurer, Inc., J. A., 37-01 31 St., Long Island City 1, N.Y.—A,B,E
 Meyer & Co., Hugo, 39 W. 60 St., New York 23, N.Y.—A
 Michigan Film Library, 15745 Rosemont Rd., Detroit 23, Mich.—A
 Mitchell Camera Corp., 666 W. Harvard St., Glendale 4, Calif.—A,B
 Motigraph, Inc., 4431 W. Lake St., Chicago 24, Ill.—D,E,G
 Natural Lighting Corp., 612 West Elk Ave., Glendale 4, Calif.—A
 Optron Mfg. Co., 3223 N. Sheffield Ave., Chicago 13, Ill.—M
 Paillard Products Inc., 100 6th Ave., New York 13, N.Y.—A,B
 Paramount TV Productions, Paramount Bldg., New York 18, N.Y.—C
 Pembrex Theatre Supply Corp., 1969 S. Vermont Ave., Los Angeles 7, Calif.—F
 Precision Products Inc., 719 17 St., N. W., Washington, D.C.—A
 Producers Sales Corp., 2704 W. Olive Ave., Burbank, Calif.—A,B,C,D,E,F
 RADIO CORP. OF AMERICA, RCA VICTOR DIV., Front & Cooper St., Camden 2, N.J.—C,D,E,G,I
 Rangertone, Inc., 73 Winthrop St., Newark 4, N.J.—I
 Reevesound Co., 35-54 36 St., Long Island City 1, N.Y.—C,H,I
 REEVES SOUNDCRAFT CORP., 10 E. 52 St., New York 22, N.Y.—I
 S.O.S. Cinema Supply Corp., 602 W. 52 St., New York 19, N.Y.—A,R,C,D,E,F,G,H,I
 Special Effects & Equip. Inc., 418 W. 54 St., New York 19, N.Y.—F
 Spellman Television Co., 3029 Webster Ave., Bronx 67, N.Y.—G
 Stancill-Hoffman Corp., 921 N. Highland Ave., Hollywood 38, Calif.—I
 Swank Films, 19 W. 4th St., Dayton 2, Ohio—A,B
 Synchronic Prods., 766 Broadway, Bayonne, N.J.—E
 T-Bar-V Inc., 5919 Hollywood Blvd., Hollywood 28, Calif.—F
 Technical Products Co., P.O. Box 93, Memphis 1, Tenn.—A,B,D,E,I
 Teleflex, 5919 Hollywood Blvd., Hollywood 28, Calif.—D,F
 Television Cartoons, Inc., 155 W. 46 St., New York, N.Y.—A,B
 Television Products Co., 1147 N. McCadden Pl., Hollywood 38, Calif.—H
 Television Specialty Co., 350 W. 31 St., New York 1, N.Y.—A,B,D,E,G,H
 Trans-Lux Corp., 1270 Ave. of the Americas, New York 20, N.Y.—F
 Trutone Electronics, 821 N. Highland Ave., Los Angeles 38, Calif.—H,I
 Victor Animatograph Corp., P. O. Box 600, Davenport, Iowa—D

Wenzel Projector Co., 2511 S. State St., Chicago 16, Ill.—E
 Westrex Corp., 111 Eighth Ave., New York 11, N.Y.—A,B,D,E,F
 Williams, Brown & Earle, Inc., 904 Chestnut St., Philadelphia 7, Pa.—A,D,H
 Willson Camera Co., 1401 Lawrence Rd., Havertown, Pa.—B,E
 Wollensak Optical Co., 850 Hudson Ave., Rochester 21, N.Y.—A,B,D
 Wright Eng'g Co., 180 E. Calif. St., Pasadena 1, Calif.—A,B

59—MOTION PICTURE EQUIPMENT ACCESSORIES

- Animation equipment A
- Cue markers B
- Editing equipment C
- Film scrapers D
- Lenses E
- Optical apparatus F
- Printing equipment G
- Processing equipment H
- Rapid development equipment I
- Reels, continuous projection J
- Re winds, auto K
- Screens, background L
- Screens, projection M
- Special effects equipment N
- Splicing equipment O
- Tilting equipment P
- Viewfinders Q

Ace Electric Mfg. Co., 1458 Shakespeare Ave., New York 52, N.Y.—B,D,J,O
 Acme Camera Corp., 2704 W. Olive Ave., Burbank, Calif.—A,E,F,G,N,P
 AEROVOX CORP., 740 Belleville Ave., New Bedford, Mass.—M
 Affiliated Photographic Co., 21 W. 45 St., New York 19, N.Y.—F
 Akeley Camera & Instrument Corp., 345 Hudson St., New York, N.Y.—A,C,E
 American Optical Co., Buffalo 15, N.Y.—E,F
 Ampro Corp., 2835 N. Western Ave., Chicago 18, Ill.—J
 Bache, Simon & Co., 636 Greenwich St., New York 14, N.Y.—E
 Background Engineers, 7313 Santa Monica Blvd., Hollywood 46, Calif.—L,N
 Baia Motion Picture Eng'g., 120 Victor Ave., Detroit 3, Mich.—C,D,K,O
 Bar-Ray Products Inc., 209 25 St., Brooklyn 32, N.Y.—H
 Baughman Co., E. J., 850 S. Central, Los Angeles 13, Calif.—K,Q
 Bausch & Lomb Optical Co., 628 St. Paul St., Rochester, N.Y.—E,F
 Beeland-King Film Productions, 752 Spring St., N.W., Atlanta, Ga.—A,C,P
 BELL & HOWELL CO., 7100 McCormick Rd., Chicago 45, Ill.—C,E,G,M,N,O,Q
 Berndt-Bach, Inc., Auricon Div., 7325 Beverly Blvd., Los Angeles 36, Calif.—C,E,Q
 Beseler Co., Chas., 60 Badger St., Newark 8, N.J.—F,N
 Bodde Screen & Projector Co., 8829 Venice Blvd., Los Angeles 34, Calif.—G,L,M,N
 Boleyn Corp. of America, 118 E. 25th St., New York 10, N.Y.—F,G,H
 Bowen & Co., 4712 Bethesda Ave., Bethesda, Md.—F
 Buhl Optical Co., 1009 Beach Ave., Pittsburgh 12, Pa.—E,F
 BURKE & JAMES, 321 S. Wabash Ave., Chicago 4, Ill.—E,F,I
 CAMERA EQUIPMENT CO., 1600 Broadway, New York 19, N.Y.—A,B,C,D,E,F,G,H,I,J,K,L,M,N,O,P,Q
 CAMERA MART, 1845 Broadway, New York 23, N.Y.—C,F,N,Q
 Century Lighting Inc., 521 W. 43rd St., New York 25, N.Y.—N
 Century Projector Corp., 729 7 Ave., New York 19, N.Y.—E,P
 Cinefects, Inc., 115 W. 45 St., New York 19, N.Y.—A,C,E,F
 Cinematic Devel. & Cinechrome Lab., 2125 32 Ave., San Francisco, Calif.—C,E,F,G,H,M,N,O,P,Q
 Colonial Films, 2118 Mass. Ave., N.W., Washington 8, D.C.—A,E,H
 Compeo Corp., 2251 W. St. Paul Ave., Chicago 47, Ill.—J
 De-Lite Screen Co., 2711 N. Pulaski Rd., Chicago 29, Ill.—L
 Delaware Optical Labs., 36 Williams St., Lansdowne, Pa.—E,F
 DUMONT LABS., INC., ALLEN B., TV Transmitter Dept., Mobile Comm. Dept., 1500 Main St., Clifton, N.J.—C
 Eastman Kodak Co., 348 State St., Rochester 4, N.Y.—C,E
 E D L Co., 5929 E. Dunes Highway, Gary 5, Ind.—G,H,I
 FAIRCHILD CAMERA & INSTRUMENT CORP., Robbins Lane, Syosset, N.Y.—F,I,Q
 Fisher Co., Oscar, 1000 N. Division St., Peekskill, N.Y.—H,I

Fish-Schurman Corp., 70 Portman Rd., New Rochelle, N.Y.—E,F
 GENERAL PRECISION LAB., INC., 63 Bedford Rd., Pleasantville, N.Y.—H,I
 Golde Mfg. Co., 4888 N. Clark St., Chicago 40, Ill.—K,N
 Griswold Machine Works, 412 Main St., Port Jefferson, N.Y.—O
 Gundlach Mfg. Co., Fairport, N.Y.—E,F
 Handy Organization, Jam, 2821 E. Grand Blvd., Detroit, Mich.—E,M,N,O,P,Q
 HOUSTON FEARLESS CORP., 11801 W. Olympic Blvd., Los Angeles 64, Calif.—G,H,I
 Hycor Co., 11423 Vanowen St., N. Hollywood, Calif.—N
 Kollmorgen Optical Corp., 30 Church St., New York 7, N.Y.—E,F,G
 Las-Lab, 316 W. Saratoga St., Baltimore 1, Md.—N
 Levins Eng'g. Co., 8203 Cedar St., Silver Spring, Md.—F
 Libra Film & Equipment, 6525 Sunset Blvd., Hollywood 28, Calif.—C,D,E,M,O,P
 Maurer, Inc., J. A., 37-01 31 St., Long Island City 1, N.Y.—A,C,E,F,H,I,O
 Meyer & Co., Hugo, 39 W. 60 St., New York 23, N.Y.—E,F
 Mich. Film Library, 15745 Rosemont Rd., Detroit 23, Mich.—M
 Mitchell Camera Corp., 666 W. Harvard St., Glendale 4, Calif.—E,Q
 Moviola Mfg. Co., 1451 Gordon St., Hollywood 28, Calif.—C
 National Sound Projector, 8044 N. Ridgeway, Skokie, Ill.—E
 Nemeth Studios, Ted, 729 7 Ave., New York 19, N.Y.—O
 Neumade Products Corp., 330 W. 42 St., New York 36, N.Y.—B,C,D,J,K,O
 Pacific Optical Corp., 5965 W. 98 St., Los Angeles 45, Calif.—F
 Pacific Universal Products Corp., 168 Vista Ave., Pasadena 8, Calif.—E,F
 Paillard Products Inc., 100 6th Ave., New York 13, N.Y.—A,D,E,F,F,Q
 Pancro Mirrors, Inc., 2958 Los Feliz Blvd., Los Angeles 39, Calif.—E
 Par Products Corp., 926 N. Citrus Ave., Hollywood 38, Calif.—A,E,F,G,Q
 Petrick Bros., 1938 N. Springfield Ave., Chicago 47, Ill.—M
 Photo Research Corp., 127 W. Alameda Ave., Burbank, Calif.—Q
 Precision Film Labs., 21 W. 46 St., New York 36, N.Y.—C,G,H,O
 Precision Products, 719 7 St., N.W., Washington, D.C.—E,F,H,I
 Prestoseal Mfg. Corp., 37-27 33 St., Long Island City 1, N.Y.—C,O
 Producers Sales Corp., 2704 W. Olive Ave., Burbank, Calif.—A,G,N
 Projection Optics Co., 330 Lyell Ave., Rochester 6, N.Y.—E,F
 Q-O-S Corp., 39 W. 60 St., New York 23, N.Y.—E,F
 RADIO CORP. OF AMERICA, ENGR'G PRODUCTS DIV., Camden, N.J.—E,G
 Raven Screen Co., 124 E. 124 St., New York 35, N.Y.—M
 Raytone Screen Corp., 165 Clermont Ave., Brooklyn 5, N.Y.—M
 Republic Lens, 916 9 Ave., New York, N.Y.—E
 Reevesound Co., 35-54 36 St., Long Island City 1, N.Y.—C,F,G,J,N
 Rolab Studios, Walnut Tree Hill, Sandy Hook, Calif.—A,C,F,P
 Saftco Glass Co., 4717 Stenton Ave., Philadelphia 44 Pa.—E
 Simpson Optical Mfg. Co., 3200 W. Carroll Ave., Chicago 24, Ill.—E
 S.O.S. Cinema Supply Co., 602 W. 52 St., New York, N.Y.—A,B,C,D,E,F,G,H,I,J,K,L,M,N,O,P,Q
 Sound Screen Supplies, 752 Broadway, New York 3, N.Y.—L,M
 Southwest Products, Inc., Alamo Downs Box 85-D, San Antonio 4, Tex.—I
 Special Effects & Equipment Inc., 418 W. 54 St., New York 19, N.Y.—L,N
 Strong Electric Co., 87 City Park Ave., Toledo 2, Ohio—F,N
 Swank Films, 19 W. 4 St., Dayton 2, Ohio—A,E,G,H
 Synchronic Prods., 766 Broadway, Bayonne, N.J.—A,B,C,N,O
 Taylors Corp., 3-33 Rutter St., Rochester 6, N.Y.—J
 T-Bar-V Inc., 5919 Hollywood Blvd., Hollywood 28, Calif.—F,I
 Technical Products Co., 19 N. Dunlap, Medical Center, P.O. Box 93, Memphis 1, Tenn.—F,M,P,Q
 Teleflex, 5919 Hollywood Blvd., Hollywood 28, Calif.—L,M,N
 Telemated Cartoons, 70 E. 45 St., New York, N.Y.—A
 Television Associates, E. Michigan St., Michigan City, Ind.—J,M
 Television Cartoons, Inc., 155 W. 46 St., New York, N.Y.—A,C,E
 Television Products Co., 1147 N. McCadden Pl., Hollywood 38, Calif.—J
 Television Specialty Co., 350 W. 31 St., New York 1, N.Y.—B,C,D,E,F,H,I,J,K,L,M,N,O,P,Q
 Trans-Lux Corp., 1270 Ave. of the Americas, New York 20, N.Y.—L,M
 Tressel Studio, 59 W. Hubbard St., Chicago 10, Ill.—A,N

Universal Reels, 9-10 37 Ave., Long Island City, N.Y.—J
 Vocalite Screen Corp., 19 Debevoise Ave., Roosevelt, N.Y.—M
 Wenzel Projector Co., 2511 S. State St., Chicago 16, Ill.—J
 Westrex Corp., 111 8 Ave., New York 11, N.Y.—D,E,F,G,H,L,M,N,Q
 Williams Brown & Earle, 904 Chestnut St., Philadelphia 7, Pa.—C,D,E,F,G,H,I,J,K,L,M,N,O,P,Q
 Williams Screen Co., 1674 Summit Lake Blvd., Akron 7, Ohio—M
 Willson Camera Co., 1401 Lawrence Rd., Havertown, Pa.—H,M
 WOLLENSAK OPTICAL CO., 850 Hudson Ave., Rochester 21, N.Y.—E
 Woodwelding, Inc., 3000 W. Olive Ave., Burbank, Calif.—I
 Zenith Optical Lab., 1920 Great Neck Rd., Copaque, N.Y.—E,F
 Zoomar Inc., 55 Sea Cliff Ave., Glen Cove, L.I., N.Y.—E,F,Q

60—MOTION PICTURE FILM

Film, magnetic stripe A
 Film, raw stock B
 Film storage C

Anso Div., General Aniline & Film Corp., Binghamton, N.Y.—B
 AUDIO DEVICES, INC., 444 Madison Ave., New York 22, N.Y.—A
 Bar-Ray Products, Inc., 209-25th St., Brooklyn 32, N.Y.—C
 Cinematic Development & Cinechrome Lab., 2125 32 Ave., San Francisco, Calif.—B
 Colonial Films, 2118 Mass. Ave., N.W. Washington 8, D.C.—B,C
 Compco Corp., 2251 W. St. Paul Ave., Chicago 47, Ill.—C
 DuPont de Nemours & Co., E. I., 10 & Market Sts., Wilmington 98, Dela.—B
 Eastman Kodak Co., 348 State St., Rochester 4, N.Y.—B
 Hallen Corp., 3503 W. Olive Ave., Burbank, Calif.—A
 Merix Chemical Co., 1021 E. 55 St., Chicago 16, Ill.—C
 Nemeth Studios, Ted, 729 Seventh Ave., New York 19, N.Y.—B
 Neumade Products Corp., 330 W. 42 St., New York 36, N.Y.—C
 Peerless Film Processing Corp., 165 W. 46 St., New York 36, N.Y.—C
 REEVES SOUNDCRAFT CORP., 10 E. 52 St., New York 22, N.Y.—A
 S.O.S. Cinema Supply Corp., 602 W. 52 St., New York 19, N.Y.—A,B,C
 Swank Films, 19 W. 4th St., Dayton 2, Ohio—C,B
 Taylors Corp., 3-33 Rutter St., Rochester 6, N.Y.—C
 Television Cartoons, Inc., 165 W. 46th St., New York, N.Y.—C
 Television Specialty Co., 350 W. 31 St., New York 1, N.Y.—B,C
 Tressel Studio, 59 W. Hubbard St., Chicago 10, Ill.—A
 Westrex Corp., 111 Eighth Ave., New York 11, N.Y.—A,C

61—MOTORS & GENERATORS

Alternators A
 Bearings W
 Brush Holders X
 Brushes, motor Y
 Commutators Z
 Converters, rotary B
 Couplings, flexible C
 Couplings, rigid D
 Dynamotors E
 Engines, gas F
 Generators, AC G
 Generators, DC H
 Generators, hand-crank I
 Generators, high frequency power J
 Motors, AC K
 Motors, control L
 Motors, DC M
 Motors, miniature N
 Motors, servo O
 Motors, synchro T
 Motors, timing P
 Motors, turntable Q
 Motors, universal R
 Power plants U
 Slip Ring & brush assemblies V
 Slip rings AA
 Starters S

Air Associates, Teterboro, N.J.—L,O



Airborne Accessories Corp., 1414 Chestnut Ave., Hillside 5, N.J.—H,K,N
 Airflyte Electronics Co., 21 Cottage St., Bayonne, N.J.—N
 AIR-MARINE MOTORS INC., 369 Bayview Ave., Amityville, L.I., N.Y.—A,G,J,K,L,N,O,P,Q
 Alliance Mfg. Co., Lake Park Blvd., Alliance, Ohio—K,N,Q
 Allis Co., Louis, 427 E. Stewart St., Milwaukee 4, Wisc.—A,G,H,K,L,M,S
 American Electric Motors, 4811 Telegraph Rd., Los Angeles 22, Calif.—A,G,J,K,L,N
 American Electronic Mfg., 9503 W. Jefferson Blvd., Culver City, Calif.—O,T
 Anglo Corp., 2037 W. Division St., Chicago 22, Ill.—H,P
 Arma Corp., Roosevelt Field, Garden City, N.Y.—G,K,L,M,N,O
 Arrow-Hart & Hegeman Electric Co., 103 Hawthorn St., Hartford 6, Conn.—S
 Barber-Colman Co., 1900 Rock St., Rockford, Ill.—H,K,M,N
 Belock Instrument Corp., 111-01 14th Ave., College Point 56, N.Y.—D
 BENDIX AVIATION CORP., Red Bank Division, Eatontown, N.J.—E,M,N,P
 Bodine Electric Co., 2254 W. Ohio St., Chicago 40, Ill.—K,L,M,N,U
 Bogue Electric Mfg. Co., 52 Iowa Ave., Paterson 3, N.J.—A,G,H,K,L,M,S
 BORG EQUIP. DIV. BORG CORP., GEORGE, 120 S. Main St., Janesville, Wis.—O,U
 British Electronic Sales Co., 23-03 45th Rd., Long Island City 1, N.Y.—Q
 Buda Co., 154 & Commercial Aves., Harvey, Ill.—F,R
 B/W Controller Corp., 2200 E. Maple Rd., Birmingham, Mich.—S
 CARTER MOTOR CO., 2644 N. Maplewood Ave., Chicago 47, Ill.—A,B,E,H,M
 Caterpillar Tractor Co., Peoria, Ill. F.R
 Century Electric Co., 1806 Pine St., St. Louis 3, Mo.—B,G,H,K,M,R
 Collectron Corp., 216 E. 45 St., New York 17, N.Y.—AA
 Columbia Electric Mfg. Co., 4519 Hamilton Ave., Cleveland 14, Ohio—E,G,H
 Communication Devices Co., 2331 12 Ave., New York City 27, N.Y.—B,E,H,I,M
 Conn. Telephone & Electric Co., 70 Britannia St., Meriden, Conn.—L,N,O
 Continental Electric Co., 325 Ferry St., Newark 5, N.J.—A,B,E,G,H,K,M
 Controltec, P. O. Box 68, Gracie Station, New York City 26, N.Y.—B,K
 Cramer Co., R.W., Centerbrook, Conn.—N,P,Q
 Cutler-Hammer, Inc., 436 N. 12 St., Milwaukee 1, Wis.—L
 Dalmator Co., 1375 Clay St., Santa Clara, Calif.—E,G,H,K,L,M,N,O
 Delco-Remy Div.—General Motors Corp., P. O. Box 640, Anderson, Ind.—G,H,S
 Detroit Diesel Engine Div., General Motors Corp., 13400 W. Outer Dr., Detroit 28, Mich.—G,H
 Diehl Mfg. Co., 1186 Finnerne Ave., Somerville, N.J.—K,L,M,N,O
 Doelcam Corp., 1400 Soldiers Field Rd., Boston 35, Mass.—O,T
 D. & R. Ltd., 402 Gutierrez St., Santa Barbara, Calif.—A
 DUMONT LABS. INC., ALLEN B., TV Transmitter Dept., Mobile Comm. Dept., 1500 Main St., Clifton, N.J.—E
 Eagle Signal Corp., 202 20 St., Moline, Ill.—P
 Eastern Air Devices Inc., 385 Central Ave., Dover, N.H.—A,B,G,K,L,N,O,Q
 ECLIPSE-PIONEER DIV., Bendix Aviation Corp., Teterboro, N.J.—E,H,L,O
 Eicor, Inc., 1501 W. Congress St., Chicago 7, Ill.—A,B,E,G,H,I,M,N
 Eisler Eng'g. Co., 770 S. 13, Newark, N.J.—Q
 Electric Controller & Mfg. Co., 2700 E. 79th St., Cleveland 4, Ohio—L,S
 Electric Indicator Co., Camp Avenue, Springdale, Conn.—A,G,H,K,L,M,N,O,P,Q,T,U
 Electric Specialty Co., 211 South St., Stamford, Conn.—A,B,E,G,H,J,K,M,O,U
 Electro Craft Inc., 68 Jackson St., Stamford, Conn.—A,E,G,H,K,L,M,N,O
 Electro Development Co., 6006 Washington Blvd., Culver City, Calif.—U
 Electro Eng'g. Products, 609 W. Lake St., Chicago 10, Ill.—E,V
 Electronic Heating Corp., 66 Needham St., Newton Highlands 61, Mass.—J
 Electronic Processes Corp., 1021 San Antonio Rd., Los Altos, Calif.—J
 Electro Tec Corp., 10 Romanelli Ave., S. Hackensack, N.J.—AA
 Electymer Motor Products, Genoa, Ill.—P
 Emerson Electric Mfg. Co., 8100 Florissant Ave., St. Louis 21, Mo.—K,M
 Fidelity Electric Co., 332 N. Arch St., Lancaster, Pa.—A,G,H,K,M
 Furnas Electric Co., 1000 McKee St., Batavia Ill.—L,S

GALBRAITH & SON, 450 6 Ave., New York 11, N.Y.—S
 General Armature & Mfg. Co., P. O. Box 370, Lock Haven, Pa.—H,S
 GENERAL CONTROL CO., 1200 Soldiers Field Rd., Boston 34, Mass.—P
 GENERAL ELECTRIC CO., Apparatus Div., 1 River Rd., Schenectady 5, N.Y.—E,O,G
 General Industries Co. Olive & Taylor Sts., Elyria, Ohio—K,M,Q
 General Magnetics, 135 Bloomfield Ave., Bloomfield, N.J.—B
 Georator Corp., Manassas, Va.—A,G,H,J
 GIANNINI & CO., C. M., 914 E. Green St., Pasadena 1, Calif.—O
 Gleason-Avery, Inc., 45 Aurelius Ave., Auburn, N.Y.—K,N,P,Q
 Globe Industries Inc., 1784 Stanley Ave., Dayton 4, Ohio—K,M,N,O
 G-M Laboratories, Inc., 4300 N. Knox Ave., Chicago 41, Ill.—O
 Graphite Metallizing Corp., 1015 Nepperhan Ave., Yonkers, N.Y.—X,Y,Z
 Greenleaf Mfg. Co., 7814 Maplewood Ind. Ct., St. Louis 17, Mo.—A,B,E,G,H,K,L,M,N,O,T
 Gulton Mfg. Corp., 212 Durham Ave., Metuchen, N.J.—J
 Haft & Sons, 950 Kent Ave., B'klyn. 5, N.Y.—Q
 Hallen Corp., 3503 W. Olive Ave., Burbank, Calif.—B
 Hallett Mfg. Co., 1601 W. Florence Ave., Inglewood, Calif.—G,H,R
 Hansen Mfg. Co., RR #1, Princeton, Ind.—K,M,P,Q
 Haydon Co., A. W., 235 N. Elm St., Waterbury 20, Conn.—M,N,P
 Haydon Mfg. Co., 245 East Elm St., Torrington, Conn.—P
 Hercules Elec. Mach'y & Equip. Co., 1442 E. Washington Blvd., Los Angeles, Cal.—R
 Hertner Electric Co., 12690 Elmwood Ave., Cleveland 11, Ohio—A,B,G,H,J,K,L,M,N,O
 Holtzer-Cabot Div.—National Pneumatic Co., 125 Army St., Boston 19, Mass.—B,E,N,O
 Howard Industries, 1760 State St., Racine, Wis.—G,H,I,K,M,U
 Induction Motors Corp., 570 Main St., Westbury, L.I., N.Y.—A,K,L,N,O
 Inet Div., Leach Corp., 4441 S. Santa Fe Ave., Los Angeles 58, Calif.—A,F,G,H
 Infra Electronic Corp., Roseland, N.J.—G,K,N,O,T
 Instrument Corp. of America, Box 217, Blacksburg, Va.
 Instrument Motors, Acosta St., Stamford, Conn.—A,G,H,I,K,L,M,N,O,U
 Jack & Heintz, Inc., 17600 Broadway, Cleveland 1, Ohio—A,G,H,K,M,S
 Kearfott Co., 1378 Main Ave., Clifton, N.J.—L,O,T
 KELLOGG SWITCHBOARD & SUPPLY CO., 79 W. Monroe St., Chicago 3, Ill.—I
 KETAY MFG. CORP., 555 Broadway, New York 12, N.Y.—K,L,N,O,T
 Kinetix Inst. Co., 902 Broadway, New York 10, N.Y.—K,L,O
 KOLLSMAN INSTRUMENT CORP., 80-08 45 Ave., Elmhurst 73, N.Y.—G,L,N,O,T
 Kupfrian Mfg. Co., 367 State St., Binghamton, N.Y.—A,C,F,G
 Lear, Inc., 11916 W. Pico Blvd., Los Angeles 64, Calif.—A,B,E,K,L,M,N,O,T
 Leland Electric Co., P.O. Box 1060, Dayton, Ohio—A,B,G,H,J,K,M
 Lima Electric Products, 1021 Independence Rd., Lima, Ohio—K
 Link-Belt Co., 307 N. Michigan Ave., Chicago 1, Ill.—C,D
 Lytle Engineering & Mfg. Co., 105 W. Monroe St., Chicago 3, Ill.—L,P
 Mack Electric Devices Inc., 48 Glenside Ave., Wyncote, Pa.—L,S
 Mag-Electric Products Inc., 14405 Crenshaw Ave., Gardiner, Calif.—R
 Makepeace Co., D. E. Div., Union Plate & Wire Co., Attleboro, Mass.—V
 Marathon Electric Mfg. Corp., Wausau, Wis.—A,B,G,H,K,M
 Master Appliances Mfg. Co., Fourth & Ontario Sts., Racine, Wis.—E,K,M,N
 Master Electric Co., 126 Davis Ave., Dayton 1, Ohio—A,G,H,K,M
 Maxson Corp., W.L., 460 W. 34th St., New York 1, N.Y.—O
 Merkle-Korff Gear Co., 213 N. Morgan St., Chicago 30, Ill.—L,N,O,P,U
 Metrotyp Corp., 6100 Archer Rd., Summit Ill.—B
 Mica Insulator Co., P.O. Box 1076, Schenectady 1, N.Y.—D
 Midco Mfg. & Dist. Co., 1129 S. 13th St., Sheboygan, Wisc.—F,G,H
 Midwestern Geophysical Lab., 3401 S. Harvard St., Tulsa, Okla.—O
 Mission-Western Engineers, 132 W. Colorado Ave., Pasadena, Calif.—N
 Mohawk Business Machines Corp., 944 Halsey St., Brooklyn 37, N.Y.—M,N
 Mole-Richardson Co., 937 No. Sycamore Ave., Hollywood 38, Calif.—H
 Motordyne Inc., 2661 S. Myrtle Ave., Monrovia, Calif.—A,B,E,G,H,I,K,M,N,U
 Motor Generator Corp., Hobart Sq. Troy Ohio—B,H,J
 Motoresearch Co., 1600 Junction Ave., Racine, Wisc.—A,B,G,H,J,N
 Mueller Eng'g. Co.; Heinz A., 801 N. Linden Ave., Oak Park, Ill.—K,L,M,N,O,P

New Rochelle Tool Corp., 320 Main St., New Rochelle, N.Y.—J
 Onan & Sons, Inc., D.W. University Ave., S. E. at 25, Minneapolis 14, Minn.—F.G.H
 Oster Mfg. Co., John, 1 Main St., Racine, Wisconsin—G.H.K.L.M.N.O.T.U
 Park Armature Co., 883 Boylston St., Boston 16, Mass.—E.G.H.J.K.L.M.N.Q
 Par Products Corp., 926 N. Citrus Ave., Hollywood 38, Calif.—S
 Peerless Electric Co., 1401 W. Market St., Warren, Ohio—K.M
 Pennwood Numechron Co., 7249 Frankstown Ave., Pittsburgh 8, Pa.—P
 Phoenix Precision Instr. Co., 3803 N. 5th St., Philadelphia 40, Pa.—O
 Picco Instruments & Controls Corp., 3593 Hayden Ave., Culver City, Calif.—K.L.M. N.O.P
 Pioneer Electric & Research Corp., 743 Circle Ave., Forest Park, Ill.—M.N.U
 Pioneer Gen-E-Motor Corp., 5841 W. Dickens Ave., Chicago 39, Ill.—E.G.H.I.R
 Portable Electric Tools, Inc., 200 W. 83rd St., Chicago 20, Ill.—A.B.E.G.H.J.K.M.N.O
 Pratt, Albert, 1939 N. 18 St., Milwaukee 5, Wisc.—E
 Ray-O-Vac Co., Special Products Div., 212 E. Washington Ave., Madison 10, Wisc.—M
 Redmond Co., Owosso, Mich.—A.B.E.G.H.I.K. L.M.N.O
 Reliance Electric & Eng'g Co., 1088 Ivanhoe Rd., Cleveland 10, Ohio—G.H.K.M
 Safe Flight Instrument Corp., 4 Water St., White Plains, N.Y.—B.E
 Saratoga Industries, Ballston Ave., Saratoga Springs, N.Y.—I
 Schwien Eng'g. Co., 16217 Lindbergh St., Van Nuys, Calif.—K.L.M.N.O.T
 Servomechanisms, Inc., 500 Franklin Ave., Garden City, N.Y.—L.N.O.P
 Servo-Tek Products Co., 1086 Goffie Rd., Hawthorne, N.J.—H.M.N.O.U
 Sessions Clock Co., Forestville, Conn.—P
 Small Motors Inc., 2076 Elston Ave., Chicago 14, Ill.—E.G.H.I.K.M.N.O.U
 Specialty Battery Co., 212 E. Washington Ave., Madison 10, Wisc.—N
 Speedway Mfg. Co., 1834 S. 52 Ave., Cicero 50, Ill.—K.L.M.U
 Stancil-Hoffman Corp., 921 N. Highland Ave., Hollywood 38, Calif.—T
 Standard Coil Products Co., 2329 N. Pulaski Rd., Chicago 39, Ill.—K.L.N.O
 Star-Kimble Motor, 200 Bloomfield Ave., Bloomfield, N.J.—A.B.G.H.K.M
 Stephens Mfg. Corp., 8538 Warner Dr., Culver City, Calif.—O
 Sterling Electric Motors, 5401 Telegraph Rd., Los Angeles 22, Calif.—M
 Tech Laboratories Inc., Bergen & Edsall Bldgs., Palisades Park, N.J.—B
 Telechron Dept., General Electric Co., 43 Homer Ave., Ashland, Mass.—N.P
 Telemarine Communications Co., 3040 W. 21 St., Brooklyn 24, N.Y.—B.E.F
 Thermador Electrical Mfg. Co., Electronics Div., 2000 S. Camfield Ave., Los Angeles 22, Calif.—K.N
 Thompson Clock Co., H.C., 38 Federal St., Bristol, Conn.—K.M.N.P.Q
 Trans-American Precision Gear Corp., 34-17 Lawrence St., Flushing 54, N.Y.—O
 TRANSCOIL CORP., 107 Grand St., New York 13, N.Y.—O
 United Pressed Products Co., 741 W. Harrison St., Chicago 7, Ill.—K.Q.N
 Universal Electric Co., 300 E. Main St., Owosso, Mich.—K.M
 Universal Scientific Co., 1102 Shelby St., Vincennes, Ind.—A.G.H.K.M.O.T
 U.S. Electrical Motors, 200 E. Saouson Ave., Los Angeles 54, Calif.—K.L
 U.S. Motors Corp., 420 Nebraska St., Oshkosh, Wisc.—F.G.H.R
 Vibro-Ceramics Corp., Metuchen, N.J.—J
 Western Mfg. Co., 1400 W. 22 St., Kearney, Nebr.—E.K.M.N
 Westinghouse Electric Corp., Box 868, Pittsburgh 30, Pa.—G.H.K.L.M.N.O.S
 WINCHARGER CORP., E 7 at Division St., Sioux City 2, Iowa—B.E.G.H.J.M.N.R.U

62—NAVIGATION SYSTEMS

Distance measuring equipment . . . H
 Loran . . . A
 Omranige . . . B
 Radar . . . C
 Raydist . . . D
 Shoran . . . E
 Sofar . . . F
 Sonar . . . G

Aero Electronics Co., 1612 N. Wells St., Chicago 10, Ill.—B.E
 Aeronautical Electronics, P.O. Box 6043, Raleigh, N.C.—B
 Aeronautical Radio Mfg. Co., 155 1 St., Mineola, N.Y.—A.B.C
 Aircraft Armaments Inc., 4415 Reestertown Rd., Baltimore 15, Md.—A.B.C.D.E.F
 AIRCRAFT RADIO CORP., P. O. Box 150, Boonton, N.J.—B

Allied Intl. Inc., 230 Park Ave., New York 17, N.Y.—B
 American Electroneering Corp., 2040 Colo. Ave., Santa Monica, Calif.—B
 American Radio Co., 445 Park Ave., New York 22, N.Y.—C
 Atlas Precision Products Co., 3801 Castor Ave., Philadelphia 24, Pa.—A.C
 Audio Products Corp., 2265 Westwood Blvd., Los Angeles 64, Calif.—A.C
 Avionex Electronics Corp., 2838 North Naomi St., Burbank, Calif.—A
 Beam Instruments Corp., 350 5 Ave., New York 1, N.Y.—B.C
 BENDIX RADIO DIV., BENDIX AVIATION CORP., E. Joppa Rd., Towson 4, Md.—B.C
 BORG EQUIP. DIV., BORG CORP., GEORGE 120 S. Main St., Janesville, Wis.—B
 Canoga Corp., 5955 Sepulveda Blvd., Van Nuys, Calif.—C
 Capehart-Farnsworth Co., Div. I.T. & T. Fort Wayne, Ind.—C
 Color Television Inc., 973 E. San Carlos Ave., San Carlos, Calif.—C
 Communication Devices Co., 2331 12 Ave., New York 27, N.Y.—A.G
 Cubic Corp., 2841 Canon St., San Diego 6, Calif.—H
 Dayton Aviation Radio & Equip. Corp., RR #3 Troy, Ohio—B
 Edo Corp., 1310 111 St., College Point, N.Y.—G
 Electrotechnic Corp., 15601 Arrow Hwy., Azusa, Calif.—G
 Elk Electronic Labs. Inc., 333 W. 52 St., New York 19, N.Y.—A
 El-Tronics, Inc., 437 N. 5th St., Philadelphia 23, Pa.—A.G
 Ereo Radio Labs., 637 Stewart Ave., Garden City, N.Y.—B
 FEDERAL TELEPHONE & RADIO CORP., DIV. I.T. & T., 100 Kingsland Rd., Clifton, N.J.—A.B
 Freed Electronics & Controls Corp., 200 Hudson St., New York 13, N.Y.—A.C.E.G
 GENERAL COMMUNICATION CO., 681 Beacon St., Boston 15, Mass.—C
 General Electrosonics Inc., 32 W. 22 St., New York 10, N.Y.—A.G
 Gulton Mfg. Corp., 212 Durham Ave., Metuchen, N.J.—G
 Hastings Instrument Co., Superhighway at Pine Ave., Hampton, Va.—D
 Hazeltine Electronics Corp., 58-25 Little Neck Pkwy., Little Neck 62, N.Y.—C
 Industrial Television Inc., 369 Lexington Ave., Clifton, N.J.—A
 Kinetex Instrument Co., 902 Broadway, New York 10, N.Y.—A.B.C.D.E.F.G
 Laboratory for Electronics Inc., 75 Pitts St., Boston 14, Mass.—C
 Lavole Labs. Inc., Morganville, N.J.—B.C
 Lear, Inc., 11916 W. Pico Blvd., Los Angeles 64, Calif.—B
 L & O Research & Devel. Corp., 134 N. Wayne Ave., Wayne, Pa.—G
 Mackay Radio & Telegraph Co., 345 Hudson St., New York 14, N.Y.—C
 Marconi's Wireless Telegraph Co., 23 Beaver St., New York 4, N.Y.—B.C
 Maryland Electronic Mfg. Corp., 5009 Calvert Rd., College Park, Md.—B
 Maxson Corp., W. L., 460 W. 34 St., New York 1, N.Y.—C.E
 MELPAR, INC., 452 Swann Ave., Alexandria, Va.—C
 Mitchell Industries, Box 17, Mineral Wells, Tex.—B
 National Aeronautical Corp., 180 S. Main St., Ambler, Pa.—B.H
 National Instrument Co., 23 E. 26 St., New York 10, N.Y.
 Norden Instruments & Systems, Milford, Conn.
 Otis Elevator Co., 35 Ryerson St., Brooklyn 5, N.Y.—A.C.E.G
 Pacific Mercury Television Mfg. Corp., 5955 Van Nuys Blvd., Van Nuys, Calif.—B.C
 Polytechnic Research & Development Co., 202 Tillary St., Brooklyn 1, N.Y.—H
 PRESTO RECORDING CORP., Box 500, Paramus, N.J.—A
 Radio Corp. of America, Eng'g Products Div., Camden, N.J.—A.B.C.E.G
 RAYTHEON MFG. CO., Waltham 54, Mass.—C.G
 Ryan Electronics, 19159 John R St., Detroit 3, Mich.—C
 Sanders Associates, Inc., 137 Canal St., Nashua, N.H.—C.G
 Selmograph Service Corp., P. O. Box 1590, Tulsa, Okla.—A
 Spencer-Kennedy Labs., 186 Mass. Ave., Cambridge 39, Mass.—C
 Sperry Gyroscope Co., Great Neck, N.Y.—A.C
 Stavid Eng'g. Inc., 312 Park Ave., Plainfield, N.J.—B.C
 Telemarine Communications Co., 3040 W. 21 St., Brooklyn 24, N.Y.—A.C.G
 Telephonics Corp., Park Ave., Huntington, N.Y.—G
 Telescreen Corp., 36 Grove St., New Canaan, Conn.—C
 Texas Instruments Inc., 6000 Lemmon Ave., Dallas 9, Tex.—C
 Transmitter Equipment Mfg. Co., 35 Ryerson St., Brooklyn 5, N.Y.—A.C.E.G
 VECTRON INC., 400 Main St., Waltham 54, Mass.—C.E
 White & Sons, Inc., O., 178 Atlantic Ave., Boston 10, Mass.—G

Wilcox Electric Co., 1400 Chestnut St., Kansas City 27, Mo.—B.C

63—PHOTOELECTRIC EQUIPMENT

Cells, photoelectric A
 Cells, photovoltaic B
 Colorimeters C
 Light supplies E
 Mirrors F
 Photoelectric units, complete D
 Photometers G
 Relays H

Acme Telectronix, Div., NEA Service, 1200 W. 3rd St., Cleveland 13, Ohio—A.D.F
 Allied Research & Eng'g. Inc., 1041 N. Las Palmas Ave., Hollywood 38, Calif.—F
 American Chronoscope Corp., 316 W. 1st St., Mount Vernon, N.Y.—D
 American Optical Co., Instrument Div., Box A, Buffalo 15, N.Y.—A
 Arnhold Ceramics Inc., 1 E. 57th St., New York 22, N.Y.—A
 Autel Electronics Corp., 1950 Farmingdale Rd., Westfield, N.J.—D
 Automatic Electronic Eng'g. Co., 2207 E. North Ave., Milwaukee 2, Wisc.—D
 Autotron Co., P.O. Box 722, Danville, Ill.—D
 Avia Products Co., 7266 Beverly Rd., Los Angeles 36, Calif.—E
 Bache, Semon & Co., 636 Greenwich St., New York 14, N.Y.—F
 Baird Associates Inc., 33 University Rd., Cambridge, Mass.—G
 Barton Electronics, Inc., 955 Asylum Ave., Hartford 5, Conn.—D
 Bausch & Lomb Optical Co., 628 St. Paul St., Rochester, N.Y.—C.F
 Beckman Instruments Inc., 820 Mission St., S. Pasadena 1, Calif.—C
 BERKELEY SCIENTIFIC, DIV. BECKMAN INSTRUMENTS INC., 2200 Wright Ave., Richmond 3, Calif.—D
 Bowen & Co., 4712 Bethesda Ave., Bethesda, Md.—D.F
 Bradley Laboratories Inc., 168 Columbus Ave., New Haven, Conn.—A.B
 Brinkmann Instruments Inc., 378 Great Neck Rd., Great Neck, L.I., N.Y.—G
 Buhl Optical Co., 1009 Beech Ave., Pittsburgh 12, Pa.—F
 Central Scientific Co., 1700 Irving Park Rd., Chicago 13, Ill.—C
 Coleman Instruments Inc., 318 Madison St., Maywood, Ill.—C
 Deitz Co., S. J., 38 River Edge Rd., River Edge, N.J.—H
 Delaware Optical Labs., 56 Williams St., Lansdowne, Pa.—B.C.E.F.G
 Denrad Mfg. Co., Inc., 310 W. Woodard St., Denison, Texas—H
 Digital Instrument Co., 212 Almeria Ave., Coral Gables, Fla.—D.E.H
 DUMONT LABS., INC., INSTRUMENT DIV., 760 Bloomfield Ave., Clifton, N.J.—A
 Electric Eye Equip. Co., 6 W. Fairchild St., Danville, Ill.—C
 Electrical Service Co., 1271 Mission St., San Francisco 3, Calif.—A.D.H
 Electrodyne, Endicott St., Norwood, Mass.—D
 Electronic Control Corp., 1673 E. Forest Ave., Detroit 7, Mich.—D.E.H
 Electro-Physics Co., 287 Broadway, New York 7, N.Y.—D.G.H
 Electron-Radar Products, 1041 N. Pulaski Rd., Chicago 51, Ill.—A.B.D
 Electro-Tech Equip. Co., 308 Canal St., New York, N.Y.—A.B.D.H
 Electro Vision Lab., 80-16 Crescent St., Long Island City 2, N.Y.—A.D.E.H
 Eng'g. Research & Devel. Co., Addison, Ill.—D.E.H
 Ess Instrument Co., 96 S. Washington Ave., Bergenfield, N.J.—C.D
 FAIRCHILD CAMERA & INSTRUMENT CORP., Robbins Lane, Syosset, N.Y.—A.B. C.D.E.F.G.H
 FEDERAL TELEPHONE & RADIO CO., Div. I.T. & T., 100 Kingsland Rd., Clifton, N.J.—A
 FRED ELECTRONICS & CONTROLS CORP., 200 Hudson St., New York 13, N.Y.—C.D.G
 Fretco Inc., 406 N. Craig St., Pittsburgh 13, Pa.—A
 Gardner Lab. Inc., H. A., 4723 Elm St., Bethesda 14, Md.—C.G
 GENERAL CONTROL CO., 1200 Soldiers Field Rd., Boston 34, Mass.—H
 GENERAL ELECTRIC CO., Apparatus Div., 1 River Rd., Schenectady 5, N.Y.—G
 Glens Falls Lab. Inc., 284 Glen St., Glens Falls, N.Y.
 Haledv Electronics Co., 57 William St., New York 5, N.Y.—D.H
 Hansen Co., Wm., 165 Silverbrook Ave., Niles, Mich.—D

Hanson-Gorrill-Brian, 1 Continental Hill, Glen Cove, N.Y.—D
 Harwood Mfg. Co., 466 W. Superior St., Chicago 10, Ill.—E
 Hercules Elec. Mach'y. & Equip. Co., 1442 E. Washington Blvd., Los Angeles 21, Calif.—H
 Hewlett-Packard Co., 395 Page Mill Rd., Palo Alto, Calif.—D
 Hudson Lamp Co., 528 Elm St., Arlington, N.J.—E
 Hughey & Phillips, 3300 N. San Fernando Blvd., Burbank, Calif.—D
 Industrial Electronics Co., Hanover St., Hanover, Mass.—D-E
 Instrument Devel. Labs., 163 Highland Ave., Needham 94, Mass.—C
 IQ Industries, 6110 Wilshire Blvd., Los Angeles 36, Calif.—A,C,D,E,H
 INTERNATIONAL RECTIFIER CORP., 1521 E. Grand Ave., El Segundo, Calif.—A,H
 Jack Scientific Instrument Co., Bill Box, C-4, Solana Beach, Calif.—D
 Leitz, E., 468 4 Ave., New York 16, N.Y.—C
 Libbey-Owens-Ford Glass Co., Liberty Mirror Div., Brackenridge, Pa.—F
 Lumenite Electronic Co., 407 S. Dearborn St., Chicago 6, Ill.—D,H
 Lysco Mfg. Co., 1401 Clinton St., Hoboken, N.J.—D
 Magnex Corp., 90-28 Van Wyck Expressway, Jamaica 18, N.Y.—C,D,E
 MANUFACTURERS ENGG. & EQUIP. York & Mill Rds., Hatboro, Pa.—C,G
 Maurer Inc., J.A., 37-01 31st St., Long Island City 1, N.Y.—F
 McNeill Eng'g. Co., 4057 W. Van Buren St., Chicago 24, Ill.—D
 Michigan Electronics, Inc., 854 N. Rockwell St., Chicago 22, Ill.—A,D
 Mullenbach Electrical Mfg. Co., 2300 E. 27th St., Los Angeles 58, Calif.—H
 Multi-Tron Lab., 4624 Washington Blvd., Chicago 44, Ill.—A,D,E,H
 Natural Lighting Corp., 612 West Elk Ave., Glendale 4, Calif.—E
 Pacific Universal Products Corp., 168 Vista Ave., Pasadena 8, Calif.—F
 Pancer Mirrors Inc., 2958 Los Feliz Blvd., Los Angeles 39, Calif.—F
 Patwin Instruments, Div. of Patent Button Co., 41 Brown St., Waterbury 20, Conn.—G
 Petroff, Peter A., 127 Water St., New York 5, N.Y.—D
 PHAOSTRON CO., 151 Pasadena Ave., S. Pasadena, Calif.—H
 Phoenix Precision Instrument Co., 3803 N. 5 St., Philadelphia 40, Pa.—A,R,C,D,E,F,G,H
 Photobell Co., 116 Nassau St., New York 38, N.Y.—D,H
 Photocron Research Products, 421 N. Foothill Blvd., Pasadena 8, Calif.—G
 Photoswitch Inc., 77 Broadway, Cambridge 42, Mass.—A,B,D,E
 Photovolt Corp., 95 Madison Ave., New York 16, N.Y.—C,G
 Putter Instrument Co., 115 Cutter Mill Rd., Great Neck, L.I., N.Y.—D
 Precise Measurements Co., 942 Kings Highway, Brooklyn 23, N.Y.—D
 Price Electric Corp., Frederick, Md.—H
 Process & Instruments, 15 Stone Ave., Brooklyn 33, N.Y.—G
 Remco Mfg. Co., 545 N. La Salle St., Chicago 10, Ill.—H
 Ripley Co., 1 Factory St., Middletown, Conn.—E,F,G,H
 Rubicon Corp., Ridge Ave. at 35th St., Philadelphia 32, Pa.—C
 Springfield Enterprises, P.O. Box 54, Springfield Gardens 13, N.Y.—D,E
 Standard Piezo Co., P.O. Box 513, Carlisle, Pa.—A,D
 Tabet Mfg. Co., 1336 Ballentine Blvd., Norfolk, Va.—D
 Technical Products Co., 19 N. Dunlap, Medical Box 93, Memphis 1 Tenn.—C,G,H
 TelAutograph Corp., 16 W. 61 St., New York 23, N.Y.—H
 TELECHROME, INC., 88 Merrick Rd., Amityville, L.I., N.Y.—C
 Thompson Clock Co., H. C., 38 Federal St., Bristol, Conn.—A,B,D,E,F,G,H
 Tracerlab, Inc., 130 High St., Boston 10, Mass.—E
 TRANSISTOR PRODUCTS INC., Snow & Union Sts., Boston 35, Mass.—A,B
 Ultrasonic Eng'g. Co., P. O. Box 46, Maywood, Ill.—G
 U.M. & F. MFG. CORP., 10929 Van Owne St., N. Hollywood, Calif.—C,G
 Vickers Electric Div., Vickers, Inc., 1835 Locust St., St. Louis 3, Mo.—A
 Vinson Co., E.R., 1401 Middle Harbor Rd., Oakland 20, Calif.—D,H
 Welch Electric Co., 1221 Wade St., Cincinnati 14, Ohio—H
 WELCH MFG. CO., W. M., 1515 Sedgwick St., Chicago 10, Ill.—C,D,G
 WESTON ELECTRICAL INSTRUMENT CORP., 614 Frelinghuysen Ave., Newark 5, N. J.—A,H
 Western Electronic Enterprises, 3348 W. Compton Blvd., Gardena, Calif.—A
 Wornor Electronic Devices, Rankin, Ill.—D
 Wright Eng'g. Co., 180 E. Calif. St., Pasadena 1, Calif.—D
 Zenith Optical Lab., 1940 Great Neck Rd., Copiague, L.I., N.Y.—F
 Zoomar, Inc., 55 Sea Cliff Ave., Glen Cove, L.I., N.Y.—E,F,G



64—PLASTIC MATERIALS

Acrylics A
 Cellulose acetate C
 Cellulose acetate butyrate D
 Cellulose ethyl E
 Cellulose nitrate F
 Chloroprene rubber T
 Epoxy X
 Laminates G
 Melamines H
 Methyls J
 Phenolics J
 Polyamides U
 Polyethylene K
 Polystyrene L
 Polytetrafluoroethylene M
 Polytrifluoroethylene N
 Polyvinyls V
 Resin, aniline-formaldehyde O
 Resin, cast P
 Resin, vinyl Q
 Rubber, synthetic W
 Urea formaldehyde S

Abbott Plastics & Machine Corp., 6322 N. Clark St., Chicago 26, Ill.—A,C,D,E,F,L,T,V
 Ace Plastic Co., 91-30 Van Wyck Expressway, Jamaica 35, N.Y.—A,C,D,E,J,K,P
 Actioncraft Products, 8 Sagamore Hill Dr., Port Washington, L.I., N.Y.—G,V
 Airfyte Electronics Co., 21 Cottage St., Bayonne, N.J.—P
 Allied Engraving & Stamping Co., 161 Ellicott St., Buffalo 3, N.Y.—A,C,D,E,F,G,H,I,J,K,L,M,N,O,P,Q,S,T,U,V
 ANTARA CHEMICALS, DIV. GEN'L. ANILINE & FILM CORP., 435 Hudson St., New York 14, N.Y.—V
 Auburn Button Works Inc., 48 Canoga St., Auburn, N.Y.—V
 Baer Co., N. S., 1 Montgomery St., Hillside 5, N.J.—C,D,G,H,J
 Bakelite Co., Div. Union Carbide & Carbon Corp., 30 E. 42 St., New York 17, N.Y.—J,K,L,N,O,S
 Barrett Div., Allied Chemical & Dye Corp., 2112 Sylvan Ave., Toledo 6, Ohio—G,H,J,S
 Blacher, B., 752 Bway., New York 3, N.Y.—C,V
 Bodnar Industries, 19 Rail Road Ave., New Rochelle, N.Y.—A
 Bolta Corp., 70 Garden St., Lawrence, Mass.—G
 Brand & Co., Wm., North & Valley Sts., Willimantic, Conn.—K,V
 Cast Optics Corp., 1010 Post Rd., Riverside, Conn.—A,P,L
 Catalin Corp. of America, 1 Park Ave., New York 16, N.Y.—H,J,L,S
 Celanese Corp. of America, 180 Madison Ave., New York 16, N.Y.—C
 Ciba Co., 627 Greenwich St., New York 14, N.Y.—O
 Continental Textile & Supply Co., 4245 W. Armitage Ave., Chicago 39, Ill.—K,Q,V
 Courmand & Co., E.L., Box 177, Havre de Grace, Md.—A
 Cox & Co., 115 E. 23rd St., New York 10, N.Y.—X
 Crane Packing Co., 1800 Cuyler Ave., Chicago 13, Ill.—M
 Dow Chemical Co., Midland, Mich.—E,L,Q,V
 DuPont De Nemours & Co., E. L., 10 & Market Sts., Wilmington 98, Del.—A,C,F,K,M,Q
 Dobeckmun Co., Box 6417, Cleveland 1, Ohio—G
 Durez Plastics & Chemicals, Inc., 1926 Walck Rd., N. Tonawanda, N.Y.—J,P
 Dynakon Corp., 9623 Clinton, Cleveland, Ohio—G,P
 Eastman Kodak Co., 343 State St., Rochester 4, N.Y.—C,D
 Electrofilm Inc., 7116 Laurel Canyon Blvd., N. Hollywood, Calif.—C, D, E, F, G, K, L, M, N, O, Q, S, U, V
 Electronic Mechanics, Inc., 101 Clifton Blvd., Clifton, N.J.—M,N
 Electro-Technical Products Div., Sun Chemical Corp., 113 E. Centre St., Nutley 10, N.J.—G,H,K,N
 Emeloid Co., 1239 Central Ave., Hillside, N.J.—C,D,F,G,K,L,Q
 EMERSON & CUMING, 869 Washington St., Canton, Mass.—G,P

Extruders, Inc., 3232 W. El Segundo Blvd., Hawthorne, Calif.—K
 Fidelity Chemical Products, 470 Frelinghuysen Ave., Newark 5, N.J.—D
 Forman Co., Inc., B. G., 238 William St., New York 38, N.Y.—P
 Formica Co., 4614 Spring Grove Ave., Cincinnati 32, Ohio—G,H,J
 Franklin Fibre-Lamitex Corp., Wilmington 89, Del.—C,J,S
 Garlock Packing Co., Main St., Palmyra, N.Y.—M,N
 GENERAL ELECTRIC CO., CHEMICAL DIV., 1 Plastics Ave., Pittsfield, Mass.—G,J
 General Plastics Corp., 165 3rd Ave., Paterson 4, N.J.—M,N
 General Tire & Rubber Co., Industrial Products Div., Wabash, Ind.—G,K,V
 Gering Products, Inc., N. 7 St., & Monroe Ave., Kenilworth, N.J.—C,D,E,I,K,L,M,N,V
 Gits Molding Corp., 4600 W. Huron St., Chicago 44, Ill.—A,C,D,E,K,L
 Glastic Corp., 1823 E. 40th St., Cleveland 3, Ohio—G
 Goodrich Chemical Co., B.F., 2060 E. 9 St., Cleveland 15, Ohio—P,Q,V,W
 Hermes Plastics, Inc., 13 University Pl., New York 3, N.Y.—J,G
 Hopp Press, Inc., 460 W. 34th St., New York 1, N.Y.—G
 Houghton Laboratories, 322 Bush St., Olean, N.Y.—G,V,P,X
 Imperial Radar & Wire Corp., 820 E. 233rd St., New York 66, N.Y.—V
 Insulating Fabricators of New England, 69 Grove St., Watertown 72, Mass.—A,C,G,H,I,J,K,L,M,N
 Insulating Tube Co., 26 Cottage St., Poughkeepsie, N.Y.—J,G
 Irvington Varnish & Insulator Co., 6 Argyle Terrace, Irvington 11, N.J.—K
 Jersey Specialty Co., Little Falls, N.J.—K
 Keller Products, 41 Union St., Manchester, N.H.—G
 Kellogg Co., M. W., P.O. Box 469, Jersey City 3, N.J.—N
 Keyoff Products Co., Overton, Nebr.—Q
 Kings Electronics Co., 40 Marbledale Rd., Tuckahoe, N.Y.—N
 Lacquer & Chemical Corp., 214 40th St., Brooklyn 32, N.Y.—A,C,D,E,F,H,L,O,S,U,V
 Long, Inc., Thomas J., 215 Stonehenge Lane, Carle Place, Long Island, N.Y.—A,G,H,J
 Luminous Resins, 166 W. Washington St., Chicago 2, Ill.—A,D,G,K,L,V
 Lunn Laminates, Inc., Huntington Station, N.Y.—G
 Marbon Corp., 1926 W. 10th Ave., Gary, Ind.—V
 MELPAR, INC., 452 Swann Ave., Alexandria, Va.—P
 Merix Chemical Co., 1921 E. 55 St., Chicago 15, Ill.
 Mica Insulator Co., 797 Broadway, Schenectady, N.Y.—G
 Miller Electric Co., P. O. Box 1827, Jacksonville, Fla.—A,C,D,E,F,H,J,K,L,M,N,Q
 Mitchell Rand Companies, 61 Murray St., New York 7, N.Y.—P
 Molding Specialists, 52 Islin St., Yonkers 2, N.Y.—P
 Moore Co., H.J., 266 William St., New York 38, N.Y.—C,D,G,H,J,K,L,M,T,V
 National Gasket & Washer Mfg. Co., 124 E. 25 St., New York 10, N.Y.—C,J,Q
 National Plastic Products, Odenton, Md.—G
 National Vulcanized Fibre Co., Maryland Ave. & Beech St., Wilmington 99, Del.—G
 Neosil Products Div. Rubber Associates, 850 Metropolitan Ave., Brooklyn 11, N.Y.—H,J,S,T,V
 New Hermes Engraving Machine Corp., 13 University Pl., New York 3, N.Y.—A,G,J
 Peerless Products Industries, 812 N. Pulaski Rd., Chicago 51, Ill.
 Penn Fibre & Specialty Co., 2050 E. Westmoreland St., Philadelphia 34, Pa.—G,J
 Plasticraft Products Co., 1 Station Plaza, West Nyack, N.Y.—A,C,G,H,J,K,L
 Plastilt, Inc., 481 Canal St., Stamford, Conn.—G
 Polyken Products, Dept. Kendall Co., 222 W. Adams St., Chicago 6, Ill.—K
 Polymer Corp. of Pa., 126 N. 5th St., Reading, Pa.—M,N,P
 Precision Plastic Products, 225 N. Racine Ave., Chicago 7, Ill.—A,L
 Ramsell Mfg. Co., 420 Market St., San Francisco, Calif.—Q
 Red Seal Electric Co., 6321 Detroit Ave., Cleveland 2, Ohio—J
 Reilly Tar & Chemical Corp., 1615 Merchant Bank Bldg., Indianapolis, Ind.—J
 Resinite Corp., 20351 W. Charleston St., Chicago 47, Ill.—P
 Resistoflex Corp., 39 Planson St., Belleville 9, N.J.—M,N,V
 Rex Corp., Hayward Rd., West Acton, Mass.—L,M,N,P,Q
 Richardson Co., Lockland, Cincinnati 15, Ohio—A,C,E,G,H,J,K,L
 Rogers Corp., Goodyear, Conn.—G,J
 ROMAR PLASTICS INC., 1311 E. Main St., St. Charles, Ill.—A,C,D,H,I,J,K,L,S,V
 Rubbercraft Corp. of Calif., 1800 W. 220th St. Torrance, Calif.—T,W
 St. Regis Paper Co., Panelyte Div., 230 Park Ave., New York, N.Y.—G

Sethco Mfg. Co., 70-78 Willoughby St., Brooklyn 1, N.Y.—P
 Smith Mfg. Co., Nathan R., 105 Pasadena Ave., S. Pasadena, Calif.—P
 Stokes Molded Products, Taylor & Webster Sts., Trenton 4, N.J.—C,D,J,K,L,S,V
 SYNTHANE CORP., Oaks, Pa.—G,H,J
 Taylor Fibre Co., Norristown, Pa.—G,H,J
 Technical Materiel Corp., 700 Fenimore Rd., Mamaroneck, N.Y.—A,J,M
 Technical Tape Corp., 177 St. & Harlem River, Bronx, N.Y.—K
 Technicraft Supply Co., 1156 Commonwealth Ave., Boston 34, Mass.—A,I,P,Q
 Tele-Beam Industries, 6th & Soscol Ave., Napa, Calif.—I,P,Q
 Tele-Plastics Co. Div. Willmax Mfg. Co., 202 Broadway, Brooklyn 11, N.Y.—A,G
 Thompson Clock Co., H. C., 38 Federal St., Bristol, Conn.—A,J,L
 Union Bay State Chemical Co., 491 Main St., Cambridge 42, Mass.—A
 U.S. Gasket Co., 602 N. 10 St., Camden 1, N.J.—M,V
 Universal Aviation Equipment, 362 5th Ave., New York 1, N.Y.—G
 Varflex Corp., 305 N. Jay St., Rome, N.Y.—K
 White Co., S. S., Industrial Div., 10 E. 40th St., New York 16, N.Y.—C,K,V
 Wilmington Fibre Specialty Co., P.O. Drawer 1028, Wilmington 99, Del.—J
 Willson Camera Co., 1401 Lawrence Rd., Havertown, Pa.—A,C,D,G,H,J,Q

65—PLASTIC MOLDERS & FABRICATORS

Fabricators A
Molders, cabinet B
Molders, extruded shapes D
Molders, parts C

Accurate Electronics Corp., 1312 Ontario St., N.W., Cleveland 13, Ohio—A,C
 Ace Plastic Co., 91-30 Van Wyck Expressway, Jamaica 35, N.Y.—A,D
 Acme Scientific Co., 1450 W. Randolph St., Chicago 7, Ill.—C
 Admiral Corp., 3800 Cortland St., Chicago 47, Ill.—A,B
 Advance Electronics Co., 8510 North End Ave., Oak Park 37, Mich.—A,B,C
 Aerolite Electronics, 507 26 St., Union City, N.J.—A,C
 Airtron Inc., 1103 W. Elizabeth Ave., Linden, N.J.—C
 ALDEN PRODUCTS CO., 117 N. Main St., Brockton 64, Mass.—C
 Allied Engraving & Stamping Co., 161 Elliott St., Buffalo 3, N.Y.—A,C
 AMERICAN PHENOLIC CORP., 1830 S. 54 Av., Chicago 50, Ill.—C
 ANCHOR PLASTICS CO., 36-36 36 St., Long Island City, N.Y.—D
 Auburn Button Works, Auburn, N.Y.—C,D
 Auburn Mfg. Co., Pease Ave. & Stack St., Middletown, Conn.—A
 Baer Co. N. S., 1 Montgomery St., Hillside 5, N.J.—A
 Bishop Mfg. Corp., 10 Canfield Rd., Cedar Grove, N.J.—A
 Blazon Mfg., 6021 Dempster St., Morton Grove, Ill.—A,C
 B & M Elec. Co., 838 4th Ave., Brooklyn 32, N.Y.—A,C,D
 Bolta Corp., 70 Garden St., Lawrence, Mass.—B,C
 BRAND & CO., WM., North & Valley Sts., Wilimantic, Conn.—D
 British Electronic Sales Co., 23-03 45th Rd., Long Island City, 1 N.Y.—D
 Calresin Corp., 4543 Brazil St., Los Angeles 39, Calif.—A
 Central Transformer Co., 908 W. Jackson Blvd., Chicago 7, Ill.—A,B,D
 CINCH-MFG. CORP., 1026 S. Homan Ave., Chicago 24, Ill.—A,C
 Cincinnati Molding Co., 2037 Florence Ave., Cincinnati 6, Ohio—C
 Commercial Plastics Co., 2812 W. North Ave., Chicago 47, Ill.—D,C
 Collector Corp., 216 E. 45th St., New York 17, N.Y.—A,C
 Connector Corp., 6025 N. Keystone Ave., Chicago 30, Ill.—A
 Consolidated Molded Products Corp., 309 Cherry St., Scranton 2, Pa.—A,B,C
 Continental Connector Corp., 30-30 Northern Blvd., Long Island City 1, N.Y.—C
 Continental-Diamond Fibre Co., Newark, Del.—A,C
 Cortland Industries, 4545 W. Cortland St., Chicago 39, Ill.—A
 Crane Packing Co., 1800 Cuyler Ave., Chicago 13, Ill.—A,D,C
 Creative Eng'g. Corp., 10816 Burbank Blvd., N. Hollywood, Calif.—A
 Creative Plastics Corp., Rt. 25-A, Stony Brook, N.Y.—A,C
 Dielect Inc., P.O. Box 827, Perth Amboy, N.J.—A
 Dimco-Gray Co., 207 E. 6 St., Dayton 2, Ohio—G
 EBY INC., HUGH H., 4700 Stenton Ave., Philadelphia 44, Pa.—A,C
 Elco Corp., 190 W. Glenwood Ave., Philadelphia 40, Pa.—C

Elcon Mfg. Co., 436 E. Manchester Ave., Los Angeles 3, Calif.—C
 Electro Development Co., 6006 W. Washington Blvd., Culver City, Calif.—C
 ELECTRONIC MECHANICS, INC., 101 Clifton Blvd., Clifton, N.J.—A,C,D
 Elm Laboratories, 18 S. Broadway, Dobbs Ferry, N.Y.—A
 Emeloid Co., 1239 Central Ave., Hillside, N.J.—A,B,D
 EMERSON & CUMING, INC., 869 Washington St., Canton, Mass.—A
 Erie Resistor Corp., 644 W. 12th St., Erie, Pa.—B,C
 Extruders Inc., 3232 W. El Segundo Blvd., Hawthorne, Calif.—D
 Flexrock Co., 3609 Filbert St., Philadelphia 1, Pa.—C,D
 Formica Co., 4614 Spring Grove Ave., Cincinnati 32, Ohio—A,C
 GARDE MFG. CO., 588 Eddy St., Providence 3, R.I.—C
 Garlock Packing Co., Main St., Palmyra, N.Y.—A
 GENERAL ELECTRIC CO., CHEMICAL DIV., 1 Plastics Ave., Pittsfield, Mass.—B,C
 General Products Corp., Union Springs, N.Y.—C
 General Tire & Rubber Co., Industrial Products Div., Wabash, Ind.—A,H,D
 Gering Products, Inc., N. 7 St. & Monroe Ave., Kenilworth, N.J.—D
 Gits Molding Corp., 4600 W. Huron St., Chicago 44, Ill.—C
 Glastic Corp., 1823 E. 40th St., Cleveland 3, Ohio—A,C
 Good, Ind., Don, 1014 Fair Oaks Ave., S. Pasadena, Calif.—D
 GRAYNILL, 561 Hillgrove Ave., La Grange, Ill.—C
 Gries Reproducer Corp., 5 Second St., New Rochelle, N.Y.—C
 Hopp Press, Inc., 460 W. 84 St., New York 1, N.Y.—A,C
 Hydro Molding Co., 100 Sharron Ave., Plattsburg, N.Y.—C
 Industrial Devices, Edgewater, N.J.—C
 Industrial Hardware Mfg. Co., 109 Prince St., New York 12, N.Y.—A
 Insulating Fabricators of New England, 69 Grove St., Watertown 72, Mass.—A,C,D
 Jack Scientific Instrument Co., Bill Box C-4, Solana Beach, Calif.—A,C
 Javex, P.O. Box 646, Redlands, Calif.—C
 Kaywoff Products Co., Overton, Nebr.—A,C,D
 Keller Products, 41 Union St., Manchester, N.H.—A
 Kirchnerberger & Co., M., 1425 37 St., Brooklyn 18, N.Y.—A
 Klise Mfg. Co., 50 Cottage Grove St., S.W., Grand Rapids 2, Mich.—A
 Kurz-Kasch, Inc., 1420 S. Broadway, Dayton 1, Ohio—B,C
 LEE ELECTRONIC LABS., INC., 233 Dudley St., Boston 19, Mass.—A
 Lewis Co., E.R., 11 Bragg St., E. Hartford 8, Conn.—A
 Long Inc., Thomas J., 215 Stonehinge Lane, Carle Place, L.I., N.Y.—A
 Luminous Resins, 166 W. Washington St., Chicago 2, Ill.—A
 Lunn Laminates Inc., Huntington Station, L.I., N.Y.—A
 MALLORY & CO., P. R., 3029 E. Washington St., Indianapolis 6, Ind.—A,B,C,D
 Mandex Mfg. Co., 2608 W. 16 St., Chicago 8, Ill.—A,C
 Mayfair Molded Products Corp., 4440 Elston Ave., Chicago 30, Ill.—C
 Merix Chemical Co., 1021 E. 55 St., Chicago 15, Ill.
 METHODE MFG. CORP., 2021 W. Churchill St., Chicago 47, Ill.—A,C
 Mica Insulator Co., 797 Broadway, Schenectady, N.Y.—A,C
 Midwest Plastic Products, 1801 Chicago Rd., Chicago Heights, Ill.—D
 Millen Mfg. Co., James, 150 Exchange St., Malden, Mass.—C
 Molded Insulation Co., 335 E. Price St., Philadelphia 44, Pa.—A,B,C
 Molded Products Corp., 4533 W. Harrison St., Chicago 24, Ill.—A,B,C
 Molding Corp. of America, 40 Church St., Pawtucket, R.I.—C
 Molding Specialists, Inc., 289 Nepperhan Ave., Yonkers, N.Y.—C
 Moore Co., Howard J., 266 William St., New York, N.Y.—A
 MYCALEX CORP. OF AMERICA, 125 Clifton Blvd., Clifton, N.J.—C
 Naer Corp., 11777 Santa Monica Blvd., W. Los Angeles 25, Calif.—A,C
 National Gasket & Washer Mfg. Co., 124 E. 25 St., New York 10, N.Y.—A
 Neosil Products Div. Rubber Associates, 850 Metropolitan Ave., Brooklyn 11, N.Y.—C
 New Hermes Engraving Machine Corp., 13 University Pl., New York 3, N.Y.—A
 New Products Co., 1071 E. 54 St., Indianapolis, Ind.—A,C
 Nichols Products Co., 325 W. Main St., Moorestown, N.J.—A
 Northern Industrial Chemical Co., 7 Elkins St., South Boston 27, Mass.—C
 Norton Labs., Inc., 520 Mill St., Lockport, N.Y.—C
 Opad-Green Co., 71-24 Warren St., New York 7, N.Y.—B,C,D

Owens-Illinois Glass Co., Madison & St. Clair Sts., Toledo 1, Ohio—C
 Parisian Novelty Co., 3510 S. Western Ave., Chicago 9, Ill.—A
 Peerless Products Industries, 812-14-16 North Pulaski Rd., Chicago 51, Ill.—A
 Penn Fibre & Specialty Co., 2030 E. Westmoreland St., Philadelphia 34, Pa.—A
 Plastic Accessories Inc., 91 Mercer St., New York 12, N.Y.—A
 Plasticite Corp., 327 Rider Ave., New York 51, N.Y.—A,C
 Plasticraft Products Co., 1 Station Plaza, West Nyack, N.Y.—A
 PM Industries, Inc., 280 Fairfield Ave., Stamford, Conn.—C
 Poinsettia Co., 110 Cedar Ave., Pitman 15, N.J.—C
 Polymer Corp. of Penna., 126 N. 5 St., Reading, Pa.—A,C,D
 Precision Associates, 354 Cumberland St., Brooklyn 17, N.Y.—A
 Precision Plastic Products, 225 N. Racine Ave., Chicago 7, Ill.—A,C,D
 PRINTLOID, INC., 93 Mercer St., New York 12, N.Y.—A,D
 Quality Components, Inc., St. Marys, Pa.—C
 Ralston Record Co., 110 Cedar Ave., Pitman 15, N.J.—A
 Red Seal Electric Co., 6321 Detroit Ave., Cleveland 2, Ohio—A
 Remler Co., 2101 Bryant St., San Francisco 10, Calif.—B,C
 Research Instrument Co., 233 Broadway, New York 7, N.Y.—A,B,C
 Rex Corp., Hayward Rd., W. Acton, Mass.—D
 Richardson Co., Lockland, Cincinnati 15, Ohio—A,B,C,D
 Rogan Brothers, 8031 N. Monticello Ave., Skokie, Ill.—C
 ROMAR PLASTICS INC., 1311 E. Main St., St. Charles, Ill.—B,C
 Shaw Insulator Co., 160 Coit St., Irvington 11, N.J.—C
 Sillocks-Miller Co., 10 W. Parker Ave., Maplewood, N.J.—A
 Slate & Associates, C. C., 11370 W. Olympic Blvd., Los Angeles 64, Calif.—A,B,C,D
 Smith Mfg. Co., Nathan R., 105 Pasadena Ave., S. Pasadena, Calif.—C
 Stevens Products, 86 Main St., E. Orange, N.J.—A,C
 Stokes Molded Products, Taylor & Webster Sts., Trenton 4, N.J.—C,D
 SYLVANIA ELECTRIC PRODUCTS, 1740 Broadway, New York 19, N.Y.—C
 SYNTHANE CORP., 11 River Rd., Oaks, Pa.—A
 Taylor Fibre Co., Norristown, Pa.—A
 Technical Materiel Corp., 700 Fenimore Rd., Mamaroneck, N.Y.—A,B
 Tele-Beam Industries, 6th & Soscol Ave., Napa, Calif.—C
 Tele-Plastics Co. Div. Willmax Mfg. Co., 202 Broadway, Brooklyn 11, N.Y.—A,C
 Tselex, Inc., 1633 Eustis St., St. Paul 1, Minn.—D,C
 Ther Electric & Machine Works, 17 S. Jefferson St., Chicago 6, Ill.—A
 Thompson Clock Co., H. C., 38 Federal St., Bristol, Conn.—A,B,D
 Tri-Dex Co., P.O. Box 1207, Lindsay, Calif.—A
 Tri-State Plastics, Inc., 5509 Lincoln Ave., Chicago 26, Ill.—A,C
 Universal Specialty Co., P. O. Box 1892, Boston 5, Mass.—C
 U.S. Gasket Co., 602 N. 10th St., Camden 1, N.J.—A,C,D
 Vari-Equip Co., 35 Grove St., White Plains, N.Y.—A
 Victory Mfg. Co., 1722 W. Arcade Pl., Chicago 12, Ill.—B,C
 WARREN PLASTICS CORP., Warren, Pa.—C
 Washington Institute of Technology Inc., 4810 Calvert Rd., College Park, Md.—C
 White Co., S. S., Industrial Div., 10 E. 40th St., New York 16, N.Y.—C
 Whitco, Inc., 9330 Byron St., Schiller Park, Ill.—C
 Wilmington Fibre Specialty Co., P. O. Drawer 1028, Wilmington 99, Del.—A
 Willson Camera Co., 1401 Lawrence Rd., Havertown, Pa.—A
 Woodall Industries, Inc., 7569 E. McNichols Rd., Detroit 34, Mich.—A

66—POWER SUPPLIES & CONVERTERS

Power supplies, AC A
Power supplies, DC B
Power supplies, mobile F
Power supplies, regulated C
Power supplies, special purpose D
Power supplies, variable frequency E
Choppers G
Converters, AC-DC H
Converters, DC-AC I
Converters, frequency J
Converters, voltage K
Converters, waveform L
Inverters M

Regulators, voltage N
Vibrators O



Aeme Electric Corp., Cuba, N.Y.—A,B,C,D,H,K,N
Aeme Electronics Inc., Sub. Aerovox Corp., 2724 Peck Rd., Monrovia, Calif.—C,D,N
Aeme Teletronix, Div., NEA Service, 1200 W. 3rd St., Cleveland 13, Ohio—A,B,C,D,F
Acorn Electronics Corp., Box 348, Gibson City, Ill.—A,O
Adler Communications Labs., 1 LeFevre Lane, New Rochelle, N.Y.—C
Aeronautical Radio Mfg. Co., 155 1st St., Mineola, N.Y.—B,I,M,O
AEROVOX CORP., 740 Belleville Ave., New Bedford, Mass.—A,B,C,E
Ahrendt Instrument Co., 4910 Calvert Rd., College Park, Md.—C
Air Associates, Teterboro, N.J.—A,B,C,E,J
Airpax Products Co., Middle River, Baltimore 20, Md.—A,B,C,D,E,F,G,H,I,J,K,L,M,N,O
Alco Electronics Mfg. Co., 3 Wolcott Ave., Lawrence, Mass.—B,C,D,N
Allis Co., Louis., 427 E. Stewart St., Milwaukee 4, Wisc.—E
ALTEC LANSING CORP., 9356 Santa Monica Blvd., Beverly Hills, Calif.—B,C,D
American Electric Motors, 4811 Telegraph Rd., Los Angeles 22, Calif.—A,C,D,E,F,J
American Electronic Labs., Inc., 641 Arch St., Philadelphia 6, Pa.—B,C,D
American Measuring Instruments Corp., 21-25 44th Ave., Long Island City 1, N.Y.—A,B,D
AMERICAN TELEVISION & RADIO CO., 300 E. 4th St., St. Paul 1, Minn.—A,R,D,F,G,H,I,M,O
AMPEX CORP., 934 Charter St., Redwood City, Calif.—A
Amplifier Corp. of America, 398 Broadway New York 13, N.Y.—A,N
Anton Electronic Lab's., 1226 T Flushing Ave., Brooklyn 37, N.Y.—C
Applegate & Co., C. J., 1816 Grove St., Boulder, Colo.—B,C,D,N
Applied Electronics Co., 1246 Folsom St., San Francisco 3, Calif.—A,B,F
Approved Electronic Inst. Corp., 928 Broadway, New York 10, N.Y.—A,B
Associated Eng'g Corp., 65 Kent St., Brookline 46, Mass.—B,C,D,N
Assoc. Specialties, 1751 Main St., Orefield, Pa.—C,D
Atomic Instrument Co., 84 Mass. Ave., Cambridge 39, Mass.—B,C,D
Authorized Mfrs. Service, 919 Wyckoff Ave., Brooklyn 27, N.Y.—B,C,D
Auto-Test, Inc., 600 S. Michigan Ave., Chicago 5, Ill.—A,D,O
Avion Instrument Corp., 299 State Hwy #17, Paramus, N.J.—A,B,C,D,E,G,I,J,N
Barker & Williamson, Inc., 237 Fairfield Ave., Upper Darby, Pa.—B,C,D
Bassett Inc., Rex, 1314 NE 17th Court, Ft. Lauderdale, Fla.—A,B,C,D,F
Baugham Co., E. J., 350 S. Central, Los Angeles 13, Calif.—A,B
Belock Instrument Corp., 111-01 14th Ave., College Point 56, N.Y.—D
BENDIX AVIATION CORP., Red Bank Div., Eatontown, N.J.—M,N
Beta Electric Corp., 333 E. 103 St., New York 29, N.Y.—A,B,C,D
Birdsell Mfg. Co., 750 San Antonio Rd., San Antonio, Tex.—A,B
BOGART MFG. CORP., 315 Seigel St., Brooklyn 6, N.Y.—C
Bogue Electric Mfg. Co., 52 Iowa Ave., Paterson 3, N.J.—A,B,C,D,E,F,H,I,J,L,M,N
Bone Eng'g Corp., 701 W. Broadway, Glendale 4, Calif.—B,C,D,H
Booth Co., A. E., E., 265 S. Alexandria Ave., Los Angeles 4, Calif.—A,B,C,F
BRADLEY LABS., INC., 168 Columbus Ave., New Haven, Conn.—H
Bristol Eng'g Corp., Lincoln & Pond Sts., Bristol, Pa.—B,C,D,H,K,N,O
Buck Eng'g Co., 37 Marcy St., Freehold, N.J.—B,C,D
BURROUGHS CORP., ELECTRONIC INSTRUMENTS DIV., 1209 Vine St., Philadelphia 7, Pa.—C,D
Caledonia Electronics & Transformer Corp., P.O. Box 298, Caledonia, N.Y.—B
Carol Electronics Corp., 141 E. 25 St., New York 10, N.Y.—A,B,C,N,O
Chatham Electronics Corp., 630 W. Mt. Pleasant Ave., Livingston, N.J.—B,C,D,N
Clegg Laboratories, Inc., 142 S. Livingston Ave., Livingston, N.J.—A,B,C,D,K,L,N
Colortone Electronics, 235 William St., New York 38, N.Y.—J
Communication Measurements Lab. Inc., 350 Leland Ave., Plainfield, N.J.—C,E
Computer Corp. of America, 149 Church St., New York 7, N.Y.—B,C,D,N
Consolidated Productions, Inc., Building 9, Broward International Airport, Ft. Lauderdale, Fla.—A,B,C,D
Cornell-Dubilier Elec. Corp., 333 Hamilton Blvd., S. Plainfield, N.J.—A,B,C,F,H,I,K,M,O
Davies Labs., Inc., 4705 Queensbury Rd., Riverdale, Md.—D
DeMornay-Bonardi, Inc., 780 S. Arroyo Pkway, Pasadena, Calif.—C,D

Detectolab, Inc., 6544 Sheridan Rd., Chicago 26, Ill.—B
Devtronics, Inc., 221 N. Hermitage Ave., Trenton, N.J.—A,B,C,N
DeWald Radio & TV Corp., 35-15 37th Ave., Long Island City 1, N.Y.—K
Douglas Instrument Lab., 176 Norfolk Ave., Boston 19, Mass.—B,C,N
Dressen-Barnes Corp., 250 N. Vinedo Ave., Pasadena 8, Calif.—A,B,C,D,E,F,H,I,J,K,L,M,N
Dresser Electric Co., 942 E. Larned St., Detroit 7, Mich.—B,C,H
Drive-In-Theater Mfg. Co., 505 W. 9th Kansas City, Mo.—A,B,C,D
Dubrow Development Co., 235 Penn St., Burlington, N.J.—A,B,C,D,E
DUMONT LABS., INC., ALLEN B., INSTRUMENT DIV., 750 Bloomfield Ave., Clifton, N.J.—D
DX Radio Products Co., 2300 Armitage Ave., Chicago 47, Ill.—D,J
Eastern Precision Resistor Corp., 130-11 90th Ave., Richmond Hill 18, N.Y.—C
Eastern Specialty Co., 3627 N. 8th St., Philadelphia 40, Pa.—A
Eastgap Co., 285 Columbus Ave., Boston 16, Mass.—C
Eder Engineering Co., 1568 S. First St., Milwaukee 4, Wisc.—A,B,C,D,N
Ecor, Inc., 1501 W. Congress St., Chicago 7, Ill.—B,C,D,E,F,I,K,M,N
Eldico of N.Y., Inc., 70 E. 2nd St., Mineola, L.I., N.Y.—B,C,D,F,N
Electran Mfg. Co., 1901 Clybourn Ave., Chicago 14, Ill.—B,D
Electric Regulator Corp., Pearl St., Norwalk, Conn.—N
Electric Specialty Co., 211 South St., Stamford, Conn.—E,H,I,J,K,M
ELECTRICAL & PHYSICAL INSTRUMENT CORP., 25 W. 43rd St., New York 36, N.Y.—D,N
Electric Indicator Co., Camp Ave., Springdale, Conn.—A,B,C,D,E,H,I,N
Electro Eng'g Works, 6021 College Ave., Oakland 18, Calif.—A,B,C,D,F,H,N
Electron Enterprises, 6917 W. Stanley Ave., Berwyn, Ill.—C,D
Electronic Heating Corp., 60 Needham St., Newton Highlands 61, Mass.—D
Electronic Instrument Co., 84 Withers St., Brooklyn 11, N.Y.—B
Electronic Measurements Co., Lewis St. & Maple Ave., Eatontown, N.J.—B,C,D,E,H,N
Electronic Rectifiers, Inc., 2102 Spann Ave., Indianapolis 3, Ind.—B
Electronic Research Associates, 715 Main St., N. Caldwell, N.J.—B,C,D
Electronic Research Co., 11550-39 N.E., Seattle 55, Wash.—B,C,D
ELECTRO PRODUCTS LABS., INC., 4501 N. Ravenswood Ave., Chicago, Ill.—B,H
Electro-Tech Equipment Co., 308 Canal St., New York, N.Y.—B,C,D,N
El-Tronics, Inc., 5 & Noble Sts., Philadelphia 23, Pa.—D,E,J,K
Engineering Research & Development Co., Addison, Ill.—A,B,C,D
Espey Mfg. Co., 528 E. 72 St., New York 21, N.Y.—A,B,C,D,E,F,N
Fansteel Metallurgical Corp., 2200 Sheridan Rd., N. Chicago, Ill.—B,C
Federal Electric Corp., 6446 Santa Monica Blvd., Los Angeles 38, Calif.—A,C,D,H
FEDERAL TELEPHONE & RADIO CORP., DIV. I.T. & T., 100 Kingsland Rd., Clifton, N.J.—A,C,H,N
F-R Machine Works, 44-14 Astoria Blvd., Long Island City 3, N.Y.—D
France Mfg. Co., 10325 Berea Rd., Cleveland 2, Ohio—A,B,D
Franklin Electronics Inc., 415 W. Pike St., Philadelphia 40, Pa.—B,C,D,E,J
Furst Electronics, 3322 W. Lawrence Ave., Chicago 25, Ill.—B,C,D,N
Gaertner Radio Co., 3612 Maple Ave., Los Angeles 11, Calif.—A,B,N
GALBRAITH & SON, 450 6 Ave., New York 11, N.Y.—A,B,C,D,E
Galvanic Products Corp., 110 E. Hawthorne Ave., Valley Stream, N.Y.—B
Gates Electric Co., 65 W. Broadway, New York, N.Y.—B,C,D,N
General Communications, One Mile and Janesville Rd., Ft. Atkinson, Wisc.—B,C,H,N
General Devices, Inc., P.O. Box 253, Princeton, N.J.—I
GENERAL ELECTRIC CO., Apparatus Div., 1 River Rd., Schenectady 5, N.Y.—A,B,C,E,H,I,J

GENERAL ELECTRIC CO., GERMANIUM PRODUCTS DIV., Electronics Park, Syracuse, N.Y.—B,C,D
General Electrosonics, Inc., 32 W. 22 St., New York 10, N.Y.—A,B,C,D,E
General Hermetic Sealing Corp., 99 E. Hawthorne, Valley Stream, N.Y.—B,C
GENERAL RADIO CO., 275 Mass. Ave., Cambridge 39, Mass.—A,B,N
Georator Corp., Manassas, Va.—A,B,D,E,F,H,I,J
G & M Equipment Co., 7315 Varna Ave., N. Hollywood, Calif.—A,B,G,H,I,O
Goslin Electric & Mfg. Co., 2921 W. Olive St., Burbank, Calif.—A,B,C
G.W. Associates, P. O. Box 2263, El Segundo, Calif.—C
Hall Inc., F. Sumner, Amityville, N.Y.—B,C
Hamlyn Electronics Corp., 32 Holman Blvd., Hicksville, N.Y.—A,B,C,F
Hanson-Gorrill-Brian, 1 Continental Hill, Glen Cove, N.Y.—N,O
Heath Co., 305 Territorial, Benton Harbor, Mich.—C
Hewlett-Packard Co., 395 Page Mill Rd., Palo Alto, Calif.—B,C
Heyer Products Co., 471 Cortlandt St., Belleville 9, N.J.—B,D
HI-Q DIV., AEROVOX CORP., Olean, N.Y.—B,C
Hufford Machine Works, 2201 Carmelina Ave., Los Angeles 64, Calif.—B,C,D,E,F,H,I,J,N
Industrial Electronics Co., Hanover St., Hanover, Mass.—A,B,C,D,N
Industrial Rectifier Co., 161 Washington St., New York 6, N.Y.—B
Inet Div., Leach Corp., 4441 S. Santa Fe Ave., Los Angeles 58, Calif.—B,C,D,F,H,N
Instrument Development Labs., 163 Highland Ave., Needham Heights 94, Mass.—H,I
INT'L. RESEARCH ASSOCIATES, 2221 Warwick Ave., Santa Monica, Calif.—C,D,E
Jack & Heintz, Inc., 17600 Broadway, Cleveland 1, Ohio—N
Jack Scientific Instrument Co., Bill, Box C-4, Solana Beach, Calif.—A,B,C,H,J
Jarrell-Ash Co., 165 Newbury St., Boston 16, Mass.—D
Jobbins Electronic Enterprises, 500 Hamilton Ave., Menlo Park, Calif.—B,C,D,E
JOHNSON CO., E. F., Waseca, Minn.—F
Kaar Eng'g Corp., 2995 Middlefield Rd., Palo Alto, Calif.—F
Kalbfell Labs., Inc., 1090 Marena Blvd., San Diego 20, Calif.—B,C,D,I,N
Kearfott Co., 1378 Main Ave., Clifton, N.J.—J
Keithley Instruments, 3868 Carnegie Ave., Cleveland 15, Ohio—B,C,G,H
Kepco Labs., 131-38 Sanford Ave., Flushing 55, N.Y.—A,B,C,D,F,H,K,N
Kinevox, Inc., 116 N. Hollywood Way, Burbank, Calif.—A
Kings Electronics Co., 40 Marbledale Rd., Tuckahoe, N.Y.—E,J
Kirby Products Corp., 175 5th Ave., New York 10, N.Y.—A,B,H,I
Kocour Co., 4800 S. St. Louis Ave., Chicago 32, Ill.—B
Korb Eng'g & Mfg. Co., 30 Ottawa Ave., Grandville, Mich.—D,N
Krohn-Hite Instrument Co., 580 Mass. Ave., Cambridge 39, Mass.—C
Kupfrian Mfg. Co., 367 State St., Binghamton, N.Y.—F
Kurman Electric Co., 35-18 37th St., Long Island City 1, N.Y.—O
Lab. for Electronics, Inc., 75 Pitta St., Boston, Mass.—B,D
Lambda Electronics Corp., 103-02 Northern Blvd., Corona 68, N.Y.—A,B,C,D,H,N
LANGEVIN MFG. CORP., 37 W. 65th St., New York, N.Y.—A,C,D
Lawn Electronics Co., E. Freehold Rd., Freehold, N.J.—B,C,D,H,I,N
LEE ELECTRONIC LABS., 233 Dudley St., Boston 19, Mass.—A,B
Leland Electric Co., P.O. Box 1060, Dayton, Ohio—A,B,C,D,H,I,M
Link Aviation, Inc., Binghamton, N.Y.—C,N
L & O Research & Devel. Corp., 134 N. Wayne Ave., Wayne, Pa.—D
Magnetic Amplifiers, Inc., 632 Tinton Ave., New York 55, N.Y.—A,B,C,D,F,H,I,J,K,N
Magnetic Instrument Co., 82 Main St., W. Orange, N.J.—A,B,C,D,F,H,I,J,K,N
Magnetic Research Corp., 318 Kansas St., El Segundo, Calif.—A,B,C,E,I,J,N
Magnetics Research Co., 142 King St., Chappaqua, N.Y.—B,C,N
Magnex Corp., 90-28 Van Wyck Expressway, Jamaica 18, N.Y.—A,B,C,D
MALLORY & CO., P.R., 3029 E. Washington St., Indianapolis 6, Ind.—B,C,D
Manson Labs., 207 Greenwich Ave., Stamford, Conn.—A,B,C,D
Maryland Electronic Mfg. Corp., 5009 Calvert Rd., College Park, Md.—C,D
Mattson-Cowley Corp., 1487 Lincoln Ave., Pasadena 3, Calif.—A,B,C
Maxson Corp., W.L., 460 W. 34th St., New York 1, N.Y.—M,N
McColpin-Christie Corp., 3410 W. 67 St., Los Angeles 43, Calif.—B,C,F,H
Menlo Research Lab., P. O. Box 522, Menlo Park, Calif.—D
Mercury Electronic Co., Box 450, Red Bank, N.J.—A,B,C,D,E
Mercury Mfg. Corp., 45 Brown St., Buffalo 11, N.Y.—B,C,D

Meyer & Co., Hugo, 39 W. 60th St., New York 23, N.Y.—R,D,H
 Millen Mfg. Co., James, 150 Exchange St., Malden, Mass.—C
 Miller Instruments, Inc., Wm., 325 No. Halstead Ave., Pasadena 8, Calif.—A,B,C,D,F,N
 Miller Co., Sanford, 691 Bedford Ave., Brooklyn 6, N.Y.—B
 MILLIVAC INSTRUMENT CORP., 444 2nd St., Schenectady, N.Y.—B,C,G,I
 Minneapolis-Honeywell Regulator Co., Minneapolis 8, Minn.—G
 Mission-Western Engineers Inc., 132 W. Colo. St., Pasadena 1, Calif.—H,I,J,K,M
 Model Rectifier Corp., 557 Rogers Ave., Brooklyn 25, N.Y.—B,C,D,H
 Mohawk Business Machines Corp., 944 Halsey St., Brooklyn 37, N.Y.—B,D,E,F,I,J,K,O
 Mohawk Electronic Research Labs., RD 4 Box 126A, Amsterdam, N.Y.—B,C
 Motorvye Inc., 2661 S. Myrtle Ave., Monrovia, Calif.—A,B,C,D,F,H,I,M
 Moulie Specialties Co., 1005 W. Washington St., Bloomington, Ill.—C,D,N
 Multi-Amp, 121 Cross, Harrison, N.J.—A,B,D
 Multi-Products Co., 559 E. Ten Mile Rd., Hazel Park, Mich.—A,B
 Munston Mfg. & Service Inc., Beech St., Islip, N.Y.—A,B,C,D,O
 Natural Lighting Corp., 612 W. Elk Ave., Glendale 4, Calif.—A,I,N
 Nestor Eng'g. Co., 24 Chestnut St., Rutherford, N.J.—B
 Neutronic Associates, 87-16 116th St. Richmond Hill, N.Y.—A,B,C,D,E,F
 Non-Linear Systems, Del Mar Airport, Del Mar, Calif.—K
 Nuclear Research Corp., 2563 Grays Ferry Ave., Philadelphia 46, Pa.—C
 Nucleonic Co. of America, 497 Union St., Brooklyn 31, N.Y.—B,C,D
 Oak Mfg. Co., 1260 Clybourn Ave., Chicago 10, Ill.—D,G,M,O
 Oregon Electronic Mfg. Co., 2232 E. Burnside St., Portland 15, Ore.—B,C,N
 Otis Elevator Co., 35 Ryerson St., Brooklyn 5, N.Y.—A,B,D
 Owen Labs., 412 Woodward Blvd., Pasadena 10, Calif.—C
 Pacific Mercury TV Mfg. Corp., 5955 Van Nuys Blvd., Van Nuys, Calif.—A,B,C,F,N
 Peerless Electrical Products, Div. Altec Lansing Corp., 9356 Santa Monica Blvd., Beverly Hills, Calif.—B,D
 Perkin Eng'g. Corp., 345 Kansas St., El Segundo, Calif.—B,C,D,H,N
 Perma-Power Co., 4727 N. Damen Ave., Chicago 25, Ill.—B,D,H,N
 Peschel Electronics Inc., 13 Garden St., New Rochelle, N.Y.—A,B,C,D,N
 Philbrick Researches Inc., Geo. A., 230 Congress St., Boston 10, Mass.—B,C,D
 Phoenix Precision Instr. Co., 3803 N. 5th St., Philadelphia 40, Pa.—A,B,C,D,G,H,N
 Plastic Capacitors, Inc., 2511 W. Moffat St., Chicago 47, Ill.—A,B,C,D,E,N
 Plymouth Electronics Corp., 50 Kingsbury St., Worcester, Mass.—A,B
 POLARAD ELECTRONICS CORP., 100 Metropolitan Ave., Brooklyn 11, N.Y.—B,C,D
 POLYTECHNIC RESEARCH & DEVELOPMENT CO., 202 Tillary St., Brooklyn 1, N.Y.—B,C,D,N
 Power Designs Inc., 119-22 Atlantic Ave., Richmond Hill, New York 19, N.Y.—B,C,D,H,N
 Power Transformer Co., 532 Hulberry St., Newark 5, N.J.—A,B,C,D,E,F,H,K,N
 Precise Measurements Co., 942 Kings Hwy., Brooklyn 23, N.Y.—D,H,I,K,N,O
 Precision Associates, 354 Cumberland St., Brooklyn 17, N.Y.—A,B
 Press Wireless Laboratories, Inc., 25 Prospect Pl., W. Newton 65, Mass.—B
 Process & Instruments, 15 Stone Ave., Brooklyn 33, N.Y.—C,D
 Radiophone Co., 600 E. Evergreen Ave., Monrovia, Calif.—D
 Radio Sonic Corp., 111 Bleeker St., New York 12, N.Y.—A,B,C,D,E
 Rapid Electric Co., 2881 Middletown Rd., New York 61, N.Y.—B,C,F,H,N
 RAYTHEON MFG. CO., 100 River St. Waltham 54, Mass.—B,H,N
 Redmond Co., Owosso, Mich.—H,I,M
 Regulator Eng'g. & Devel. Co., 11545 W. Jefferson Blvd., Culver City, Calif.—B,C,D
 Resdel Eng'r., 2351 Riverside Dr., Los Angeles 39, Calif.—C,D
 Research Electronics Labs., Roslyn, Pa.—B,D
 Rich Electronics Inc., 212 N.W. 9 Ave., Miami 36, Fla.—B,C,D
 Rutishauser Corp., 490 S. Fair Oaks Ave., Pasadena 1, Calif.—B
 Sanders Associates, 137 Canal St., Nashua, N.H.—D,G
 Schauer Mfg. Corp., 4500 Alpine Ave., Cincinnati 36, Ohio—B,C,D,H
 Scientific Associates, 550 Virginia Ave., N.E., Atlanta, Ga.—B,D,N
 Scientific Specialties Corp., Snow & Union St., Brighton 35, Mass.—B,C
 Sealtron Co., 9701 Reading Rd., Cincinnati 15, Ohio—B,D
 Selectar Industries, Inc., 3100 Ocean Parkway, Brooklyn 35, N.Y.—A,B,C
 Servo Corp. of America, 2020 Jericho Tpke., New Hyde Park, L.I., N.Y.—D,K
 Servomechanisms, Inc., 500 Franklin Ave., Garden City, N.Y.—B

Sierra Electronic Corp., 1050 Brittan Ave., San Carlos, Calif.—D
 Signal Equipment Co., 2706 3rd Ave., Seattle 1, Wash.—D,E
 Silver Bay Equip. Co., 5004 20th N.W., Seattle 7, Wash.—B,F
 Sonar Radio Corp., 3050 W. 21st St., Brooklyn 24, N.Y.—A,B,F,O
 Sorenson & Co., 875 Fairfield Ave., Stamford, Conn.—A,B,C,D,E,H,I,J,K,M,N
 Specialized Instruments Corp., Belmont, Calif.—C,D
 Spellman Television Co., 3029 Webster Ave., Bronx 67, N.Y.—B,C,D
 Spera Electronics Labs., 37-10 33 St., Long Island City, N.Y.—A,B,C,D,F
 Square Root Mfg. Corp., 391 Saw Mill River Rd., Yonkers 2, N.Y.—A,B,C
 Standard Electrical Products Co., 2240 E. 3rd St., Dayton 3, Ohio—A,N
 STANDARD ELECTRONICS CORP., 285 Emmet St., Newark 5, N.J.—A,B,C,D,N
 Standard Electronics Research Corp., 2 E. End Ave., N.Y. 21, N.Y.—C
 Sticht Co., Herman H., 27 Park Pl., New York 7, N.Y.—B
 Stromberg-Carlson Co., 100 Carlson Rd., Rochester 3, N.Y.—B
 Superior Electric Co., 83 Laurel St., Bristol, Conn.—A,B,N
 Technical Apparatus Builders, 109 Liberty St., New York 6, N.Y.—B,C,D,F,H,N
 Technical Products Co., 19 N. Dunlap, Memphis 1, Tenn.—A,B,N
 TECHN INSTRUMENT CO., 6666 Lexington Ave., Los Angeles 38, Calif.—C
 TELECHROME INC., 88 Merrick Rd., Amityville, L.I., N.Y.—C,D
 Teletronic Lab., 54 Kinkel St., Westbury, L.I., N.Y.—B,C,D
 TEL-INSTRUMENT CO., 728 Garden St., Carlstadt, N.J.—B,C,D
 Terado Co., 1068 Raymond Ave., St. Paul 14, Minn.—I
 Ther Electric & Machine Works, 17 S. Jefferson St., Chicago 6, Ill.—R,H
 Thompson Products Inc., 2196 Clarkwood Rd., Cleveland 3, Ohio—D
 Times Facsimile Corp., 540 W. 58th St., New York 19, N.Y.—C
 Transformer Technicians Inc., 2608 N. Cicero Ave., Chicago 39, Ill.—A,B,C,D,F,H,I,K
 Transmitter Equipment Mfg. Co., 85 Ryerson St., Brooklyn 5, N.Y.—A,B,D
 Triumph Mfg. Co., 913 W. Van Buren, Chicago 7, Ill.—C
 U.M. & F. MFG. CORP., 10929 Van Owen St., N. Hollywood, Calif.—D
 Universal Electronics Co., 2012 S. Sepulveda Blvd., Los Angeles 25, Calif.—B,C,N
 Universal Scientific Co., 1102 Shelby St., Vincennes, Ind.—B,G,H
 U.S. Motors Corp., 420 Nebraska St., Oshkosh, Wisc.—F
 U. S. Recording Co., 1121 Vermont Ave., N.W., Washington 5, D.C.—A,D,E
 Varo Mfg. Co., 1801 Walnut St., Garland, Tex.—A,B,C,D,E,F,H,I,J,K,M,N
 VECTRON INC., 409 Main St., Waltham 54, Mass.—A,B,D,J,N
 Vickers Electric Div., Vickers Inc., 1835 Locust St., St. Louis 3, Mo.—B,C,N
 VICTOREEN INSTRUMENT CO., 3800 Perkins Ave., Cleveland 12, Ohio—B,C,D,O
 Vokar Corp., Huron River Dr., Dexter, Mich.—A,B,G,N
 Waveforms, Inc., 333 6th Ave., New York 14, N.Y.—D,E,G
 Welch Electric Co., 1221 Wade St., Cincinnati 14, Ohio—A,B,C,D
 Weymouth Instrument Co., 1440 Commercial St. E. Weymouth 89, Mass.—C
 WICKES ENG'G. & CONST. CO., 12 St. & Ferry Ave., Camden, N.J.—C,D
 Wilkor Div., Aerovox Corp., 2882 Detroit Ave., Cleveland 13, Ohio—B,C
 Winchager Corp., E. 7th & Division Sts., Sioux City 2, Iowa—A,B,F,H,I

Furnaces, electric O
 Glass blowing & working machines. P
 Hermetic sealing machines AN
 Impregnating machines Q
 Lathes, bench R
 Magnetizers S
 Manufacturing facilities T
 Marking & numbering machines .. U
 Metal forming machines V
 Molding presses W
 Ovens, temperature controlled ... AF
 Oxy-acetylene X
 Powdered metal presses Y
 Printed circuit equipment AO
 Punch presses Z
 Quartz cutting machines AA
 Riveting machines AB
 Shock testing machines AC
 Soldering machines AD
 Transistor production machines .. AP
 Vacuum tube machines AG
 Wire insulating machines AH
 Wire stripping machines AI
 X-ray pattern markers AJ
 Vacuum pumps AK
 Weighing machines AQ
 Welders AE

Acme Electric Heating Co., 1217 Washington St., Boston 18, Mass.—A,F
 Acme Oxygen Co., 119 S. 4 St., Harrison, N.J.—X
 Acme Wire Machine Co., 234 E. 3rd St., New York 7, N.Y.—AI
 Acromark Co., 601 Morrell St., Elizabeth 4, N.J.—U,Z
 Aero Electronics Co., 1512 N. Wells St., Chicago 10, Ill.—K,T,AQ
 AeroProjects, Inc., W. Chester, Pa.—AD
 Air-Mite, 4417 E.W. Carroll Ave., Chicago 24, Ill.—Z
 Allied Allegri Machine Co., 141 River Rd., Nutley 10, N.J.—T
 Allied Engraving & Stamping Co., 161 Ellicott St., Buffalo 3, N.J.—M
 American Photocopy Equip., 2849 N. Clark St., Chicago, Ill.—A
 ANDREW CORP., 363 E. 75th St., Chicago 19, Ill.—AM
 Annis, Co., R.B., 1101 N. Delaware St., Indianapolis 2, Ind.—K,S,T,A,L
 Art-Lloyd Metal Products Corp., 2973 Crowssey Ave., Brooklyn 14, N.Y.
 ARTOS ENG'G. CO., 2757 28 St., Milwaukee 46, Wisc.—V,AI
 Associated Eng'g & Mfg. Corp., Glen Ridge, N.J.—P,A,E,A,G,A,K
 Associated Production Co., 162 N. Clinton St., Chicago 6, Ill.—C
 Authorized Mfrs. Service Co., 919 Wyckoff Ave., Brooklyn 27, N.Y.—T
 Automatic Temperature Control Co., 5212 Pulaski Ave., Philadelphia 44, Pa.—AQ
 Bassett, Inc., Rex, 1314 N. E. 17 Court, Fort Lauderdale, Fla.—J,F,G,H,I
 Balsa Electronics Corp., J.A., 1031 S. 27 St., Omaha, Neb.—D
 Beach-Russ Co., 544 Union Ave., Brooklyn 11, N.Y.—AK
 Benchmaster Mfg. Co., 1835 W. Rosecrans Ave., Gardena, Calif.—Z
 Bennett Mfg. Co., Alden, N.Y.—T,Z
 Berkeley Div., Beckman Instruments, Inc., 2200 Wright Ave., Richmond 3, Calif.—D
 Birdsall Mfg. Co., 750 San Antonio Rd., San Antonio, Tex.—AE
 Black & Decker, Towson 4, Md.—B,L,AQ
 Black & Webster, Inc., 445 Watertown St., Newton 58, Mass.—U,V,Y,Z,AB
 B & M Elec. Co., 838 4th Ave., Brooklyn 32, N.Y.—T,W,A,H,AI
 Boesch Mfg. Co., Danbury, Conn.—C,D
 Brinkmann Instruments Inc., 378 Great Neck Rd., Great Neck, L.I., N.Y.—AP
 British Industries Corp., 164 Duane St., New York, N.Y.—C
 Bruning Co., Charles, 4700 Montrose Ave., Chicago 41, Ill.—A
 Buck Engineering Co., 37 Marcy St., Freehold, N.J.—T
 Central Eng'g Corp., 560 Providence Highway, Norwood, Mass.—T
 Central Scientific Co., 1700 Irving Park Rd., Chicago 13, Ill.—AK
 Cincinnati Sub-Zero Products, Reading Rd. at Paddock, Cincinnati 29, Ohio—AR
 Clark Crystal Co., 2 Farm Rd., Marlboro, Mass.—G,H
 Cleco Div., Reed Roller Bit Co., 5125 Clinton Ave., Houston 20, Texas.—B,AB
 CLIPPARD INSTRUMENT LAB. INC., 7350 Colerain Rd., Cincinnati 24, Ohio—T
 Cole Radio Works, 86 Westville Ave., Caldwell, N.J.—AD
 CONSOLIDATED VACUUM CORP., 735 Ridge Rd., W. Rochester 3, N.Y.—J,AK
 CONSTANTIN & CO., L. L., Rt. 46, Lodi, N.J.—J
 Contact, Inc., 238 Main St., Cambridge 42, Mass.—AD

67—PRODUCTION MACHINERY & EQUIPMENT

Abrasive Cutting Machines AS
 Balancing machines AL
 Blueprint machines A
 Buffers & Grinders B
 Coil Winding machines C
 Counting machines D
 Crystal embedding equipment E
 Crystal etching equipment F
 Crystal grinders G
 Crystal ovens H
 Crystal polishing equipment I
 Crystal production equipment J
 Dehydrators AM
 Demagnetizers K
 Drill presses L
 Engraving machines M
 Environment Chambers AR
 Vibration control equipment N

Corry-Jamestown Mfg. Corp., 44 N. Center St., Curry, Pa.—T
 Coxa Corp., 405 Lexington Ave., New York 17, N.Y.—C
 Counter & Control Corp., 5225 W. Electric Ave., Milwaukee 14, Wis.—D
 Cox & Co., 115 E. 23rd St., New York 10, N.Y.—H
 Crane Packing Co., 1800 Cuyler Ave., Chicago 13, Ill.—J
 Curran Machine Works, 20-20 Steinway St., Long Island City, N.Y.—T,U
 Delaware Optical Labs., 36 Williams St., Lansdowne, Pa.—E,F,G,I,AA
 Demco Products, P.O. Box 5042, Philadelphia 11, Pa.—D
 DoAll Co., 254 N. Laurel Ave., Des Plaines, Ill.—G,L,R
 Downing Crystal Co., 921 E. Fort Ave., Baltimore 30, Md.—H
 Dumore Co., 1300 17 St., Racine, Wis.—B
 DuPont de Nemours & Co., E. 1, 10th & Market Sts., Wilmington, Del.—AO
 Eisler Eng'g Co., 770 S. 13 St., Newark 3, N.J.—O,P,AE,AG
 Electro-Technics, Inc., 198 Albion Ave., Paterson, N.J.—T
 El-Tronics, Inc., 437 N. 5th St., Philadelphia 23, Pa.—T
 Eng'g Developments, 32 W. Pelham St., Newport, R.I.—S
 Entwistle Co., James L., 1475 Elmwood Ave., Providence 7, R.I.—U,AG,AL,AK
 Eraser Co., Rush Wire Stripper Div., 1068 S. Clinton St., Syracuse 4, N.Y.—U,AL,AO
 Federal Tool Engineering Co., 1384 Pompton Ave., Cedar Grove, N.J.—AE
 Feiler Eng'g & Mfg. Co., 8026 N. Monticello Ave., Skokie, Ill.—T
 Flader, Inc., Fredric, 583 Division St., N. Tonawanda, N.Y.—T
 F & M Sales, Inc., 1054 Cahuenga Blvd., Hollywood 38, Calif.—J,AA
 Foredom Electric Co., 27 Park Place, New York 7, N.Y.—I
 Forter-Teichmann Co., 1210 Clark Bldg., Pittsburgh 22, Pa.—O,P,AF
 GABRIEL ELECTRONICS DIV., GABRIEL CO., Endicott St., Norwood Mass.—T
 Gasket Eng'g. Co., 2444 Charlotte St., Kansas City 8, Mo.—V
 GENERAL ELECTRIC CO., APPARATUS DIV., 1 River Rd., Schenectady 5, N.Y.—N,O,S
 General Riveters Inc., Elmwood & Hertel, Buffalo 7, N.Y.—AB
 Gilmore Industries, Inc., 5713 Euclid Ave., Cleveland 3, Ohio—AQ
 Gleason-Avery, Inc., 45 Aurelius Ave., Auburn, N.Y.—T
 Gombos Co., John, 103 Montgomery Ave., Irvington, N.J.—T
 Gorrell & Gorrell, Haworth, N.J.—T
 Green Instrument Co., 385 Putman Ave., Cambridge 39, Mass.—M
 Greenleaf Mfg. Co., 7814 Maplewood Ind. Ct., St. Louis 17, Mo.—AL
 Grieve-Hendry Co., 1815 W. Lake St., Chicago 12, Ill.—O,AF
 Gulton Mfg. Corp., 212 Durham Ave., Metuchen, N.J.—AC
 Gundlach Mfg. Co., 38 E. Main St., Fairport, N.Y.—AO
 Haydu Bros., Box 1226, Plainfield, N.J.—P,AK
 Henry Valve Co., 3215 North Ave., Melrose Park, Ill.—AM
 Hercules' Elec. Mach'y & Equip. Co., 1442 E. Washington Blvd., Los Angeles 21, Calif.—AE
 Hevi Duty Electric Co., 4212 W. Highland Blvd., Milwaukee 1, Wis.—O
 High Speed Hammer Co., 305 Norton St., Rochester, N.Y.—L,AB,AI
 Hinde & Dauch, Sandusky, Ohio
 Hofman Needle Works, 535 59 St., W. New York, N.J.—V
 HOUSTON FEARLESS CORP., 11801 W. Olympic Blvd., Los Angeles 64, Calif.—T
 Hunt Corp., 453 Lincoln St., Carlisle, Pa.—H
 Huppert, Co., K.H., 6830 Cottage Grove Ave., Chicago 37, Ill.—O,AF,AO
 Hydraulic Press Mfg. Co., Marion Rd., Mount Gilead, Ohio—V,W,Y
 Ideal Industries, 3316 Park Ave., Sycamore, Ill.—K,M,AD
 Impact-O-Graph Corp., 1900 Euclid Bldg., Cleveland 15, Ohio—AC
 Imperial Radar & Wire Corp., 820 E. 233rd St., New York 66, N.Y.—AH,AI
 Independent Mfg. Co., 5 Bellevue Ave., E. Riverton, N.J.—T,AI
 Industrial Electronic Eng'rs., 3973 Lankershim Blvd., N. Hollywood, Calif.—U,AQ
 Industrial Electronics Co., Hanover, Mass.—D
 Infra Electronic Corp., Roseland, N.J.—T,Z
 Int'l. Pump & Machine Works, 11 Governor St., Newark 2, N.J.—Q,AE,AK
 Int'l Radiant Corp., 40 Matinecock Ave., Port Washington, N.Y.
 KAHLE ENG'G CO., 1807 Seventh St., North Bergen, N.J.—P,AE,AG,AK
 Kinney Mfg. Div. N.Y. Air Brake Co., 3529 Washington St., Boston 30, Mass.—AK
 Krengel Mfg. Co., 227 Fulton St., New York 7, N.Y.—V
 Lavole Laboratories, Inc., Morganville, N.J.—AF
 Leiman Bros., 146 Christie St., Newark 5, N.J.—B,I,U,AK

ELECTRONIC INDUSTRIES DIRECTORY

Lenox Instrument Co., 2010 Chancellor St., Phila., Pa.
 Lepel High Frequency Laboratories, Inc., 54-18 37 Ave., Woodside 77, Long Island, N.Y.—AD
 Lewis Co., E.B., 11 Bragg St., E. Hartford 8, Conn.—J,AF
 Linde Air Products Co., Div. Union Carbide & Carbon, 30 E. 42 St., New York 17, N.Y.—X,AE
 Littell Machine Co., F.J., 4127 Ravenswood Carlos, Calif.—O,P,Z,AE,AK
 L & O Research & Devel. Corp., 134 N. Wayne Ave., Wayne, Pa.—H
 Lovins Engineering Corp., 8203 Cedar St., Sil-Ave., Chicago 13, Ill.—G,Z
 Luffkin Rule Co., 1730 Hess St., Saginaw, Mich.—K
 Luma Electric Equipment Co., 1112 Derr St., Toledo 6, Ohio—K,U,AD
 Mackenzie Products Co., 141 Brewery St., New Haven 11, Conn.—T
 Magnaflux Corp., 7300 W. Lawrence Ave., Chicago 31, Ill.—K,S
 Mandex Mfg. Co., 2608 W. 16th St., Chicago 8, Ill.—T
 Marion Electrical Instrument Co., 401 Canal St., Manchester, N.H.—Q,AD
 Markem Machine Co., 150 Congress St., Keene, N.H.—U
 Mars Electronics Corp., 3000 N. San Fernando Blvd., Burbank, Calif.—T
 Masco Products Co., 2119 S. Sepulveda Blvd., Los Angeles 25, Calif.—U
 Master Appliance Mfg. Co., Fourth & Ontario Sts., Racine, Wis.—B,T
 May Eng'g. Co., 6055 Lankershim Blvd., North Hollywood, Calif.—U
 MB Mfg. Co., 1060 State St., New Haven 11, Conn.—N
 MCCOY ELECTRONICS CO., Watt & Chestnut Sts., Mount Holly Springs, Pa.—H
 MENDELSONN SPEEDGUN CO., 4th Ave., Haskell, N.J.—T
 METHODE MFG. CORP., 2021 W. Churchill St., Chicago 47, Ill.—T,W,Z,AO
 MICO INSTRUMENT CO., 80 Trowbridge St., Cambridge 38, Mass.—C,M
 Milford Rivet & Machine Co., Milford, Conn.—AB
 Miskella Infra-Red Co., E. 73rd & Grand Ave., Cleveland 4, Ohio—AF
 Monitor Products Co., 815 Fremont Ave., S. Pasadena, Calif.—AF
 Multi-Tron Lab., 4624 Washington Blvd., Chicago 44, Ill.—P,T,AG
 National Gasket & Washer Co., 124 E. 25th St., New York 10, N.Y.—J
 National Research Corp., 160 Charlemont St., Newton Highlands 61, Mass.—AC,AK
 Neator Eng'g. Co., 24 Chestnut St., Rutherford, N.J.—T
 New Hermes Engraving Machine Corp., 13 University Place, New York 3, N.Y.—L,M,U
 Oilpower Eng'g Co., 1067 Davis Terrace, Schenectady 3, N.Y.—L,V,W,Y
 O'Neil-Irwin Mfg. Co., 300 Eighth Ave., Lake City, Minn.—V,Z
 Opad-Green Co., 71 Warren St., New York 7, N.Y.—K,S
 Optical Film Engineering Co., 2731 N. 6th St., Philadelphia 33, Pa.—AK
 Pacific Scientific Co., 25 Stillman St., San Francisco 7, Calif.—O
 Pantek Co., Box 212, El Segundo, Calif.—D
 Paragon-Revolute Corp., 77 South Ave., Rochester 4, N.Y.—A
 Parts Producing Corp., Manhattan Div., 1861 Second Ave., New York 28, N.Y.—T
 Pease Co., C. F., 2601 W. Irving Park Rd., Chicago 18, Ill.—A
 Pereny Equip Co., 893 Chambers Rd., Columbus 12, Ohio—O,AF
 Peschel Electronics, 13 Garden St., New Rochelle, N.Y.—T
 Petroff, Peter A., 127 Water St., New York 5, N.Y.—C
 Phila. Scientific Glass Co., Abington, Pa.—AE,AFP
 Phoenix Precision Instrument Co., 3803 N. Fifth St., Philadelphia 40, Pa.—P
 Photobell Co., 116 Nassau St., New York 38, N.Y.—D
 Photoswitch Inc., 77 Broadway, Cambridge 42, Mass.—D
 Pittsburgh Lectrodryer Corp., P.O. Box 1766, Pittsburgh 30, Pa.—AM
 Poinsettia Co., 110 Cedar Ave., Pitman 15, N.J.—W
 Popper & Sons, 300 Fourth Ave., New York 10, N.Y.—U
 Portable Electric Tools, Inc., 200 W. 83 St., Chicago 20, Ill.—B,T
 Precise Measurements Co., 942 King Highway, Brooklyn 23, N.Y.—U
 Precision Products, 719 7 St., N.W., Washington, D.C.—I,T

Preis Engraving Machine Co., H.P., 270 Industrial Dr., Hillside, N.J.—M
 Premier Research Labs., 79 7th Ave., New York 11, N.Y.—H
 Production Tool and Fixture Co., 37 W. Main St., Oyster Bay, N.Y.
 Protectoseal Co., 1920 S. Western Ave., Chicago 8, Ill.
 Radio Frequency Labs., Boonton, N.J.—S
 Rason Mfg. Co., 3050 W. 21 St., Brooklyn 24, N.Y.—K
 RAYTHEON MFG. CO., 100 River St., Waltham 54, Mass.—S
 Remco Mfg. Co., 545 N. LaSalle St., Chicago 10, Ill.—T
 Rex Rheostat Co., 3 Foxhurst Rd., Baldwin, L.I., N.Y.—C
 Richardson Labs. Kenneth, 254 Vincent Ave., Lynbrook, N.Y.—K,S
 ROBINSON AVIATION, INC., Teterboro, N.J.—N
 Robinson, Inc., Edward E., 95 Park Ave., Nutley 10, N.J.
 ROMAR PLASTICS INC., 1311 E. Main St., St. Charles, Ill.—W
 Rotron Mfg. Co., Schoonmaker Lane, Woodstock, N.Y.—B
 Rowe Industries, 1702 Wayne St., Toledo 9, Ohio—K,T
 Schmidt, Inc., Geo. T., 1804 Belle Plaine Ave., Chicago 13, Ill.—U
 Scientific Electric Div., "S" Corrugated Quenched Cap Co., 107 Monroe St., Garfield, N.J.—O
 Scientific Radio Products, Inc., 215 S. 11th St., Omaha 8, Nebr.—G,H,I,J
 South Bend Lathe Works, South Bend 22, Ind.—L,R
 Soundsciber Corp., 146 Munson St., New Haven 4, Conn.—K
 Stanat Tool & Machine Co., 47-28 37 St., Long Island City 1, N.Y.—T,V
 Standard Cabinet Co., 56 Washington Ave., Carlstadt, N.J.—AR
 Standard Crystal Co., 1714 Locust St., Kansas City 8, Mo.—H
 Sta-Warm Electric Co., 553 N. Chestnut St., Ravenna Ohio—AD
 Steiner-Ives Co., 483 Springfield Rd., Union, N.J.—O,P,AF,AK
 Sterling Instruments Co., 15310 W. McNichols, Detroit 35, Mich.—N,AC
 Stevens Mfg. Co., George, 6022 N. Roxers Ave., Chicago 30, Ill.—C,AE
 Stewart Eng'g Co., Box 145, Soquel, Calif.—AG
 Stokes Machine Co., F.J., 5500 Tabor Rd., Philadelphia 20, Pa.—Q,T,V,W,Y,AK,AM,AO
 Sunrise Products Co., P. O. Box 173, Hawthorne, N.J.—A,C,U,AD,AE
 Taylorel Corp., 3-33 Rutter St., Rochester 6, N.Y.—K,L,Z
 Technic, Inc., 39 Snow St., Providence 3, R.I.—AF
 Technical Products Co., 19 N. Dunlap, Medical Center, Memphis 1, Tenn.—O,P,R,W,AK,AQ
 Techniraft Supply Co., 1156 Commonwealth Ave., Boston 34, Mass.—M
 Teletronics Laboratory, 54 Kinkel St., Westbury, Long Island, N.Y.—H,J
 Tenney Engineering Inc., 1090 Springfield Rd., Union, N.J.—AF
 Tensitron, Inc., Pin Hill, Harvard, Mass.—AF
 Thermo Elec. Mfg. Co., 465 Huff, Dubuque, Iowa—O
 Thompson Clock Co., H.C., 38 Federal St., Bristol, Conn.—A,L,R,AE
 Thor Transformer & Electronics, 750 San Antonio Rd., Palo Alto, Calif.—AE
 Torit Mfg. Co., 292 Walnut St., St. Paul 2, Minn.—AD
 TRANSISTOR PRODUCTS INC., Snow & Union Sts., Boston 35, Mass.—AP
 Tri-Dex Co., P. O. Box 1207, Lindsay, Calif.—T
 Ultra Electroforming & Mfg. Co., 110 Cedar Ave., Pitman 15, N.J.—T
 U. M. & F. MFG. CORP., 10929 Van Owen St., N. Hollywood, Calif.—C,L,R,V,Z,AB,AE
 Unitek Corp., 275 N. Halstead Ave., Pasadena 8, Calif.—AE,AG,AP
 U.S. Testing Co., 1550 Park Ave., Hoboken, N.J.—T
 Vacuum-Electronic Eng'g Co., 86 Denton Ave., New Hyde Park, L.I., N.Y.
 Vacuum Tube Products, 506 S. Cleveland St., Oceanside, Calif.—AE,AK
 Valpey Crystal Corp., 1244 Highland St., Holliston, Mass.—H,AF
 VECTRON, INC., 400 Main St., Waltham 54, Mass.—T
 Veeder-Root Inc., 70 Sargeant St., Hartford 2, Conn.—D
 Vemaline Products Co., P.O. Box 222, Hawthorne, N.J.—K,T,X,AD,AE,AI
 Vibroscope Co., 6 E. 39 St., New York 16, N.Y.—AF,N
 Wabash Metal Products Co., Box 305 Wabash, Ind.—T,V,W
 Waldorf Instrument Corp., Park Ave., Huntington, N.Y.—T
 Walker Electric Co., R., 132 Nassau St., New York 7, N.Y.—T
 WARREN PLASTICS CORP., Warren, Pa.—T,W
 Wasserlein Mfg. Co., 126 W. Cass St., Joliet, Ill.—AD
 Welch Electric Co., 1221 Wade St., Cincinnati 14, Ohio—AC

WELCH MFG. CO., W.M., 1515 Sedgwick Ave., Chicago 10, Ill.—AK
 Weldex Inc., 2200 W. Fort St., Detroit 16, Mich.—AD,AE
 West Coast Electronics Co., 5878 W. Jefferson Blvd., Los Angeles 16, Calif.—AF
 Westinghouse Electric Co., 2519 Wilkens Ave., Baltimore 3, Md.—AL
 Weymouth Instrument Co., 1440 Commercial St., East Weymouth 89, Mass.—C
 WHITE & SON, JAMES L., 374 Verona Ave., Newark 4, N.J.—T
 White Co., S.S., Industrial Div., 10 E. 40th St., New York 16, N.Y.—AS
 Whittington Pump & Engineering Corp., 1126 Prospect St., Indianapolis 3, Ind.—AK
 Wiedemann Machine Co., 4272 Wissahickon Ave., Philadelphia 32, Pa.—Z,AO
 Windsor, 999 N. Main St., Glen Ellyn, Ill.—P
 Wire Stripper Co., 1725 Eastham Ave., East Cleveland 12, Ohio—AI
 Woodruff & Stokes, 349 Lincoln St., Hingham, Mass.
 Wright Electronics, 1519 McGee St., Kansas City 5, Mo.—H
 Wright Eng'g. Co., 180 E. California St., Pasadena 1, Calif.—D
 WYBAR ELECTRONICS, INC., P.O. Box 534 Syracuse, N.Y.—AI
 Wyzenbeek & Staff, 223 N. California Ave., Chicago 12, Ill.—B

68—RADAR DEVICES

Aircraft landing control	A
Altimeters	B
Antennas	C
Indicators, moving target	L
Indicators, plan position	D
Indicators, proximity	E
Marine navigation	F
Oscilloscopes	G
Radar	H
Radomes	M
Receivers	I
Repeaters	J
Transmitters	K

Abel Mfg. Co., 32-20 37th Ave., Long Island City 1, N.Y.—C
 Aeronautical Radio Mfg. Co., 155 First St., Mineola, N.Y.—B,H,I,K
 Airborne Instruments Labs., 160 Old Country Rd., Mineola, L.I., N.Y.—D,H,I,L
 Aircraft Armaments, Inc., 4415 Reisterstown Rd., Baltimore 15, Md.—D,E,G,I,J,K,L
 AIRTRON INC., 1103 W. Elizabeth Ave., Linden, N.J.—C
 Allied Intl. Inc., 230 Park Ave., New York 17, N.Y.—I,J,K
 Allied Research & Eng'g., 1041 N. Las Palmas Ave., Hollywood 38, Calif.—C
 American Machine & Foundry Co., 1085 Commonwealth Ave., Boston, Mass.—B,H,I,L
 American Radio Co., 445 Park Ave., New York 22, N.Y.—A,B,C,D,E,F,G,H,I,J,K,L
 ANDREW CORP., 363 E. 75 St., Chicago 19, Ill.—C
 Ansel Electronic, Inc., 85 Tremont St., Meriden, Conn.—A,C,D,H,I,K
 Antenna Specialists Co., 12435 Euclid Ave., Cleveland 6, Ohio—C
 Atlas Precision Products Co., 3801 Castor Ave., Philadelphia 24, Pa.—C,D,E,F,H,L
 Austin Co., 76 Ninth Ave., New York 11, N.Y.—D,E,G,J,L
 Avion Instrument Corp., 299 State Highway 17, Paramus, N.J.—H
 Barlow Electrical Mfg. Co., 155 E. 128th St., New York 35, N.Y.—C
 Beam Instruments Corp., 360 5th Ave., New York 1, N.Y.—A,C,D,F,G,H,I,K
 BENDIX RADIO DIV., BENDIX AVIATION CORP., E. Joppa Rd., Towson 4, Md.—A,C,D,I,K
 BENDIX AVIATION CORP., PACIFIC DIV., 11600 Sherman Way North Hollywood, Calif.—I,K
 Bone Eng'g Corp., 701 W. Broadway, Glendale 4, Calif.—C
 Bowen & Co., 4712 Bethesda Ave., Bethesda, Md.—E
 Brooks & Perkins, 1950 W. Fort St., Detroit 16, Mich.—C
 Browning Labs., Inc., 750 Main St., Winchester, Mass.—G
 Brubaker Mfg. Co., 9151 Exposition Dr., Los Angeles 34, Calif.—H
 Budd-Stanley Co., 43-01 22nd St., Long Island City 1, N.Y.—C
 Canoga Corp., 6955 Sepulveda Blvd., Van Nuys, Calif.—C,D,H,I,K
 Capehart-Farnsworth Co., Div. I.T.&T. Fort Wayne, Ind.—H
 Century Electronics, 14844 Oxnard St., Van Nuys, Calif.—C,L
 Color Television Inc., 973 E. San Carlos Ave., San Carlos, Calif.—D,H,I,K
 Conn Marine Instrument Co., Essex, Conn.—F
 Cubic Corp., 2841 Canon St., San Diego 6, Calif.—H,I
 Custom Electronics Corp., 738 Speedwell Ave., Morris Plains, N.J.
 Dalmo Victor Co., 1414 ElCamino Real, San Carlos, Calif.—C

DeWald Radio & TV Corp., 35-15 37th Ave., Long Island City 1, N.Y.—I
 Dormitzer Electric & Mfg. Co., 5 Hadley St., Cambridge 40, Mass.—K
 Eldico of N.Y., Inc., 70-72 E. 2nd St., Mineola, L.I., N.Y.—A,F,K
 Electronic Control Systems, 2138 Westwood Blvd., Los Angeles 25, Calif.—A,B,D,E,G,H,I,J,K,L
 Electron-Radar Products, 1041 N. Pulaski Rd., Chicago, Ill.—C
 Electrotech Corp., 15601 Arrow Hwy., Azusa, Calif.—B,G,I
 Elk Electronic Labs. Inc., 333 W. 52nd St., New York 19, N.Y.—I
 Elm Laboratories, 18 S. Broadway, Dobbs Ferry, N.Y.—C
 El-Tronics, Inc., 437 N. 5th St., Philadelphia 23, Pa.—G,I,J,K
 Emerson Electric Mfg. Co., 8100 Florissant Ave., St. Louis 21, Mo.—G,I
 Eng'g Assoc., 434 Patterson, Dayton 9, Ohio—K
 Espey Mfg. Co., 528 E. 72 St., New York 21, N.Y.—H,I,J,K
 Franklin Electronics Inc., 415 W. Pike St., Philadelphia 40, Pa.—G
 GABRIEL ELECTRONICS DIV., Gabriel Co., Endicott St., Norwood, Mass.—C
 GENERAL COMMUNICATION CO., 681 Beacon St., Boston 15, Mass.—H,K
 General Electronics, Inc., 32 W. 22 St., New York 10, N.Y.—C
 G. & M. Equipment Co., 7315 Varna Ave., N. Hollywood, Calif.—H,I,K,L
 Greenleaf Mfg. Co., 7814 Maplewood Ind. St., St. Louis 17, Mo.—B
 Haller, Raymond & Brown, Inc., 124 N. Atherton St., State College, Pa.—D,H,J
 Hastings Instrument Co., Hampton, Va.—D,E,F,I
 Hazeltine Electronics Corp., 58-25 Little Neck Pkwy., Little Neck 62, N.Y.—R,C,D,H,I,J,I
 Hycon Mfg. Co., 2961 E. Colorado St., Pasadena 8, Calif.—G
 Insuline Corp. of America, 186 Granite St., Manchester, N.H.—C
 Johnson Labs., Div. of Aladdin Industries, Willard Rd., Norwalk, Conn.—I
 Kaiser Metal Products, Inc., Bristol, Pa.—C
 Kane Electronics Corp., 81 Willoughby St., Brooklyn 1, N.Y.—H,I,K
 Kearfott Co., 1878 Main Ave., Clifton, N.J.—J
 Kennedy & Co., D. S., 432 S. Main St., Cohasset, Mass.—C
 Kinetix Instruments Co., 902 Broadway, New York 10, N.Y.—I,J,K
 Kings Electronics Co., 40 Marbledale Rd., Tuckahoe, N.Y.—C,G,H,I,K
 Korb Eng'g. & Mfg. Co., 30 Ottawa Ave., Grandville, Mich.—H,I
 Lab for Electronics, 75 Pitts St., Boston, Mass.—A,D,E,G,I,J,K,L
 Lane Electronics Co., 7254 Atoll Ave., N. Hollywood, Calif.—B
 Lieco, Inc., 147 Ocean Ave., Lynbrook, N.Y.—C
 Loral Electronics Corp., 794 E. 140 St., New York 54, N.Y.—I
 Lunn Laminates Inc., Huntington Station, L.I., N.Y.—M
 MAGNAVOX CO., Fort Wayne 4, Ind.—H
 Magnex Corp., 90-28 Van Wyck Expressway, Jamaica 18, N.Y.—A,E,I
 Makepeace Co., D. E., Attleboro, Mass.—H
 Manson Labs., 207 Greenwich Ave., Stamford, Conn.—K
 Maryland Electronic Mfg. Corp., 5009 Calvert Rd., College Park, Md.—C,H
 Maxson Corp., W. L., 460 W. 34th St., New York 1, N.Y.—A,C,H,I,K,L
 MELPAR, INC., 452 Swann Ave., Alexandria, Va.—B,C,H,I,L
 Molded Insulation Co., 856 E. Price St., Philadelphia 44, Pa.—C,H,I,J,K
 Moloney Electric Co., 5390 Bircher Blvd., St. Louis 20, Mo.—H,I,K
 National Electrical Machine Shops, 919 Jesup Blair Dr., Silver Spring, Md.—D
 Olympic Radio & TV Inc., 34-01 38th Ave., Long Island City 1, N.Y.—I,K
 Otis Elevator Co., 35 Ryerson St., Brooklyn 5, N.Y.—D,H,I,J,K,L
 Pacific Mercury TV Mfg. Corp., 5955 Van Nuys Blvd., Van Nuys, Calif.—D,H,I,L
 Petroff, Peter A., 127 Water St., New York 5, N.Y.—A,C
 Plymouth Electronics Corp., 50 Kingsbury St., Worcester, Mass.—A
 Radio City Products Co., 101 W. 31st St., New York 1, N.Y.—G
 RAYTHEON MFG. CO., Waltham 54, Mass.—F,H
 Resdel Eng'g., 2351 Riverside Dr., Los Angeles 39, Calif.—A,H,I,K,L
 Roach Co., D. J., 2200 S. Figueroa St., Los Angeles 7, Calif.—C
 Rowe Industries, 1702 Wayne St., Toledo 9, Ohio—C,F
 Ryan Industries, 19159 John R. St., Detroit 3, Mich.—H,J
 Sanders Associates, 137 Canal St., Nashua, N.H.—R,C,H
 Scientific Associates, 580 Virginia Ave., N.E., Atlanta, Ga.—C
 Servomechanisms, Inc., 500 Franklin Ave., Garden City, N.Y.—R
 Sperry Gyroscope Corp., Great Neck, N.Y.—F,H
 Stavid Eng'g Inc., 312 Park Ave., Plainfield, N.J.—H

Syntronic Instruments, Inc., 100 Industrial Rd., Addison, Ill.—G
 TECHNICAL APPLIANCE CORP., 1 Taco St., Sherburne, N.Y.—C
 Telephonics Corp., Park Ave., Huntington, N.Y.—J
 Telescreen Corp., 36 Grove St., New Canaan, Conn.—G,I,J,K
 TEXAS INSTRUMENTS INC., 6000 Lemmon Ave., Dallas 9, Tex.—C,D,G,H,I,J,K
 Thompson Products, Inc., 2196 Clarkwood Rd., Cleveland 3, Ohio—C
 Transmitter Equipment Mfg. Co., 35 Ryerson St., Brooklyn 5, N.Y.—D,H,I,J,K,L
 Union Spring Mfg. Co., 105 Summit Ave., Jersey City 7, N.J.—H,I,K
 VECTRON, INC., 400 Main St., Waltham 54, Mass.—A,B,D,G,H,J
 WAVELINE INC., Passaic Ave., Caldwell, N.J.—C
 WESTINGHOUSE ELECTRIC CORP., 2519 Wilkens Ave., Baltimore 3, Md.—H
 White Industries, 421 W. 54 St., New York 19, N.Y.—C,K
 Wilcox Electric Co., 1400 Chestnut St., Kansas City 27, Mo.—A
 Z & W Machine Products, 5100 St. Clair Ave., Cleveland 3, Ohio—U

69—RECEIVERS, COMMUNICATION

Converters, FM	O
Converters, UHF-TV	P
Preselectors	Q
Receivers, amateur	A
Receivers, AM communication	B
Receivers, aviation fixed	C
Receivers, aviation mobile	D
Receivers, battery portable	E
Receivers, civil defense	S
Receivers, diversity	R
Receivers, fixed frequency	F
Receivers, FM communication	G
Receivers, marine	H
Receivers, police	I
Receivers, railroad	J
Receivers, remote pickup fixed	K
Receivers, remote pickup, mobile	L
Receivers, TV	T
Receivers, UHF	M
Receivers, VHF	N

Aeronautical Communications Equip., 3090 Douglas Rd., Miami 33, Fla.—D
 Aeronautical Electronics, P.O. Box 6043 Raleigh, N.C.—C,D,E
 Aeronautical Radio Mfg. Co., 155 1 St., Mineola, L.I., N.Y.—B,C,D,E,F,G,H,M,N,P,R,S
 Air Associates, Teterboro, N.J.—A,B,D,E,F,G,H,M,N,Q
 AIRCRAFT RADIO CORP., P. O. Box 150, Boonton, N.J.—D,M
 Airtronix Devel. Corp., 20 W. 22 St., New York 10, N.Y.—E
 Alliance Mfg. Co., Lake Park Blvd., Alliance, Ohio—P
 Allied Int'l. Inc., 230 Park Ave., New York 17, N.Y.—A,B,C,D,E,F,G,H,I,J,K,L,S
 American Communications Corp., 806 Broadway, New York 7 N.Y.—B
 American Electroengineering Corp., 2040 Colorado Ave., Santa Monica, Calif.—B,C,D,F,I,J
 American Radio Co., 445 Park Ave., New York 22, N.Y.—B,R
 Andrea Radio Corp., 27-01 Bridge Plaza N., Long Island City 1, N.Y.—E,M,N
 Ansel Electronics, Inc. 85 Tremont, St., Meriden, Conn.—D
 Applied Electronics Co., 1246 Folsom St., San Francisco 3, Calif.—H
 Approved Electronic Instrument Corp., 928 Broadway, New York 10, N.Y.—O,P
 Arvin Industries, Inc., Columbus, Ind.—E,M,N
 Audio Products Corp., 2265 Westwood Blvd., Los Angeles 64, Calif.—B,D,F,G,M,N
 Aurex Corp., 1117 N. Franklin St., Chicago 10, Ill.—I
 Avia Products Co., 7268 Beverly Blvd., Los Angeles 36, Calif.—R,G,I
 Avionex Electronics Corp., 2838 N. Naomi St., Burbank, Calif.—B,C,D,F,G,H
 Race Television Corp., Green & Leuning St., S. Hackensack, N.J.—M,N
 Barker & Williamson, 237 Fairfield Ave., Upper Darby, Pa.—F,R
 Bassett Inc., Rex, 1315 N.E. 17 Court, Ft. Lauderdale, Fla.—A,B,C,D,F,H,I,J,Q,S
 Bendix Aviation Corp., Pacific Div., 11600 Sherman Way North Hollywood, Calif.—H
 BENDIX RADIO DIV., BENDIX AVIATION CORP., E. Joppa Rd., Towson 4, Md.—B,C,D,E,F,G,H,I,J,S
 Berger Communications, 109-01 72 Rd., Forest Hills, L.I., N.Y.—B,D,G
 Bogen Co., David, 29 Ninth Ave., New York 14, N.Y.—P
 Brelo Electronics Corp., 55 Vandam St., New York 13, N.Y.—B
 Budelman Radio Corp., 876 Fairfield Ave., Stamford, Conn.—B,E,F,G,E,L,M,N

ELECTRONIC INDUSTRIES DIRECTORY

Calbeat Eng'g. & Electronics Co., 828 N. Highland Ave., Hollywood 38, Calif.—E,P,T
 Cardwell Electronics Productions, Allen D., Plainville, Conn.—P
 Central Electronics Inc., 1247 W. Belmont Ave., Chicago 13, Ill.—A
 Certified Radio Labs., 5507 13th Ave., Brooklyn 19, N.Y.—T
 COLLINS RADIO CO., 855 33rd St., N.E., Cedar Rapids, Iowa.—A,B,C,D,M,N
 Communications Co., P.O. Box 6250 Coral Gables, Fla.—B,C,D,E,F,G,H,I,J,K,M,N,S
 Communication Devices Co., 2331 12 Ave., New York 27, N.Y.—B,C,D,E,G,H,I,N
 Conn Marine Instrument Co., Essex, Conn.—E,G,H,I,S
 Conn. Telephone & Electric Corp., 70 Britannia St., Meriden, Conn.—F,G,H,I,J,K,L,S,T
 Conrac, Inc., 19217 E. Foothill Blvd., Glendora, Calif.—T
 Coronet Radio & TV Corp., 1451 E. 27 St., Brooklyn 10, N.Y.—E
 CROSBY LABS., INC., Box 233, Robbins Lane, Hicksville, L.I., N.Y.—B,G,R
 Crown Eng'g., 3821 Commercial N.E., Albuquerque, N.M.—M,N
 Dayton Aviation Radio & Equip. Corp., RR 3, Troy, Ohio—D
 DeWald Radio United Scientific Lab., Inc., 35-15 37th Ave., L.I.C. 1, N.Y.—E,F,H,M,N,O,P,Q,S,T
 Dollar Co., Robert, Communications Equipment Div., 50 Drumm St., San Francisco, Calif.—A,H,F,R
 DUMONT LABS., INC., Allen B., TV Transmitter Dept., Mobile Comm. Dept., 1500 Main St., Clifton, N.J.—G,I,L,M,N,S
 Eckstein Radio & TV Co., 3400 E. 42nd St., Minneapolis 6, Minn.—B,D
 Eldico of N.Y., Inc., 70-72 E. 2nd St., Mineola, L.I., N.Y.—A,B,C,D,F,H,S
 Electromatic Mfg. Corp., 88 University Pl., New York 3, N.Y.—E
 Electron Enterprises, 6917 W. Stanley Ave., Berwyn, Ill.—F,T
 Electro-Sound Corp., 115 Halleck St., Boston Mass.—G,I,S
 Electrotechnic Corp., 15601 Arrow Hwy., Azusa, Calif.—R,F,G,M,N
 Electro-Voice, Inc., Cecil and Carroll Sts., Buchanan, Mich.—A,B,P,Q
 Elm Labs., 18 S. Broadway, Dobbs Ferry, N.Y.—P
 El-Tronics, Inc., 437 N. 5th St., Philadelphia 23, Pa.—B,G,S
 Eng'g. Associates, 434 Patterson Rd., Dayton 9, Ohio—D,M,N
 Erco Radio Laboratories, 637 Stewart Ave., Garden City, N.Y.—B,C,F,G,H,M,N,R
 Enev Mfg. Co. 528 E. 72nd St., New York 21, N.Y.—B,C,D,F,G,H,I,J,K,L,M,N,R,S
 Esquire Radio Corp., 6201 15 Ave., Brooklyn 19, N.Y.—E
 Fada Radio & Electric Co., 525 Main St., Belleville, N.J.—E,M,N
 FEDERAL TELEPHONE & RADIO CORP., Div. I.T.&T., 100 Kingsland Rd., Clifton, N.J.—J,N
 Feller Eng'g. & Mfg. Co., 8025 N. Monticello Ave., Skokie, Ill.—B,G,I,J,O,P
 Fisher Research Lab., Inc., 1961 University Ave., Palo Alto, Calif.—H
 Freed Electronics & Controls Corp., 200 Hudson St., New York 13, N.Y.—A,B,C,D,F,G,H,I,O,P,Q
 Garod Radio Corp., 70 Washington St., Brooklyn 1, N.Y.—B,F
 GENERAL ELECTRIC CO., Electronics Div., Syracuse, N.Y.—E,F,G,H,I,J,K,L,N,S
 General Instrument Corp., 829 Newark Ave., Elizabeth 3, N.J.—P
 GENERAL PRECISION LAB. INC. 63 Bedford Rd. Pleasantville N.Y.—T
 G & M Equipment Co., 7315 Varna Ave., N. Hollywood Calif.—R,C,D,F,H,M,N
 Conset Co., 801 S. Main St., Burbank, Calif.—A,B,C,D,F,N,O,P
 Gray Radio Co., 501 Forest Hill Blvd., W. Palm Beach, Fla.—H
 Hallcrafters Co., 4401 W. 5 Ave., Chicago 24, Ill.—A,B,E,G,J,M,N,F
 Hamlyn Electronics Corp., 32 Holman Blvd., Hicksville, N.Y.—B,C,D,F,G,H
 HAMMARLUND MFG. CO. 460 W. 34 St., New York 1 N.Y.—A,B,R
 Harmon Electronics Co., 11431 Truman Rd., Independence, Mo.—G,J,K,L
 Harvey Radio Labs., 447 Concord Ave., Cambridge 38, Mass.—C,D
 Harvey-Wells Electronics, Southbridge, Mass.—C,D
 Heath Co., 805 Territorial, Benton Harbor, Mich.—A
 Hudson American Corp., 25 W. 43 St., New York, N.Y.—H
 IDEA Inc., Regency Div., 7900 Pendleton Pike, Indianapolis 26, Ind.—P
 Industrial Radio Corp., 428 N. Parkside Ave., Chicago 44, Ill.—E,F,G,I,J,N,S
 Industrial Television Inc., 369 Lexington Ave., Clifton, N.J.—P
 Int'l. Research Corp., 2221 Warwick Ave., Santa Monica, Calif.—F,P
 Jarvis Electronics Corp., 6058 Fullerton Ave., Chicago 39, Ill.—C,D
 Jefferson Ray, 40 E. Merrick Rd., Freeport, N.Y.—H
 Jerrold Electronics Corp., 26th & Dickinson Sts., Philadelphia 46, Pa.—P

Johnson Laboratories, Div. of Aladdin Industries, Inc., Norwalk, Conn.—M,N,O,P
 Kaar Eng'g. Corp., 2995 Middlefield Rd., Palo Alto, Calif.—B,C,D,F,G,H,I,M,N,S
 Kalbfell Labs., 1090 Morena Blvd., San Diego 10 Calif.—T
 Kane Electronics Corp., 81 Willoughby St., Brooklyn 1, N.Y.—C,F,G,M,N,T
 Kaye-Halbert Corp., 3623 Eastham Drive, Culver City, Calif.—M,N,P
 Kingston Products Corp., 1412 N. Webster St., Kokomo, Ind.—Q
 Lane Electronics Co., 7254 Atoll Ave., N. Hollywood, Calif.—D
 Lavoie Labs., Inc., Morganville, N.J.—M,N,Q
 Lear, Inc., 11916 W. Pico Blvd., Los Angeles 64, Calif.—B,C,D,E,N
 Leonard Electric Products Co., 67 34 St., Brooklyn 32, N.Y.—M
 Link Radio Corp., 125 W. 17th St., New York 11, N.Y.—F,G,H,I,J,K,L,M,N,S
 Lyaco Mfg. Co., 1401 Clinton St., Hoboken, N.J.—F,H,I
 Mackay Radio & Telegraph Co., 345 Hudson St., New York 14, N.Y.—H
 McLaughlin, J.L.A., La Jolla, Calif.—O,P
 MAGNAVOX CO., Fort Wayne 4, Ind.—D, G,M,N,P
 Magnex Corp., 90-28 Van Wyck Expressway, Jamaica 18, N.Y.—C,I
 MALLORY & CO., P. R., 3029 E. Washington St., Indianapolis, Ind.—P
 Marconi's Wireless Telegraph Co., 23 Beaver St., New York 4, N.Y.—B
 Mattison TV & Radio Corp., 10 W. 181 St., New York 53, N.Y.—M
 Mattison-Cowley Corp., 1487 Lincoln Ave., Pasadena 3, Calif.—B,F
 Mercury Mfg. Corp., 45 Brown St., Buffalo 11, N.Y.—B,F
 Miles Reproducer Co., 812 Broadway, New York 3, N.Y.—I,K,L
 Mitchell Industries, Inc., Mineral Wells, Texas C,D,N,S
 Morrow Radio Mfg. Co., 2794 Market St., Salem Ore.—A
 Motorola, Inc., Communications & Electronics Div., 4645 Augusta Blvd., Chicago 51, Ill.—J,S
 Multi-Products Co., 559 E. Ten Mile Rd., Hazel Park, Mich.—A
 Munston Mfg. & Service, Inc., Beech St., Islip, N.Y.—C,F,H
 National Aeronautical Corp., 180 S. Main St., Ambler, Pa.—B,C,D
 NATIONAL CO., 61 Sherman St., Malden 48, Mass.—A,B,C,F,R,S
 National Electrical Machine Shops, 919 Jesup Blair Dr., Silver Springs, Md.—R,F,M,T
 North Electric Mfg. Co., S. Market St., Galion, Ohio—E,I
 Northern Radio Co., 143 W. 22nd St., New York 11, N.Y.—B,R
 Pacific Mercury TV Mfg. Corp., 5955 Van Nuys Blvd., Van Nuys, Calif.—B,C,D,E,F,G,H,I,J,M,N,R,S,T
 Pearce-Simpson, Inc., 3023 Coral Way, Miami 34, Fla.—H
 Peters Co., O. S., 1353 N.Y. Ave., N.E., Washington 2, D.C.—B,F,G,M,N
 Pilot Radio Corp., 37-06 36 St., Long Island City 1, N.Y.—O,P
 Plastics & Electronics Corp., 272 Northland Ave., Buffalo 8, N.Y.—E
 POLARAD ELECTRONICS CORP., 100 Metropolitan Ave., Brooklyn, N.Y.—B,G,M,N
 Pratt, Albert, 1939 N. 18 St., Milwaukee 5, Wis.—I
 Press Wireless Labs., Inc., 25 Prospect Pl., W. Newton 65, Mass.—F,R
 Radio Apparatus Corp., 55 N. New Jersey St., Indianapolis, Ind.—B,F,G,I,J,M,S
 RADIO CORP. OF AMERICA, RCA VICTOR DIV. ENG'G. PRODUCTS DIV., Camden 2, N.J.—B,C,D,F,G,I,J,K,L,M,N,O,P,Q,R,T
 RADIO ENG'G. LABS., 36-40 37 St., Long Island City 1, N.Y.—F,G,K,L
 Radio Kits Inc., 120 Cedar St., New York 6, N.Y.—A,B,O
 RADIO RECEPTOR CO. 251 W 19th St., New York 11 N.Y.—P
 Radio & TV Inc., Brunswick Div., 119 W. 57 St., New York 19, N.Y.—M,N
 Railway Communications Inc., Raytown, Mo.—J,N
 RAYTHEON MFG. CO. Waltham 54, Mass.—E,H
 Remco Mfg. Co., 545 N. La Salle St., Chicago 10, Ill.—B
 Remler Co., 2101 Bryant St., San Francisco 10, Calif.—D
 Rex Electronics Corp., 1351 E. De Loss St., Indianapolis, Ind.—I,O,P
 Revnolia Radio & Equip. Lab., H.B., 219 Stone St., Oneida, N.Y.—G,I
 Rich Electronics, Inc., 212 N.W. 8 Ave., Miami 36, Fla.—H

Scantlin Electronics, J.R., 145 W. Hazel St., Los Angeles 24, Calif.—B,E,F,N
 Schutter Mfg. Co., Carl W., 80 E. Montauk Highway, Lindenhurst, N.Y.—C
 Schuttig & Co., 9th & Kearny Sts., N.E., Washington 17, D.C.—C,N
 Servo Corp. of America, 20-20 Jericho Turnpike, New Hyde Park, N.Y.—O
 Silver Bay Equip. Co., 5004 20th NW Seattle, 7, Wash.—H,K
 Slate & Assoc., Claude C., 11370 W. Olympic Blvd., Los Angeles 64, Calif.—F,G,H,I,J,S
 Smith-Meeker Eng'g Co., 157 Chambers St., New York 7, N.Y.—J
 Sonar Radio Corp., 3050 W. 21 St., Brooklyn 24, N.Y.—A,B,C,D,E,G,H,S
 Sparton Radio-TV 2400 E. Ganson St., Jackson, Mich.—D,E,M,N,P
 Spencer-Kennedy Labs., 186 Mass. Ave., Cambridge 39, Mass.—P
 Spera Electronics Lab., 37-10 33 St., Long Island City, N.Y.—A,B,C,D,F,G,K,L,M,N
 STANDARD ELECTRONICS CORP. 285 Emmet St., Newark 6, N.J.—H
 Stelma, Inc., 389 Ludlow St., Stamford, Conn.—B,F
 Stewart-Warner Electric, 1300 N. Kostner Ave., Chicago 51, Ill.—S
 S & W Electronics, 3418 N. Pico Blvd., Los Angeles 19, Calif.—A,B,F
 SYLVANIA ELECTRIC PRODUCTS, 1740 Broadway, New York 19, N.Y.—B,G,T
 Technical Materiel Corp., 700 Fenimore Rd., Mamaroneck, N.Y.—A,B,C,F,G,R
 Tele-Broadcasters Inc., 158 E. 56th St., New York, N.Y.—A,B,C,D,F,G,K,L,R,S
 Telechrome Mfg. Corp., 88 Merrick Rd., Amityville, N.Y.—T
 Telemarine Communications Co., 3040 W. 21 St., Brooklyn 24, N.Y.—B,C,D,F,G,H,I,M,N
 Telephonics Corp., Park Ave., Huntington, N.Y.—R,G,M,N
 Trad Television Corp., 1001 First Ave., Asbury Park, N.J.—R
 Union Spring & Mfg. Co., 1057 Summit Ave., Jersey City 7, N.J.—C,D,F,H
 VECTRON, INC., 400 Main St., Waltham 54, Mass.—M
 Video Products Corp., 42 West St., Red Bank, N.J.—M,N,P
 Videon Electronic Corp., 902 E. Michigan St., Indianapolis 2, Ind.—D
 West Coast Electronics Co., 5873 W. Jefferson Blvd., Los Angeles 16, Calif.—E,F,G,I,J,K,L,N
 Western Mfg. Co., 1400 W. 22nd St., Kearney, Nebr.—A,B,E,F,G,I,O,P
 Westrex Corp., 111 E. Ave., New York 11, N.Y.—B,C,F
 White & Sons, Inc., Wilfred O., 178 Atlantic Ave., Boston 10, Mass.—H
 Wilcox Electric Co., 1400 Chestnut St., Kansas City 1, Mo.—B,C,D,F,N,R
 Wunderlich Radio Co., 2-5th Ave., New York 11, N.Y.—F,G,H,I,J,K,L,M

70—RECEIVERS, HOME

- Converters, FM N
- Converters, UHF-TV O
- Preselectors P
- Receivers, AM A
- Receivers, AM-FM B
- Receivers, automobile C
- Receivers, battery portable D
- Receivers, coin operated E
- Receivers, color TV R
- Receivers, construction kits F
- Receivers, FM G
- Receivers, phono-radio comb. H
- Receivers, recorder-radio comb. ... I
- Receivers, short wave, fixed S
- Receivers, short wave, portable ... T
- Receivers, TV J
- Receivers, TV combination K
- Receivers, UHF L
- Receivers, VHF M
- Television Boosters Q

Admiral Corp., 3800 Cortlandt St., Chicago 47, Ill.—A,D,H,J,K,L,M,R
 Aeronautical Radio Mfg. Co., 155 1 St., Mineola, N.Y.—M
 Altronix Devel. Corp., 20 W. 22 St., New York 10, N.Y.—A,D,H
 Alco Electronics Mfg. Co., 3 Wolcott Ave., Lawrence, Mass.—G
 Alliance Mfg. Co., Lake Park Blvd., Alliance, Ohio—O,Q
 American Elite, Inc., 1775 Broadway, New York 19, N.Y.—A,B,S
 Andrea Radio Corp., 27-01 Bridge Plaza N., Long Island City 1, N.Y.—D,J,K,L,M
 Analey Electronics, Inc., 85 Tremont St., Meriden, Conn.—J
 Analev Mfg. Co., Arthur, Doylestown, Pa.—B,H
 Approved Electronic Instrument Corp., 928 Broadway, New York 10, N.Y.—B,G,O
 Arvin Industries, Inc., Columbus, Ind.—A,B,D,H,J,M

St. Audio-Master Corp., 341 Madison Ave., New York 17, N.Y.—H
 Audio Products Corp., 2265 Westwood Blvd., Los Angeles 64, Calif.—B.L.M.
 Automatic Radio Mfg. Co., 122 Brookline Ave., Boston 15, Mass.—A.C.D.H.J.
 Ace Television Corp., Green & Leuning St., S. Hackensack, N.J.—J.L.M.Q.
 Bassett Inc., Rex 1314 NE 17th Court, Ft. Lauderdale, Fla.—S.T.
 Bell Sound Systems, 555 Marion Rd., Columbus 7, Ohio—B
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 New York 4, N.Y.—J,K,L,N
 Michigan Electronics, Inc., 854 N. Rockwell
 St., Chicago 22, Ill.—B,C,E,F,G,I,J,M
 Miles Reproducer Co., 812 Broadway, New
 York 3, N.Y.—E,F,H,I,J,M
 Mohawk Business Machines Corp., 944 Halsey
 St., Brooklyn 37, N.Y.—B,C,E,F,G,I,J,L,M
 Park Armature Co., 883 Boylston St., Boston
 16, Mass.—B,C,K
 Peirce Wire Recorder Corp., 5900 N. North-
 west Hwy., Chicago 31, Ill.—B,C
 Pentron Corp., 221 E. Cullerton St., Chicago,
 Ill.—B,E,F,G,I,J
 Permoflux Corp., 4900 W. Grand Ave., Chi-
 cago 39, Ill.—B,I,J
 Premier Electronic Labs., 382 Lafayette St.,
 New York 3, N.Y.—B
 Press Wireless Laboratories, Inc., 25 Prospect
 Pl., W. Newton 65, Mass.—B
 PRESTO RECORDING CO., P. O. Box 500,
 Paramus, N.J.—B,K,L
 Product Associates, 318 W. Olympic Blvd., Los
 Angeles 15, Calif.—B,J
 RADIO CORP. OF AMERICA Eng'g Prod-
 ucts Div., Camden, N.J.—A,B,F,G,K
 Radio Music Corp., 84 S. Water St., Port
 Chester, N.Y.—F
 Rangertone, Inc., 73 Winthrop St., Newark 4,
 N.J.—B,E,F,G,H,I
 Reevesound Co., 35-54 36 St., Long Island City
 1, N.Y.—E,F,D,G,H
 Rek-O-Kut Co., 38-01 Queens Blvd., Long Island
 City 1, N.Y.—K
 Robinson Recording Labs., 85 S. 9 St., Phila-
 delphia 7, Pa.—F,G,K
 Scully Machine Co., 62 Walter St., Bridgeport
 8, Conn.—K
 Seismograph Service Corp., 701 Kennedy
 Bldg., Tulsa, Okla.—D
 Shoup Eng'g Co., 1516 S. Wabash Ave.,
 Chicago 5, Ill.—B
 Simpson Mfg., Mark, 32-28 49 St., Long Island
 City 3, N.Y.—B,K
 Smith Associates, Rawdon, 2217 M St., N. W.
 Washington 1, D.C.—B
 Soundcriber Corp., 146 Munson St., New Ha-
 ven 4, Conn.—B,E,F,I,J,K

Speak-O-Phone Recording & Equip. Co., 23 W. 60 St., New York, N.Y.—B,K
 Special Products Co., 9115 Brookville Rd., Silver Spring, Md.—L
 Stancil-Hoffman Corp., 921 N. Highland Ave., Hollywood 38, Calif.—B,E,F,H,I,J,L
 Stylereel Corp., 3-33 Rutter St., Rochester 6, N.Y.—B
 Techno Instrument Co., 6666 Lexington Ave., Los Angeles 38, Calif.—B
 Telectro Industries Corp., 35-16 37 St., Long Island City 1, N.Y.—B,E,F,I
 Thompson Clock Co., Bristol, Conn.—F
 United Pressed Products Co., 741 W. Harrison St., Chicago 7, Ill.—B
 U.S. Recording Co., 1121 Vermont Ave., N.W., Washington 5, D.C.—B,E,G
 Valentine Inc., Thomas J., 150 W. 46th St., New York 36, N.Y.—D,E,F,H,K
 Valley Industries Inc., P.O. Box 362 Algonquin, Ill.—B,J
 Wagner Research, 1420 E. Elizabeth Ave., Linden, N.J.—K
 Warren Corp., J.C., 21 Hanse Ave., Freeport, N.Y.—B,E,F
 Webster-Chicago Corp., 5610 W. Bloomingdale Ave., Chicago 39, Ill.—B,C
 Webster Electric Co., 1900 Clark St., Racine, Wisc.—B
 Westrex Corp., 111 8 Ave., New York 11, N.Y.—B,G,H
 Wilcox-Gay Corp., 604 W. Seminary St., Charlotte, Mich.—K
 Williams, Brown & Earle, 904 Chestnut St., Philadelphia 7, Pa.—A,B

73—RECORDERS—SPECIAL PURPOSE

Memory DrumsR
 Recorders, antenna patternAA
 Recorders, codeA
 Recorders, facsimileB
 Recorders, filmC
 Recorders, film thicknessD
 Recorders, fluid flowE
 Recorders, frequencyF
 Recorders, graphicG
 Recorders, machine assembliesH
 Recorders, meteorologicalS
 Recorders, portableI
 Recorders, power levelJ
 Recorders, strainK
 Recorders, telemeteringL
 Recorders, teletypeM
 Recorders, temperatureN
 Recorders, timingO
 Recorders, torqueP
 Recorders, vacuumQ
 Recorders, transientW
 Recorders, vibrationT
 Recorders, video tapeU
 Recorders, weightV

Ame Teletronix Div., NEA Service 1200 W. 3rd St., Cleveland 13, Ohio—B
 Air Associates, Teterboro, N.J.—L
 Airborne Instruments Lab., 160 Old Country Rd., Mineola, L.I., N.Y.—G,AA
 Alden Electronic & Impulse Recording, P.O. Box 125, Westboro, Mass.—B,G,O
 Alfax Paper & Eng'g. Co., P.O. Box 125, Westboro, Mass.—B,G,I,O
 AMPLEX CORP., 934 Charter St., Redwood City, Calif.—I,L,T
 Arkay, 605 1st Ave., S.W., Rochester, Minn.—A
 AUDIO DEVICES, INC., 444 Madison Ave., New York 22, N.Y.—Q
 Audio Industries, Inc., 532 W. 4th St., Michigan City, Ind.—I
 Audio Instrument Co., 133 W. 14th St., New York 11, N.Y.—J,O
 Audio-Tone Oscillator Co., 6511 Main St., Long Hill, Conn.—G
 Aurex Corp., 1117 N. Franklin St., Chicago 10, Ill.—
 Austin Co., 76 9th Ave., New York 11, N.Y.—G,I
 Authorized Mfrs. Service 919 Wyckoff Ave., Brooklyn 27, N.Y.—R,T,W
 Automatic Temperature Control Co., 5212 Pulaski Ave., Philadelphia 44, Pa.—D,E,P,V
 Avion Instrument Corp., 299 State Highway 17, Paramus, N.J.—R
 Bailey Meter Co., 1050 Ivanhoe Rd., Cleveland, 10, Ohio—E,L,N,Q
 Baldwin-Lima-Hamilton, Phila. 42, Pa.—K,P
 Barnes Devel Co., 213 W. Baltimore Pk., Lansdowne 2, Pa.—K
 Bassett Inc., Rex, 1314 NE 17th Court, Ft. Lauderdale, Fla.—F
 Beckman & Whitley, 985 San Carlos Ave., San Carlos, Calif.—N,S
 Bendix Aviation Corp., Pacific Div., 11600 Sherman Way, North Hollywood, Calif.—S
 Boehme, Inc., H. O., 915 Broadway, New York 10, N.Y.—A,M
 Bone Eng'g Corp., 701 W. Broadway, Glendale 4, Calif.—T

Bristol Co., Waterbury 20, Conn.—E,G,J,I,N,O,Q
 Brown Instrument Div., Minneapolis-Honeywell Regulator Co., Wayne & Windrim Ave., Philadelphia 44, Pa.—E,F,N,Q
 BRUSH ELECTRONICS CO., 3405 Perkins Ave., Cleveland 14, Ohio—I,R
 Runnell & Co., 81 Prospect St., Brooklyn 1, N.Y.—B,M
 Cardwell Electronics Productions, Allen D., Plainville, Conn.—B,S
 Century Geophysical Corp., 1333 N. Utica, Tulsa, Okla.—K,L,T
 Clary Multiplier Corp., San Gabriel, Calif.—O
 Color Television Inc., 973 E. San Carlos Ave., San Carlos, Calif.—AA
 Consolidated Engineering Corp., 300 N. Sierra Madre Villa, Pasadena 16, Calif.—G,K,R,T
 Davies Labs, Inc., 4705 Queensbury Rd., Riverdale, Md.—I,L,T
 Digital Products, Inc., 7643 Fay Ave., La Jolla, Calif.—R
 DUMONT LABS., INC., ALLEN B., Instrument Div., 760 Bloomfield Ave., Clifton, N.J.—C
 Ectro Inc., 425 S. Sandusky St., Delaware, Ohio.—I
 Edin Co., 207 Main St. Worcester 8, Mass.—I,K,N,T
 Electronic Associates, Long Branch, N.J.—G
 Electro-Sound Corp., 115 Halleck St., Boston Mass.—B
 Electro-Tech Equip. Co., 308 Canal St., New York 13, N.Y.—G,I,N
 Endevo Corp., 689 S. Fair Oaks Ave., Pasadena 2, Calif.—T
 Eng'g. Research Associates, Div. Remington Rand, Inc., 1902 W. Minnehaha Ave., St. Paul 4, Minn.—L,R
 Esterline-Angus Co., P.O. Box 596, Indianapolis 6, Ind.—F,G,I,L,Q
 Fielden Instrument Co., 2920 N. 4th St., Philadelphia 33, Pa.—I,K,N,P,T
 Fischer & Porter, 19 Warminster Rd., Hatboro, Pa.—E,L,N
 Foxboro Co., 38 Neponset Ave., Foxboro, Mass.—E,K,N,V
 Gale Mechanisms, Dorothea, 81-01 Broadway, Elmhurst, L.I., N.Y.—O
 GENERAL ELECTRIC CO., APPARATUS DIV., 1 River Rd., Schenectady 5, N.Y.—F,G,K,L
 Gorrell & Gorrell, Haworth, N.J.—G,O,R
 Gotham Instruments Div., American Machine & Metals, Sellersville, Pa.—E,I,N,Q
 Gulton Mfg. Corp., 212 Durham Ave., Metuchen, N.J.—I,T
 Hallen Corp., 3502 W. Olive Ave., Burbank, Calif.—C,I
 Haller, Raymond & Brown, 124 N. Atherton St., State College, Pa.—B
 Hathaway Instrument Co., 1315 S. Clarkson St., Denver 10, Colo.—E,K,N,T
 Haydon Mfg. Co., 245 E. Elm St., Torrington, Conn.—O
 Hays Corp., E. 8th St., Michigan City, Ind.—E,N
 Heiland Research Corp., 130 E. 5th Ave., Denver 9, Colo.—I,K,I,T
 Hogan Labs., Inc., 155 Perry St., New York 14, N.Y.—B
 ImpactO-Graph Corp., 1900 Euclid Ave., Cleveland 16, Ohio—I,T
 Insuline Corp. of America, 186 Granite St., Manchester, N.H.—A
 Interelectronics Corp., 2432 Grand Concourse, New York 58, N.Y.—R
 International Business Machines Corp., 590 Madison Ave., New York 22, N.Y.—O
 International Research & Devel., 168 E. Husack St., Columbus 7, Ohio—T
 KOLLSMAN INSTRUMENT CORP., 80-08 45th Ave., Elmhurst 73, N.Y.—R
 Kybernetes Corp., 1100 Raymond Blvd., Newark 5, N.J.—L,N
 Lab. for Electronics, 75 Pitts St., Boston 14, Mass.—R
 Las-Lab., 316 W. Saratoga St., Baltimore 1, Md.—E,G
 Leeds & Northrup Co., 4970 Stenton Ave., Philadelphia 44, Pa.—J,K,L,N
 LIBRASCOPE INC., 1607 Flower St., Glendale 1, Calif.—G,R
 Link Aviation, Inc., Binghamton, N.Y.—G
 Lipps Eng'g. Edwin A., 5485 W. Washington Blvd., Los Angeles 16, Calif.—U
 Logistics Research, Inc., 141 S. Pacific Ave., Redondo Beach, Calif.—R
 L & O Research & Devel. Corp., 134 N. Wayne Ave., Wayne, Pa.—G,N,S
 Lovine Eng'g. Co., 8203 Cedar St., Silver Springs, Md.—C
 MacDonald Co., W.S., 33 University Rd., Cambridge 38, Mass.—R
 Magnaflex Corp., 7300 W. Lawrence Ave., Chicago 31, Ill.—D
 Magnasyn Mfg. Co., 5517 Satsuma Ave., N. Hollywood, Calif.—C,I,L
 Magne-Pulse Corp., 140 Nassau St., New York 38, N.Y.—R,W
 Manning Maxwell & Moore, 250 E. Main St., Stratford, Conn.—N,Q
 MFRS. ENG'G. & EQUIP. CORP., York & Mill Rds., Hatboro, Pa.
 Marchant Research, Inc., 1475 Powell St., Oakland 8, Calif.—R
 Maurer Inc., J. A., 87-01 31st St., Long Island City 1, L.I.—C
 Medcraft Electronic Corp., 41-41 24 St., Long Island City 1, N.Y.—G

Metrotype Corp., 6100 Archer Rd., Summit, Ill.—E,F,I,M,N
 Michigan Electronics Inc., 851 N. Rockwell St., Chicago 22, Ill.—O
 Miles Reproducer Co., 812 Broadway, New York 3, N.Y.—C,I,J
 Minneapolis-Honeywell Regulator Co., Minneapolis 8, Minn.—E,F,G,K,N,P
 Mohawk Business Machines Corp., 944 Halley St., Brooklyn 37, N.Y.—I
 National Research Corp., 160 Charlemont St., Newton Highlands 61, Mass.—Q
 Nosker Eng'g. Products, 1216 Livermore St., Yellow Springs, Ohio.—K
 Offner Electronics Inc., 5320 N. Kedzie Ave., Chicago 26, Ill.—K,L
 Ohmart Corp., 2236 Bogen St., Cincinnati 14, Ohio—D
 Pacific Mercury TV Mfg. Corp., 6955 Van Nuys Blvd., Van Nuys, Calif.—L
 Peirce Wire Recorder Corp., 5900 N. Northwest Hwy., Chicago 31, Ill.—I
 Penn Industrial Instrument Corp., 4110 Haverford Ave., Phila. 4, Pa.—E,L,N
 Pereny Equip. Co., 893 Chambers Rd., Columbus 12, Ohio.—N
 Peters Co., O. S., 1353 N.Y. Ave., N.E. Washington 2, D.C.—K
 Phila. Scientific Glass Co., 4 Eckhard Ave., Abington, Penn.—N
 Phoenix Precision Instr. Co., 3803 N. 5th St., Philadelphia 40, Pa.—E,G,K,V
 Potter Instrument Co., 115 Cutter Mill Rd., Great Neck, N.Y.—H,I,M,O
 Precise Measurements Co., 942 Kings Highway, Brooklyn 23, N.Y.—G
 Press Wireless Labs., 25 Prospect Pl., W. Newton 65, Mass.—B
 RADIO CORP. OF AMERICA, Eng'g Products Div., Camden, N.J.—C
 Radio Recorders 7000 Santa Monica Blvd., Hollywood 38, Calif.—I,L
 Reevesound Co., 35-54 38 St., Long Island City 1, N.Y.—C,H,I
 Shoup Eng'g Co., 1516 S. Wabash Ave., Chicago 5, Ill.—L,U
 Sound Apparatus Co., Stirling, N.J.—J
 Special Instruments Lab., 312 W. Vine St., Knoxville, Tenn.—L,O
 Stancil-Hoffman Corp., 921 N. Highland Ave., Hollywood 38, Calif.—I,L
 Sterling Instruments Co., 15310 W. Mc-Nichols, Detroit 35, Mich.—J,P,T
 Streeter-Amet Co., 4101 Ravenwood Ave., Chicago 13, Ill.—A,K,L,M,N,O,P,Q,V
 Tally Register Corp., 5300 14 Ave., N.W., Seattle 7, Wash.—A
 Talking Devices Co., 4447 Irving Park Rd., Chicago 41, Ill.—C,H
 Techno Instrument Co., 6666 Lexington Ave., Los Angeles 38, Calif.—C,G,J,K
 TEXAS INSTRUMENTS INC., 6000 Lemmon Ave., Dallas 9, Tex.—G
 Thompson Clock Co., H. C., 38 Federal St., Bristol, Conn.—O
 Thwing-Albert Instrument Co., Penn St. & Pulaski Ave., Philadelphia 44, Pa.—N
 Tigerman Eng'g. Co., 4332 N. Western Ave., Chicago 18, Ill.—L
 Times Facsimile Corp., 540 W. 58 St., New York 19, N.Y.—B
 TRANSISTOR PRODUCTS INC., Snow & Union Sts., Boston 35, Mass.—G
 Ultradyne Eng'g. Labs., P.O. Box 8007, Albuquerque, N. Mex.—A
 U.S. Recording Co., 1121 Vermont Ave., N.W., Washington 5, D.C.—I
 Vacuum Tube Products, 506 S. Cleveland St., Oceanside, Calif.—Q
 Warren Corp., J.C., 21 Hanse Ave., Freeport, N.Y.—I
 West Instrument Corp., 525 N. Noble St., Chicago 22, Ill.—N
 Westinghouse Electric Corp., Box 868 Pittsburgh 30, Pa.—F,G,I
 Westrex Corp., 111 Eighth Ave., New York 11, N.Y.—C
 Winslow Co., 9 Liberty St., Newark 5, N.J.—Q
 Wright Eng'g. Co., 180 E. California St., Pasadena 1, Calif.—B,C,F,G,K,L,O,R,T

74—RECORDING ACCESSORIES

Discs, blankA
 DriversB
 EqualizersC
 Footage countersP
 Heads, cuttingD
 Heads, recordingE
 Needles, cuttingF
 Record molding compoundsG
 Record preformsH
 Recording paperI
 ReelsQ
 Screw feedsJ
 Stylus, rotaryK
 Tape magazines, continuousR
 Tape, magneticL

Tape splicers M
 Turntables N
 Wire, magnetic O

Advance Recording Products Co., 36-12 34 St., Long Island City, N.Y.—A
 AEROVOX CORP., 740 Belleville Ave., New Bedford, Mass.—E
 Alfax Paper & Eng'g. Co., P.O. Box 125 Westboro, Mass.—I
 Allied Recording Products Co., 32-32 Greenpoint Ave., Long Island City 1, N.Y.—A,J,N
 Alouge Products, Inc., 163 W. 23rd St., New York 11, N.Y.—M
 American Mica Insulation Co., Manasquan, N.J.—A
 Amplifier Corp. of America, 398 Broadway, New York 13, N.Y.—L
 Ampco Corp., 2835 N. Western Ave., Chicago 18, Ill.—L
 Arkay, 605 1 Ave., S. W., Rochester, Minn.—I
 Astatic Corp., P.O. Box 120, Conneaut, Ohio—D
 Audak Co., 500 6 Ave., New York 36, N.Y.—D,E
 AUDIO DEVICES INC., 444 Madison Ave., New York 22, N.Y.—A,F,I
 Audio Master Corp., 341 Madison Ave., New York 17, N.Y.—L,N
 AVERY ADHESIVE LABEL CORP., 1616 S. California Ave., Monrovia, Calif.—M
 Avion Instrument Corp., 299 State Hwy #17, Paramus, N.J.—E
 Bell & Howell, 7100 McCormick Rd., Chicago 45, Ill.—N
 Berlant Associates, 4917 W. Jefferson Blvd., Los Angeles 16, Calif.—E
 BRUSH ELECTRONICS CO., 3405 Perkins Ave., Cleveland 14, Ohio—D,E,L
 Caltron Products Co., 1310 S. Hobart Blvd., Los Angeles 6, Calif.—A
 CAMERA EQUIPMENT CO., 1600 Broadway, New York 19, N.Y.—E,L,M,P
 Centralab Div., Globe Union, Inc., 900 E. Keefe Ave., Milwaukee 1, Wisc.—C
 CINEMA ENG'G. CO., DIV. AERVOX CORP., 11 Chestnut St., Burbank, Calif.—C
 Consolidated Eng'g Corp., 300 N. Sierra Madre Villa, Pasadena 15, Calif.—I
 Cook Laboratories, Inc., 114 Manhattan St., Stamford, Conn.—D,E
 Cousino, Inc., 2325 Madison Ave., Toledo 2, Ohio—L,M,R
 Crescent Industries, 5900 W. Touhy Ave., Chicago 31, Ill.—L,O
 Culbertson Co., G. K., 8471 Leroy St., San Gabriel, Calif.—N
 Daystrom Electric Corp., 837 Main St., Poughkeepsie, N.Y.—L
 Dubbings Co., 41-10 45 St., Long Island City 4, N.Y.—I
 Duotone Co., 77 Walling Terrace, Keyport, N.J.—A,C,D,F,L
 Ectro, Inc., 425 S. Sandusky St., Delaware, Ohio—L
 Edin Co., 207 Main St., Worcester 8, Mass.—I
 Electro-Mechanical Instrument Co., 812 Chestnut St., Perkasie, Pa.—E
 Electro-Sound Corp., 115 Halleck St., Boston, Mass.—C,L,M,P
 Electro-Tech Equipment Co., 308 Canal St., New York 13, N.Y.—I
 Electro-Technica, Inc., 198 Albion Ave., Paterson, N.J.—C
 Electrosonic Specialties, 7230 Clinton Rd., Upper Darby, Pa.—L,O
 Electro Vision Lab., 30-16 Crescent St., Long Island City 2, N.Y.—L
 FAIRCHILD RECORDING EQUIP. CORP., 154 St. & 7th Ave., Whitestone, N.Y.—C,D,E,J,N
 Federal Sapphire Products, 12 River Rd., Fair Lawn, N.J.—F
 Ferrocube Corp. of America, 35 Marshall St., N. Adams, Mass.—E
 Fidelitone, Inc., 1616 Devon Ave., Chicago 26, Ill.—L,O
 Frutchey, M., Box 28, Hackettstown, N.J.—E
 Gale Dorothea Mechanisms, 81-01 Broadway Elmhurst, L.I., N.Y.—L,N
 Garod Radio Corp., 70 Washington St., Brooklyn 1, N.Y.—L
 General Cement Mfg. Co., 919 Taylor Ave., Rockford, Ill.—F,L,O
 GENERAL ELECTRIC CO., 1 River Rd., Schenectady, N.Y.—I
 Hallen Corp., 3503 W. Olive Ave., Burbank, Calif.—C,E,L,P
 Hathaway Instrument Co., 1315 S. Clarkson St., Denver 10, Colo.—I
 Hogan Labs, Inc., 155 Perry St., New York 14, N.Y.—I
 Home Recording Products Corp., 56 Mill Rd., Freeport, N.Y.—A
 Hycoor Co., 11423 Vanowen St., N. Hollywood, Calif.—C
 Impact-O-Graph Corp., 1900 Euclid Ave., Cleveland 15, Ohio—I
 Jensen Industries, 329 S. Wood St., Chicago, 12, Ill.—F,K,L,Q
 Kearfott Co., 1378 Main Ave., Clifton, N.J.—E
 Kinevox Inc., 116 S. Hollywood Way, Burbank, Calif.—M
 KOLLSMAN INSTRUMENT CORP., 80-08 45th, Elmhurst 73, N.Y.—E
 Korb Eng'g. & Mfg. Co., 30 Ottawa Ave., Grandville, Mich.—O



Land-Air, Inc., 201 N. Wells St., Chicago 10, Ill.—E
 Leeds & Northrup Co., 4970 Stenton Ave., Philadelphia 44, Pa.—I
 Lipps Co., Edwin A., 5485 W. Washington Blvd., Los Angeles 16, Calif.—D,E,F
 Life Record Co., 64 W. Randolph St., Chicago, Ill.—A
 Magnasynce Mfg. Co., 5517 Satsuma Ave., N. Hollywood, Calif.—K,E,M
 Magnecessories, P.O. Box 6960, Washington 20, D.C.—M
 Magne-Pulse Corp., 140 Nassau St., New York, 38, N.Y.—A
 Marchant Research, Inc., 1475 Powell St., Oakland 8, Calif.—E
 Medcraft Electronic Corp., 41-41 24 St., Long Island City 1, N.Y.—I
 Merix Chemical Co., 1021 E. 55 St., Chicago 15, Ill.—G
 Michigan Electronics Inc., 854 N. Rockwell St., Chicago 22, Ill.—L,O,Q
 Miller Mfg. Co., M. A., Libertyville, Ill.—F
 Mohawk Business Machines Corp., 944 Halsey St., Brooklyn 37, N.Y.—E,L
 Monson Corp., 919 N. Michigan Ave., Chicago, 11, Ill.—L
 National Hollywood, 1475 El Mirador Dr., Pasadena 3, Calif.—A,F,L,M
 Orradio Industries, T-120 Marvyn Rd., Opelika, Ala.—L,Q
 Peirce Wire Recorder Corp., 1328 Sherman Ave., Evanston, Ill.—L,O
 Pentron Corp., 221 E. Cullerton St., Chicago, Ill.—E,L,Q
 Potter Instrument Co., 115 Cuttermill Rd., Great Neck, N.Y.—B
 PRESTO RECORDING CO., P.O. Box 500, Paramus, N.J.—A,C,D,E,F,J,N
 Prestosel Mfg. Co., 37-27 33 St., Long Island City 1, N.Y.—M
 Pulse Techniques, Inc., 1411 Palisade Ave., W. Englewood, N.J.—C
 RADIO CORP. OF AMERICA—RCA VICTOR DIV., Front & Cooper St., Camden 2, N.J.—L,N
 Radio Music Corp., 84 S. Water St., Port Chester, N.Y.—E
 Radio Recorders, 7000 Santa Monica Blvd., Hollywood 38, Calif.—A,L
 Reccoton Corp., 147 W. 22 St., New York 11, N.Y.—A,F,L
 Reevesound Co., 35-54 36 St., Long Island City 1, N.Y.—B,C
 REEVES SOUNDRAFT CORP., 10 E. 52 St., New York 22, N.Y.—A,F,L,Q
 Rek-O-Kut Co., 38-01 Queens Blvd., Long Island City 1, N.Y.—D,F,N
 Robinson Recording Labs., 35 S. 9 St., Philadelphia 7, Pa.—N
 Schaevelts Eng'g., Crescent Blvd. & Drexel Ave., Camden 1, N.J.—I
 Scott Inc., Herman Hosmer, 385 Putnam Ave., Cambridge 39, Mass.—C
 SHURE BROS., 225 W. Huron St., Chicago 10, Ill.—E
 Smith Associates, Rawdon, 2217 M St., N.W., Washington 1, D.C.—C,E
 Sonic Recording Products, 58 Mill Rd., Freeport, L.I., N.Y.—A,F
 Soroban Eng'g Inc., Box 117 Melbourne, Fla.—E
 S.O.S. Cinema Supply Corp., 602 W. 52 St., New York 19, N.Y.—C,L,M,P
 Sound Apparatus Co., Stirling, N.J.—I
 Sound Devices Inc., 129 E. 124th St., New York 35, N.Y.—A
 SoundScriber Corp., 146 Munson St., New Haven 4, Conn.—A,L
 Stancil-Hoffman Corp., 921 N. Highland Ave., Hollywood 38, Calif.—E
 Talking Devices Co., 4447 Irving Park Rd., Chicago 41, Ill.—B,D,E
 Taylorel Corp., 3-33 Rutter St., Rochester 6, N.Y.—Q
 Tech Laboratories Inc., Bergen & Edsall Blvds., Palisades Park, N.J.—M
 Techno Instrument Co., 6566 Lexington Ave., Los Angeles 38, Calif.—L
 Television Associates, E. Michigan St., Michigan City, Ind.—R
 Thompson Clock Co., H. C., 38 Federal St., Bristol, Conn.—E,N
 Times Facsimile Corp., 540 W. 58 St., New York 19, N.Y.—I
 United Pressed Products Co., 741 W. Harrison St., Chicago 7, Ill.—E
 United Transformer Co., 150 Varick St., New York 13, N.Y.—C
 U.S. Recording Co., 1121 Vermont Ave., N.W., Washington 5, D.C.—A,C,D,E,F,L,M,N
 Veeder-Root Inc., 70 Sargeant St., Hartford 2, Conn.—P
 Webster-Chicago Corp., 5610 W. Bloomingdale Ave., Chicago 39, Ill.—L,O
 Western Mfg. Co., 1400 W. 22 St., Kearney, Nebr.—L

Westinghouse Electric Corp., Box 868, Pittsburgh 30, Pa.—I
 Westrex Corp., 111 Eighth Ave., New York 11, N.Y.—B,D
 Williams, Brown & Earle, 904 Chestnut St Philadelphia 7, Pa.—L,O

75—RECTIFIERS

Battery eliminators A
 Inverters B
 Rectifier power units D
 Rectifiers, electronic tube E
 Rectifiers, germanium L
 Rectifiers, hand-cranked F
 Rectifiers, mercury arc G
 Rectifiers, metal oxide I
 Rectifiers, selenium M

Accurate Eng'g. Co., 2005 Blue Island Ave., Chicago 8, Ill.—A,D,E,G,M
 Air Associates, Teterboro, N.J.—E
 Airpax Products Co., P.O. Box 137, Baltimore 20, Md.—D
 American Communications Corp., 306 Broadway, New York 7, N.Y.—D,E
 AMERICAN TV & RADIO CO., 300 E. 4 St., St. Paul 1, Minn.—A,B,D
 Arnhold Ceramics Inc., 1 E. 57th St., New York 22, N.Y.—I,M
 Authorized Mfrs. Service Co., 919 Wyckoff Ave., Brooklyn 27, N.Y.—E
 Bart-Messing Corp., 229 Main St., Belleville 9, N.J.—E,M
 Berkshire Laboratories, 586 Beaver Pond Rd., Lincoln, Mass.—L,M
 Birdsall Mfg. Co., 750 San Antonio Rd., San Antonio, Texas—D
 Bittermann Electric Co., Barlow & Grove Sts., Canaan, Conn.—D
 Bogue Electric Mfg. Co., 52 Iowa Ave., Patterson 3, N.J.—M
 Bone Eng'g Corp., 701 W. Broadway, Glendale 4, Calif.—D,M
 BRADLEY LABS., 168 Columbus Ave., New Haven 11, Conn.—I,L,M
 Chatham Electronics Corp., 630 W. Mt. Pleasant Ave., Livingston, N.J.—E,G
 Clark Electronic Labs., Box 165, Palm Springs, Calif.—D,E,G,I,M
 Clegg Laboratories, Inc., 142 S. Livingston Ave., Livingston, N.J.—D
 Communication Devices Co., 2331 12 Ave., New York City 27, N.Y.—B,D
 Conant Labs., 6500 "O" St., Lincoln 5, Nebr.—I,M
 Condenser Products Co., 7517 N. Clark St., Chicago 26, Ill.—D,E
 Drake Co., R. L., 18 E. Central Ave., Milanburg, Ohio—A
 Dressen-Barnes Corp., 250 N. Vinedo Ave., Pasadena 8, Calif.—A,B,D,E,G,I,L,M
 Dresser Electric Co., 942 E. Larned St., Detroit 7, Mich.—A,D
 Drive-In-Theater Mfg. Co., 505 W. 9th, Kansas City, Mo.—E,M
 Eastgap Co., 285 Columbus Ave., Boston 16, Mass.—D
 Eicor, 1501 W. Congress, Chicago 7, Ill.—B
 Eitel-McCullough, Inc., 788 San Mateo Ave., San Bruno, Calif.—E
 Eldico of N.Y., Inc., 70-72 E. 2nd St., Mineola, L.I., N.Y.—D
 Electran Mfg. Co., 1901 Clybourn Ave., Chicago 14, Ill.—D
 Electro Eng'g Works, 6021 College Ave., Oakland 18, Calif.—D
 Electronic Devices Inc., 429 12th St., Brooklyn 15, N.Y.—M
 Electronic Instrument Co., 84 Withers St., Brooklyn 11, N.Y.—A
 Electronic Measurements Co., Lewis St. & Maple Ave., Eatontown, N.J.—A
 Electronic Rectifier Co., 1462 E. Main St., Rochester 2, N.Y.—D
 Electronic Rectifiers, Inc., 2102 Spann Ave., Indianapolis 3, Ind.—D
 ELECTRO PRODUCTS LAB. INC., 4501 N. Ravenswood Ave., Chicago, Ill.—A
 Electro-Tech Equip. Co., 308 Canal St., New York, N.Y.—A,B,D,L,M
 Electrotechnic Corp., 15601 Arrow Hwy., Azusa, Calif.—E
 Eng'g. Research & Development Co., Addison, Ill.—E,I
 Eco Mfg. Co., Box 344, Summit, Ill.—B
 Fansteel Metallurgical Corp., 2200 Sheridan Rd., N. Chicago, Ill.—D,M
 Federal Electric Corp., 6446 Santa Monica Blvd., Los Angeles 38, Calif.—A,D,L,M
 FEDERAL TELEPHONE & RADIO CORP. Div. I.T.&T., 100 Kingsland Rd., Clifton, N.J.—A,D,G,L,M
 Furst Electronics, 3322-A. W. Lawrence Ave., Chicago 25, Ill.—D
 GALBRAITH & SON ELECTRIC CORP., 45 Ave. of the Americas, New York 11, N.Y.—D
 Galvanic Products Corp., 110 E. Hawthorn Ave., Valley Stream, N.Y.—A,D
 Gates Electric Co., 65 W. Broadway, New York, N.Y.—A,B,D,M
 General Communications, P O Box 169, Fort Atkinson Wisc.—M

GENERAL ELECTRIC CO., Germanium Products Div., Electronics Park, Syracuse, N.Y.—L
 GENERAL ELECTRIC CO., APPARATUS DIV., 1 River Rd., Schenectady 5, N.Y.—B,E,L,M
 General Electrosonics Inc., 32 W. 22 St., New York 10, N.Y.—D,E
 Green Electric Co., W., 130 Cedar St., New York 6, N.Y.—D
 Hall Inc., F. Sumner, Amityville, N.Y.—A,D
 Heath Co., 305 Territorial, Benton Harbor, Mich.—A
 Meyer Products Co., 471 Cortlandt St., Belleville 9, N.J.—A,D
 Lafford Machine Works, 2201 Carmelina Ave., Los Angeles 64, Calif.—A,D
 Mull & Co., R. O. 1300 Parsons Ct., Rocky River, Ohio—D,M
 Industrial Rectifier Co., 161 Washington St., New York 6, N.Y.—D
 Industrial Tubes, Inc., 321 Stevens St., Geneva, Ill.—E
 Inet Div., Leach Corp., 4441 S. Sante Fe Ave., Los Angeles 58, Calif.—A,D
 INTERNATIONAL RECTIFIER CORP., 1521 E. Grand Ave., El Segundo, Calif.—D,L,M
 INTERNATIONAL RESISTANCE CO., 401 N. Broad St., Philadelphia 8, Pa.—L,M
 Jersey City Tech. Labs., 880 Bergen Ave., Jersey City 6, N.J.—I
 Robbins Electronic Enterprises, 500 Hamilton Ave., Menlo Park, Calif.—D
 Kane Electronics Corp., 81 Willoughby St., Brooklyn 1, N.Y.—A
 KELLOGG SWITCHBOARD & SUPPLY, 79 W. Monroe St., Chicago 3, Ill.—I,M
 Kemtron Electron Products, 23 Brown St., Salem, Mass.—E
 Kepco Labs., 131-38 Sanford Ave., Flushing 55, N.Y.—A,D
 Kocour Co., 4800 S. St. Louis Ave., Chicago 32, Ill.—M
 Kotron Rectifier Corp., 175 Murray St., Newark 5, N.J.—M
 Lambda Electronics Corp., 103-02 Northern Blvd., Corona 68, N.Y.—D,E
 LANGEVIN MFG. CORP., 37 W. 65 St., New York 23, N.Y.—D
 LaRose & Assoc., W.T., 31 Ontario St., Cohoes, N.Y.—D
 Lee Electric & Mfg. Co., 2806 Clearwater St., Los Angeles 39, Calif.—A,D
 Leland Electric Co., P.O. Box 1060, Dayton, Ohio—B
 Lewis & Kaufman, Ltd., P.O. Box 337 Los Gatos, Calif.—E
 Lorain Products Corp., 1122 F St. Lorain, Ohio—A,D
 Lyso Mfg., 1401 Clinton, Hoboken, N.J.—D
 Mackay Inc., A.D., 198 Broadway, New York 38, N.Y.—L
 Mag-Electric Products, 14405 Crenshaw Ave., Gardiner, Calif.—D
 Magnatron Inc., 248 Schuyler Ave., Kearny, N.J.—D,E,G
 Magnetic Amplifiers, Inc., 632 Tinton Ave., New York 55, N.Y.—D
 Magnex Corp., 90-28 Van Wyck Expressway, Jamaica 18, N.Y.—A,B,D,E,I
 MALLORY & CO. P.R., 3029 E. Washington St., Indianapolis, Ind.—B,C,D,H,I,K
 Maxson Corp., W.L., 460 W. 34th St., New York 1, N.Y.—B
 McColpin-Christie Corp., 3410 W. 67 St., Los Angeles 43, Calif.—D
 Mercury Electronic Co., box 450, Red Bank, N.J.—D,E
 Miller Co., Sanford, 691 Bedford Ave., Brooklyn 6, N.Y.—A,M
 Milwaukee Transformer Co., 5231 N. Hopkins St., Milwaukee 9, Wisc.—B,D
 Minn.-Honeywell Regulator Co., Honeywell Aero Div., Minneapolis 13, Minn.—L
 Mission-Western Engrs. Inc., 132 W. Colo. St., Pasadena, Calif.—B
 Model Rectifier Corp., 557 Rogers Ave., Brooklyn 25, N.Y.—A,B,D,M
 Moloney Electric Co., 5390 Bircher Blvd., St. Louis 20, Mo.—D,E
 Motordyne Inc., 2661 S. Myrtle Ave., Monrovia, Calif.—B
 Munston Mfg. & Service, Inc., Beech St., Islip, N.Y.—D,E
 Motor Eng'g. Co., 24 Chestnut St., Rutherford, N.J.—E,I
 Neutronic Associates, 87-16 116th St., Richmond Hill, N.Y.—E
 North Electric Mfg. Co., S. Market St., Galton, Ohio—A
 Opad-Green Co., 71 Warren St., New York 7, N.Y.—A,D,M
 Perkin Eng'g. Corp., 345 Kansas St., El Segundo, Calif.—A,D,E,I,M
 Peschel Electronics, Inc., 13 Garden St., New Rochelle, N.Y.—D
 Philmore Mfg. Co., 113 University Pl., New York 3, N.Y.—G,M
 Power Designs Inc., 119-22 Atlantic Ave., Richmond Hill, N.Y., 19, N.Y.—D
 Power Equip. Co., 5740 Nevada E., Detroit 34, Mich.—A,D
 Power Transformer Co., 532 Hulberry St., Newark 5, N.J.—A,E,G,I,L,M
 Precision Measurements Co., 942 Kings Highway, Brooklyn 23, N.Y.—D
 Radart Corp., 3455 Vega Ave., Cleveland 13, Ohio—A,B
 Radio Kits, Inc., 120 Cedar St., New York 6, N.Y.—A,D

Radio Products Co., 2300 W. Armitage Ave., Chicago 47, Ill.—A
 RADIO RECEPTOR CO., 251 W. 19th St., New York 11, N.Y.—L,M
 Radio Sonic Corp., 111 Bleeker St., New York 12, N.Y.—D
 Rapid Electric Co., 2881 Middletown Rd., Bronx, 61 N.Y.—D,M
 RAYTHEON MFG. CO., Receiving Tube Div., 55 Chapel St., Newton 58, Mass.—E,I
 RAYTHEON MFG. CO., Waltham 54, Mass.—A,M
 Redmond Co., Owosso, Mich.—B,F
 Regulator Eng'g. & Devel. Co., 11645 W. Jefferson Blvd., Culver City, Calif.—D
 Remco Mfg. Co., 545 N. La Salle St., Chicago 10, Ill.—E
 Richardson-Allen Corp., 116-1515 Ave., College Point, L.I., N.Y.—A,D,G
 Rich Electronics, Inc., 212 N. W. 8 Ave., Miami 36, Fla.—D
 Schauer Mfg. Corp., 4500 Alpine Ave., Cincinnati 36, Ohio—A,D,I,M
 S.C. Laboratories, 37 George St., Newark 5, N.J.—D
 Smith-Meeker Eng'g. Co., 157 Chambers St., New York 7, N.Y.—A,D
 Sorensen & Co., 375 Fairfield Ave., Stamford, Conn.—A,B,D,E
 S.O.S. Cinema Supply Corp., 602 W. 52nd St., New York 19, N.Y.—A,B
 Spartan Radio-TV, 2400 E. Ganson St., Jackson, Mich.—D
 Spera Electronics Labs., 37-10 33 St., Long Island City, N.Y.—D,M
 Strong Electric Co., 87 City Park Ave., Toledo 2, Ohio—D,E,G,I,M
 Superior Rectifier & Mfg. Co., 3000 Kenwood St., Hammond, Ind.—M
 SYLVANIA ELECTRIC PRODUCTS, 1740 Broadway, New York 19, N.Y.—E
 TARZIAN INC., SARKES, 415 N. College Ave., Bloomington, Ind.—M
 Tech Laboratories Inc., Bergen & Edsall Bldgs., Palisades Park, N.J.—B,D
 Technical Apparatus Builders, 109 Liberty St., New York 6, N.Y.—D,E,I,M
 Telemarine Communications Co., 3040 W. 21 St., Brooklyn 24, N.Y.—D
 Telkor, Inc., Telegraph Rd., Elyria, Ohio—A,B
 TEXAS INSTRUMENTS INC., 6000 Lemmon Ave., Dallas 9, Texas—E
 Ther Electric & Machine Works, 17 S. Jefferson St., Chicago 6, Ill.—A,D
 Thompson Clock Co., H. C., 38 Federal St., Bristol, Conn.—B,D,E,I
 Thor Transformer & Electronics, Inc., 750 San Antonio Rd., Palo Alto, Calif.—D
 TUNG-SOL ELECTRIC INC., 95 8th Ave., Newark 4, N.J.—E,L
 Union Spring & Mfg. Co., 1057 Summit Ave., Jersey City 7, N.J.—A,D
 Union Switch & Signal Co., 1789 Braddock Ave., Pittsburgh 18, Pa.—I,M
 Universal Electronics Co., 2012 S. Sepulveda Blvd., Los Angeles 25, Calif.—D
 Universal Scientific Co., 1102 Shelby St., Vincennes, Ind.—M
 Valtronics, Inc., 242 Valley St., Dayton 4, Ohio—A
 Varo Mfg. Co., 1801 Walnut St., Garland, Tex.—B
 Vickers Electric Div., Vickers, Inc., 1835 Locust St., St. Louis 3, Mo.—M
 Vokar Corp., Dexter, Mich.—A,B
 West Coast Electronics Co., 5873 W. Jefferson Blvd., Los Angeles 16, Calif.—B
 Westinghouse Electric Corp., 2519 Wilkens Ave., Baltimore 3, Md.—E
 Westinghouse Electric Corp., Box 868, Pittsburgh 30, Pa.—I
 Wunderlich Radio Co., 2-5th Ave., New York 11, N.Y.—D

Relays, telephone V
 Relays, thermal AE
 Relays, thermostatic delay AF
 Relays, three position AG
 Relays, time-delay W
 Relays, undervoltage X
 Relays, vacuum contact Y
 Relays, vibrating reed type Z
 Relays, video switching AA
 Solenoids AB

ADAMS & WESTLAKE CO., 1025 N. Michigan, Elkhart, Ind.—L,M,N,P,W,X,Y,AC
 Advance Electric & Relay Co., 2435 N. Naomi St., Burbank, Calif.—B,H,J,K,M,P,Q,U,V,W,AB,AC,AD,AE,AF
 AIRCRAFT TRANSFORMER CORP., Long Branch, N.J.
 Airpax Products Co., P.O. Box 137, Baltimore 20, Md.—E,O
 Allen-Bradley Co., 1326 S. 2nd St., Milwaukee 4, Wisc.—K,M,P,AB,AE
 Allied Control Co., 2 East End Ave., New York 21, N.Y.—B,E,H,I,J,K,M,N,O,P,Q,R,U,V,AC,AD
 American Instrument Co., 8050 Georgia Ave., Silver Spring, Md.—F,P,AC
 American Radiotelephone Co. Inc., 3505 4 St. N., St. Petersburg, Fla.—V
 American Relay & Controls, Inc., 3621 Howard St., Skokie, Ill.—H,K,M,N,P,V,W,X,AC
 AMERICAN TV & RADIO CO., 300 E. 4 St., St. Paul 1, Minn.—Z
 American Vacuum Products Corp., 11719 Santa Monica Blvd., W. Los Angeles 25, Calif.—Y
 AMPERITE CO., INC., 561 Broadway, New York 12, N.Y.—W,AF
 Arrow-Hart & Hegeman Electric Co., 103 Hawthorn St., Hartford 6, Conn.—K,M
 Assembly Products, Main & Bell Sts., Chagrin Falls, Ohio.—M,N,X
 Automatic Electric Co., 1033 Van Buren St., Chicago 7, Ill.—E,H,I,J,K,L,O,P,R,S,T,U,V,AC
 Automatic Electric Mfg. Co., 10 State St., Mankato, Minn.—B,H,I,J,K,P,V,W
 Automatic Electronic Eng'g. Co., 2207 E. North Ave., Milwaukee 2, Wisc.—A
 Automatic Switch Co., 391 Lakeside Ave., Orange, N.J.—E, G, I, K, M, N, O, P, T, W, X, AB
 Automatic Temperature Control Co., 5212 Pulaski Ave., Philadelphia 44, Pa.—F,S,W
 Barber-Coleman Co., 1300 Rock St., Rockford, Ill.—O
 Barton Electronics, Inc., 955 Asylum Ave., Hartford 6, Conn.—F,M
 Batsen Electronics Corp., J. A., 1081 S. 27th St., Omaha, Neb.—Z
 Bayside Watch Tool Co., 20-02 Utopia Parkway, Whitestone 67, New York, N.Y.—U
 Berkshire Laboratories, 586 Beaver Pond Rd., Lincoln, Mass.—A
 Biddle Co., Jas. G., 1316 Arch St., Philadelphia 7, Pa.—G,Z
 Bitterman Electric Co., Barlow & Grove Sts., Canaan, Conn.—AB
 BLONDER-TONGUE LABS., INC., 526 North Ave E., Westfield, N.J.—AE
 Brubaker Mfg. Co., 9151 Exposition Dr., Los Angeles 34, Calif.—F,U,AA
 BUNNELL & CO., J. H., 81 Prospect St., Brooklyn, 1, N.Y.—M,O,V
 BURROUGHS CORP., Electronic Instruments Div., 1200 Vine St., Philadelphia 7, Pa.—F
 Calbest Eng'g. & Electronics Co., 828 N. Highland Ave., Hollywood 38, Calif.—F
 Caltron Products Co., 1310 S. Hobart Blvd., Los Angeles 6, Calif.—AB
 Central Scientific Co., 1700 Irving Park Rd., Chicago 13, Ill.—F
 Clare & Co., C. P., 3101 Pratt Blvd., Chicago 45, Ill.—I, J, K, L, O, P, R, T, U, V, W, AA, AC, AD
 Clark Controller Co., 1146 E. 152 St., Cleveland 10, Ohio—K,M,W
 Clegg Laboratories, Inc., 142 S. Livingston Ave., Livingston, N.J.—F
 Comar Electric Co., 3349 W. Addison St., Chicago 18, Ill.—D,K,V,W,AC
 Conn. Telephone & Electric Co., 70 Britannia St., Meriden, Conn.—AB
 Continental Electronics Ltd., 302 Oakland St., Brooklyn 22, N.Y.—B,V
 Control Corp., 718 Central Ave., Minneapolis 14, Minn.—V,Z
 Cook Electric, 2700 Southport Ave., Chicago, 14, Ill.—E,F,G,H,I,J,K,M,P,S,T,U,V,W,X,AB
 Corona Eng'g. Service, 94-52 Corona Ave., Elmhurst, L.I., N.Y.—F,L
 Cramer Co., R. W., Box 49, Centerbrook, Conn.—W
 CUNNINGHAM, SON & CO., JAMES, 13 Canal St., Rochester 8, N.Y.—D
 Cutler-Hammer, Inc., 436 N. 12 St., Milwaukee 1, Wisc.—F,K,M,N,O,W,X,AB,AC
 DAGE ELECTRIC, 71 N. 2nd Ave., Beech Grove, Ind.—AA
 Dallons Laboratories, Inc., 5066 Santa Monica Blvd., Los Angeles 29, Calif.—U,AC
 Danbury-Knudsen, 15 Thorpe St., Danbury, Conn.—B,Q
 Davis Electric Co., 230 N. Spring Ave., Cape Girardeau, Mo.—B,U,V,AB

76—RELAYS

Relays, audio operated AM
 Relays, capacitance A
 Relays, coaxial B
 Relays, crossbar D
 Relays, differential E
 Relays, electronic F
 Relays, frequency selective G
 Relays, hermetically sealed AC
 Relays, high voltage H
 Relays, impulse I
 Relays, keying J
 Relays, latching K
 Relays, mercury L
 Relays, overload M
 Relays, overvoltage N
 Relays, plate circuit AD
 Relays, polarized O
 Relays, power P
 Relays, R-F Q
 Relays, rotary R
 Relays, sequence S
 Relays, stepping T
 Relays, subminiature U

Deitz Co., S. J., 38 River Edge Rd., River Edge, N.J.—F
 Deltron Inc., P.O. Box 192, Glenside, Pa.—F
 Detect-O-Ray Co., 2622 N. Halsted St., Chicago 14, Ill.—P
 Devtronic, Inc., 221 N. Hermitage Ave., Trenton, N.J.—F
 Dilectron Inc., 2661 S. Myrtle Ave., Monrovia, Calif.—AE
 Dormitzer Electric & Mfg. Co., 6 Hadley St., Cambridge 40, Mass.—W
 Dow-Key Co., Warren, Minn.—B,P
 Durakool, Inc., 1010 N. Main St., Elkhart, Ind.—L,W
 Eagle Signal Corp., 202 20 St., Moline, Ill.—W
 Elbert Electronics Corp., 212-26 Jamaica Ave., Queens Village 28, N.Y.—H.K.A.C.A.G
EDISON INC., THOMAS A., 93 Lakeside Ave., W. Orange, N.J.—E.M.N.O.W.X.A.C.A.D.A.E
EITEL-McCULLOUGH, INC., 798 San Mateo Ave., San Bruno, Calif.—Y
 Electrical Service Co., 1271 Mission St., San Francisco 3, Calif.—I,W
 Electric Controller & Mfg. Co., 2700 E. 79th St., Cleveland 4, Ohio—G,M
 Electro-Mechanical Specialties, 6819 Melrose Ave., Los Angeles 38, Calif.—J.M.N.P.W.A.C.A.D
 Electronic Control Corp., 1573 E. Forest Ave., Detroit 7, Mich.—F,M
 Electro-Physics Co., 287 Broadway, New York 7, N.Y.—F
 Electro-Tech Equip. Co., 308 Canal St., New York, N.Y.—K.L.P.S.T.U.V.W.A.B.A.C.A.D
 Electro-Technics, Inc., 198 Albion Ave., Paterson N.J.—AB
 Eng'g. Research & Development Co., Addison, Ill.—A,F
 Eureka TV & Tube Corp., 69 Fifth Ave., Hawthorne, N.J.—F,U,W
 Farmer Electric Co., 21 Mossfield Rd., Waban 68, Mass.—F
FEDERAL TELEPHONE & RADIO CO., Div. I.T.&T., 100 Kingsland Rd., Clifton, N.J.—B.D.E.I.J.S.T.V
 Fielden Instrument Div., Robertshaw-Fulton Controls Co., 2920 N. 4th St., Philadelphia 33, Pa.—A,F,A,E
 Filtrors, Inc., 30 Sagamore Hill Dr., Port Washington, N.Y.—G.R.U.Z.A.C.A.D
 Five Star Co., West Main St., Plantsville, Conn.—F,P.A.B.A.C
GATES RADIO CO., 123 Hampshire St., Quincy, Ill.—I,Q
 General Aviation Corp., 540 E. 80 St., New York 21, N.Y.—P
GENERAL COMMUNICATION CO., 681 Beacon St., Boston 15, Mass.—B
 General Communications, P.O. Box 169, Fort Atkinson, Wis.—R,T
GENERAL CONTROL CO., 1200 Soldiers Field Rd., Boston 34, Mass.—F
GENERAL ELECTRIC CO., Apparatus Div., 1 River Rd., Schenectady 5, N.Y.—E.F.H.I., K.M.N.O.P.S.T.U.V.W.X.A.B
 General Hermetic Sealing Corp., 99 E. Hawthorne Ave., Valley Stream, L.I., N.Y.—AC
GLANNINI & CO., G. M., 914 E. Green St., Pasadena 1, Calif.—Y
GUARDIAN ELECTRIC MFG. CO., 1621 W. Walnut St., Chicago 12, Ill.—I.J.K.M.N.P., Q.S.T.U.V.W.X.A.B.A.C.A.D
 G-V Controls Inc., 28 Hollywood Plaza, East Orange, N.J.—M.N.W.A.B.A.F
 Haledy Electronics Co., 57 William St., New York 5, N.Y.—F,L,X,A,C
HART MFG. CO., 202 Bartholomew Ave., Hartford, Conn.—F,U,A.C.A.D
 Haydon Co., A. W., 232 N. Elm St., Waterbury, Conn.—S,W,A,C
 Haydon Mfg. Co., 245 E. Elm St., Torrington, Conn.—S,W,A,C
 Hedin Tele Technical Corp., 640 W. Mt. Pleasant Ave., Livingston, N.J.—AC
 Heineman Electric Co., Penn. Ave. & Plum St., Trenton 2, N.J.—W
 Hercules Elec. Mach'y. & Equip. Co., 1442 E. Washington Blvd., Los Angeles 21, Calif.—M,V,A,B
 Hetherington, Inc., Sharon Hill, Pa.—K,P,A,C
 Hoffman Eng'g. Corp., Anoka, Minn.—K
 Hufco Industries, 2815 W. Olive Ave., Burbank, Calif.—U,V,A,C
 Industrial Electronics Co., Hanover St., Hanover, Mass.—F,W
 IQ Industries, 6110 Wilshire Blvd., Los Angeles 36, Calif.—F,W
JENNINGS RADIO MFG. CO., P.O. Box 1278, San Jose 8, Calif.—B.H.I.J.K.M.P.Y
JOHNSON CO., E. F., Waseca, Minn.—H,Q
KELLOGG SWITCHBOARD & SUPPLY CO., 79 Monroe St., Chicago 3, Ill.—D,I,S,T,V
KETAY MFG. CORP., 555 Broadway, New York 12, N.Y.—R
 Kinetex Inst. Co., 902 Broadway, New York 10, N.Y.—M
 Kings Electronics Co., 40 Marbledale Rd., Tuckahoe, N.Y.—B,Q
 Kurman Electric Co., 35-18 37 St., Long Island City, 1, N.Y.—A.B.D.E.F.G.H.I.J.K.M., N.O.P.Q.R.S.T.U.V.W.X.Y.Z.AA, AB, AC, AD, AG
 Leach Relay Co., 5915 Avalon Blvd., Los Angeles 3, Calif.—I,J,K,N,P,Q,V,A.C.A.D
 Lektra Laboratories, Inc., 154 11th Ave., New York 11, N.Y.—W
 Lumenite Electronic Co., 407 S. Dearborn St., Chicago 5, Ill.—A,F,W
 Lyman Electronic Corp., 12 Cass St., Springfield, Mass.—Q

ELECTRONIC INDUSTRIES DIRECTORY

Lysco Mfg. Co., 1401 Clinton St., Hoboken, N.J.—H
 Mag-Electric Products, 14405 Crenshaw Ave., Gardiner, Calif.—N,X
 Magnex Corp., 90-23 Van Wyck Expressway, Jamaica 18, N.Y.
 Mack Electric Devices Inc., 48 Glenside Ave., Wyncote, Pa.—L,P,Y,A,B,A,C
Magnecraft Electric Co., 1450 W. Van Buren, Chicago 7, Ill.—D,E,J,K,M,N,Q,U,V,W,X,Y, AC,AD
 Mattson-Cowley Corp., 1487 Lincoln Ave., Pasadena 3, Calif.—O
MENDELSONN SPEEDGUN CO., 4th Ave., Haskell, N.J.—B
 Mercury Contacts, P.O. Box 615, Far Hills Station, Dayton 9, Ohio.—L
 Mercury Mfg. Corp., 45 Brown St., Buffalo 11, N.Y.—H,I,J,Y,AH
 Minneapolis-Honeywell Regulator Co., Minneapolis 8, Minn.—L,M
 Mullenbach Electrical Mfg. Co., 2300 E. 27 St., Los Angeles 58, Calif.—A,AD
 Multi-Tron Laboratory, 4624 W. Washington Blvd., Chicago 44, Ill.—H
 Munston Mfg. & Service, Beech St., Islip, N.Y.—Q,Y
 NAER Corp., 11777 Santa Monica Blvd., W. Los Angeles 25, Calif.—Y
NEOMATIC INC., 9010 Bellanca Ave., Los Angeles 45, Calif.—A.F.G.H.I.K.M.N.O.P,U, W,X,Z,A,C.A.D
 New York Coil Co., Phoenixville, Pa.—F,A,B, AD
 North Electric Mfg. Co., S. Market St., Galion, Ohio.—D, E, G, I, J, K, M, N, O, R, T, U, V, W, AA, AC, AD, AG
 Oak Mfg. Co., 1260 Clybourn Ave., Chicago 10, Ill.—R,T
OGDEN COIL & TRANSFORMER CO., 2124 W. Carroll Ave., Chicago 12, Ill.—AB
 Parts Producing Corp., 1861 Second Ave., New York 28, N.Y.—O,V
 Penta Labs., Inc., 216 N. Milpas St., Santa Barbara, Calif.—Y
 Peschel Electronics, Inc., 13 Garden St., New Rochelle, N.Y.—F
 Peters Co., O. S., 1553 N.Y. Ave., N.E., Washington 2, D.C.—F
 Petroff, Peter A., 127 Water St., New York 5, N.Y.—B
PHAOSTRON CO., 151 Pasadena Ave., S. Pasadena, Calif. F, G, I, J, K, M, N, P, T, U, V, W, X, AB, AC
 Phila. Scientific Glass Co., 4 Eckard Ave., Abington, Penna.—F,L,P
 Phillips Control Corp., Div. Thor Corp., 84 W. Jefferson St., Joliet Ill.—F,L,P,U,V,A,B, AC
 Photobell Co., 116 Nassau St., New York 38, N.Y.—A,F,W,A,E
 Pioneer Electronics Corp., 2235 S. Carmelina, W. Los Angeles 64, Calif.—H,I,Y,A,C
 Potter & Brumfield, Princeton, Ind.—H,I,J,K, M,P,U,V,A.C.A.D
 Price Electric Corp., 153 Church St., Frederick, Md.—B, H, K, M, N, P, Q, R, S, T, U, V, W, X, AA, AB, AC, AD
 P S P Engineering Co., 8420 Otis St., South Gate, Calif.—AB
 R-B-M Division, Essex Wire Corp., 131 Godfrey, Loganport, Ind.—F,K,M,V,A.C.A.D
RADIO CORP. OF AMERICA, RCA TUBE DEPT., 415 S. Fifth St., Harrison, N.J.—AC
RAYTHEON MFG. CO., Receiving Tube Div., 55 Chapel St., Newton 58, Mass.—D
 Research Electronics Labs., Roslyn, Pa.—F,L, Rhodes, Inc., M. H., 30 Bartholomew Ave., Hartford 6, Conn.—W
 Rich Electronics Inc., 212 N.W. 8 Ave., Miami 36 Fla.—H,Q
 Roesch Co., D. J., 220 S. Figueroa St., Los Angeles 7, Calif.—I,P
 Roflan Co., Topsfield, Mass.—Q
 Safe Flight Instrument Corp., 4 Water St., White Plains, N.Y.—O,R
 Servo-Tex Products Co., 1086 Goffie Rd., Hawthorne, N.J.—F
 Sightmaster Corp., 111 Cedar St., New Rochelle, N.Y.—F,O
 Signal Eng'g & Mfg. Co., Long Branch, N.J.—B,J,K,O.P,U,V,W,A,C
 Smith Mfg. Co., Nathan, 105 Pasadena Ave., S. Pasadena, Calif.—AB
 Standard Coil Products Co., 2329 N. Pulaski Rd., Chicago 39, Ill.—W,A,B
 Standard Electrical Products Co., 2240 E. Third St., Dayton 3, Ohio.—E,H,J,K,L,M,N, P,V,W,A.C.A.D,A.E,A,F
 Sterling Eng'g. Co., 54 Mill St., Laconia, N.H.—P,T,V,A.C.A.D
 Stevens-Arnold, Inc., 22 Elkins St., S. Boston 27, Mass.—G,J,O
 Stromberg-Carlson Co., Rochester 3, N.Y.—V
 Struthers-Dunn, Inc., Pitman, N.J.—B,E,H,I, J.K.L.M.P.S.T,U,W,A,C,A,E

Technicraft Labs. Inc., Thomaston-Waterbury Rd., Thomaston, Conn.
 Telectro Industries Corp., 35-16 37 St., Long Island City 1, N.Y.
 Terado Co., 1068 Raymond Ave., St. Paul 14, Minn.—U,AD
 Thermo Instruments Co., 1310 Old County Rd., Belmont, Calif.—A,F,AD
 Thompson Clock, H. C., 38 Federal St., Bristol, Conn.—F,G,I,K,O,P,S,T,U,V,W,A,B
 Timetrol Co., 2919 Gladstone Ave., Rockford 11, Ill.—W
 Transelectric Mfg. Co., P.O. Box 151, Oxford, Pa.—V
 Transvision, Inc., New Rochelle, N.Y.—AB
 Tri-Dex Co., Box 1207, Lindsay, Calif.—AB
TUNG-SOL ELECTRIC INC., 95 8th Ave., Newark 4, N.J.—M,W,A,C
 Ulanet Co., George, 413 Market St., Newark 5, N.J.—A,E,A,F
 Union Switch & Signal, 1789 Braddock Ave., Pittsburgh 18, Pa.—I,K,O,R,U,AC
 U.S. Relay Co., 1744 Albion St., Los Angeles 31, Calif.—F,H,J,K,M,N,P,Q,U,AC,A,D,A,E
 Varo Mfg. Co., 1801 Walnut St., Garland, Tex.—F,G,N,Y
 Vokar Corp., Huron River Dr., Dexter, Mich.—F,J,K,P
VICTOREEN INSTRUMENT CO., 3800 Perkins Ave., Cleveland 14, Ohio—W
WARD LEONARD ELECTRIC CO., 115 Mac-Quessen Pkwy., S. Mount Vernon, N.Y.—J,K,M,N,P,Q,W,X,A,B
 Welch Electric Co., 1221 Wade St., Cincinnati 14, Ohio—D,E,O,P,R,A,C
 Weltronic Co., 19500 W. 8 Mile Rd., Detroit 19, Mich.—F
 Westinghouse Electric Corp., Box 868, Pittsburgh 30, Pa.—E,G,H,I,K,M,N,O,P,S,T,W,X, AE
WESTON ELECTRICAL INSTRUMENT CORP., 614 Frelinghuysen Ave., Newark 5, N.J.—P,T,V,W
 Wheaton Co., T. C., Millville, N.J.—U,AC
 Wilson & Co., G. C., 2 No. Passaic Ave., Chatham, N.J.—W
 Winslow Co., 9 Liberty, Newark 5, N.J.—R
 Yellow Springs Instrument Co., Box 106, Yellow Springs, Ohio—AH

77—RESISTORS & VOLUME CONTROLS

Attenuators, precision	Q
Potentiometers, composition	R
Potentiometers, precision	S
Potentiometers, slide wire	T
Potentiometers, wire-wound	U
Resistors, boroncarbon	A
Resistors, decade	B
Resistors, deposited-carbon	C
Resistors, film	D
Resistors, fixed composition	E
Resistors, fixed wire-wound	F
Resistors, fuse	V
Resistors, industrial fixed	G
Resistors, negative temperature coefficient	H
Resistors, plug-in tube	I
Resistors, precision	J
Resistors, printed circuit	W
Resistors, subminiature	K
Resistors, tape	X
Resistors, variable	L
Rheostats, power	V
Suppressors	M
Thermistors	N
Varistors	Q
Volume controls	P

Ace Coil & Electronics Co., 914 Middlesex Ave., Metuchen, N.J.—F
 Acme Electric Heating Co., 1217 Washington St., Boston 18, Mass.—F
AEROVOX CORP., 740 Belleville Ave., New Bedford, Mass.—A,C,D,E,F,J,K
 Airborne Instruments Laboratory, 160 Old Country Rd., Mineola, L.I., N.Y.—Q
 Allen-Bradley Co., 1326 S. 2nd St., Milwaukee 4, Wisc.—E,G,K,L,P,R,V
 Amalgamated Electronics, Clinton Corners, N.Y.—J,S,U
 American Barrograph Corp., 599 Sackett St., Brooklyn 17, N.Y.—K,W
AMERICAN LAVA CORP., Cherokee Blvd., & Mfrs. Rd., Chattanooga 5, Tenn.—A,C
 American Radio Co., 445 Park Ave., New York 22, N.Y.—N
 Anchor Electronics, Inc., 717 Sip St., Union City, N.J.—F,J
 Applegate & Co., C. J., 1816 Grove St., Boulder, Colo.—E
 Arma Corp., Roosevelt Field, Garden City, N.Y.—J,S,U
Arnhold Ceramics, Inc., 1 E. 57 St., New York 22, N.Y.—C,D,H,J,K
 Atlas Resistor Co., 24 E. Coulter St., Philadelphia 44, Pa.—F,L
 Avor Corp., 450 Broome St., New York 18, N.Y.—F,J,K

Malco Research Labs., 49 Edison Pl., Newark 2, N.J.—D,J
 Matsen Electronics Corp., J. A., 1031 S. 27 St., Omaha, Neb.—F
 Maystone Watch Tool Co., 20-02 Utopia Pkwy., Whitestone 57, N.Y.—K
 Team Instruments Corp., 350 5th Ave., New York 1, N.Y.—S,U
 Berkshire Labs., 586 Beaver Pond Rd., Lincoln, Mass.—I
 Middle Co., 1316 Arch St., Phila. 7, Pa.—V
 Arklan Corp., 200 E. 3, Mt. Vernon, N.Y.—S
 Bond Electronics Corp., 60 Springfield Ave., Springfield, N.J.—F,G,J,K
 ORG EQUIPMENT DIV. GEO. W. BORG CORP., 120 S. Main St., Janesville, Wisc.—S
 BOURNS LABS., 6135 Magnolia Ave., Riverside, Calif.—H,K,L,S,U
 BRADLEY LABORATORIES INC., 168 Columbus Ave., New Haven, Conn.—O
 Brown Electro-Measurement Corp., 4635 S.E. Hawthorne Blvd., Portland 15, Ore.—B,F,J,T,S,U
 Calidyne Co., 120 Cross St., Winchester, Mass.—S
 Camburn, Inc., 32-40 57th St., Woodside 77, N.Y.—M
 Campbell Industries Inc., 3806 St. Elmo Ave., Chattanooga 9, Tenn.—B,C,D,G,H,J,K
 Carborundum Co., Global Div., Hyde Park Blvd., Niagara Falls, N.Y.—E,G,H,K,M,N,O
 Carol Electronics Corp., 141 E. 25 St., New York 10, N.Y.—F,J
 Carter Parts Co., 213 Institute Pl., Chicago 10, Ill.—F,P,Q,S,U
 CENTRALAB. DIV. GLOBE-UNION, INC., 900 E. Keefe Ave., Milwaukee 1, Wisc.—E,K,I,P,R,U,W
 Central Scientific Co., 1700 Irving Park Rd., Chicago 13, Ill.—L
 Centronics Corp., 21-04 122 St., College Point 56, N.Y.—W
 Ceramic Heater Cathode Register Co., 20 1 Street, Keyport, N.J.—H,J,K
 Chase Resistor Co., 9 River St., Morristown, N.J.—B,C,D,J,K
 CHICAGO TELEPHONE SUPPLY CORP., 1142 W. Beardsley Ave., Elkhart, Ind.—J,K,L,P,R,S,T,U,W
 Cima Corp., 119 Braintree St., Allston, Mass.—F,J,K,L
 CINEMA ENG'G. CO., DIV. AEROVOX CORP., 1100 Chestnut St., Burbank, Calif.—B,F,J,L,Q,S,U
 CLAROSTAT MFG. CO., Washington St., Dover, N.H.—F,G,I,J,K,L,P,Q,R,S,U,V,Y
 Coilcraft, Inc., Jandus Rd., Cary, Ill.—F,J
 Coil Winders Inc., 100 New York Ave., Westbury, L.I., N.Y.—M,T
 Columbia Resistors Inc., 23 W. Washington Ave., Pearl River, N.Y.—F,G,L,M,O
 Colvin Labs., 12 Court St., Morristown, N.J.—S,U
 Computer Instruments Co., 1964 Utica Ave., Brooklyn 34, N.Y.—C,R,S
 CONTINENTAL CARBON INC., 13900 Lorain Ave., Cleveland 11, Ohio—D,E,F,J,M
 Cornell Electronics Corp., 40 Main Ave., Douglaston, N.Y.—Q,U
 CORNING GLASS WORKS, P.O. Box 544, Corning, N.Y.—D,J
 Cutler-Hammer, Inc., 436 N. 12 St., Milwaukee 1 Wisc.—G,V
 DALE PRODUCTS INC., Box 1, Columbus, Nebr.—C,D,F,G,J,K
 Daven Co., 191 Central Ave., Newark 4, N.J.—B,F,G,J,K,L,P,Q,S,T,U
 DEJUR AMSCO CORP., 45-01 Northern Blvd., Long Island City 1, N.Y.—F,J,S,U,V
 DeWitt Development Co., 3008 W. 127th St., Blue Island, Ill.—K
 Eastern Precision Resistor Corp., 130-11 90th Ave., Richmond Hill 18, N.Y.—B,F,H,J,K,Q
 ELECTRA MFG. CO., 253 Madison Ave., Kansas City, Mo.—C,D,J
 Electric Controller & Mfg. Co., 2700 E. 79th St., Cleveland 4, Ohio—G
 Electro Eng'g. Products Co., 609 W. Lake St., Chicago 10, Ill.—A,F
 Electro-Measurements, Inc., 4312 S.E. Stark St., Portland 15, Ore.—S,T
 Electro-Mec Lab. Inc., 21-09 43rd Ave., Long Island City 1, N.Y.—B,F,H,J,L,S,U
 Electronics of Colo., 1026 S. Tejon St., Colorado Springs, Colo.—D,J
 Electron-Radar Products, 1041 N. Pulaski Rd., Chicago 51, Ill.—D,F,N,Q
 Electro-Sound Corp., 115 Halleck St., Boston, Mass.—U
 Electro-Tech Equip. Co., 308 Canal St., New York, N.Y.—G,L,V
 Ele Resistor Corp., 644 W. 12 St., Erie 6, Pa.—C,G,J,M,V,W
 AIRCHILD CAMERA & INSTRUMENT CORP., POTENTIOMETER DIV., 225 Park Ave., Hicksville, N.Y.—S
 Eproxcube Corp. of America, Saugerties, N.Y.—N
 Melly Amplifier Co., 703 Willow St., Chicago 14, Ill.—B
 Ford Eng'g., 129 E. A. St., Upland, Calif.—S,U
 FRIEZ INSTRUMENT DIV., BENDIX AVIATION CORP., 1454 Taylor Ave., Baltimore 4, Md.—O
 Electronics Inc., 2607 E. Foothill Blvd., Pasadena 8, Calif.—L,S,U
 Fremwell, Newton Uppers Falls 64, Mass.—S
 GENERAL ELECTRIC CO., Carbonyl Dept., 1177 E. 8 Mile Rd., Detroit 32, Mich.—N

GENERAL ELECTRIC CO., Apparatus Div., 1 River Rd., Schenectady 5, N.Y.—F,J,N,O,P,K,V
 GENERAL ELECTRIC CO., Broadcast Equip. & Commercial Equip. Div., Electronics Park, Syracuse, N.Y.—F
 GENERAL RADIO CO., 275 Mass. Ave., Cambridge 39, Mass.—B,F,J,L,Q,S,U
 GIANNINI & CO., G. M., 914 E. Green St., Pasadena 1, Calif.—S,T,U
 Glenco Corp., Durham Ave., Metuchen, N.J.—K,W
 Gray Instrument Co., 64 W. Johnson St., Philadelphia 44, Pa.—J,S,T
 Gulton Mfg. Corp., 212 Durham Ave., Metuchen, N.J.—C,K,W
 Gyromechanisms, Inc., Halesite, L.I., N.Y.—S
 Hamilton-Hall Mfg. Co., 227 N. Water St., Milwaukee, Wisc.—F,V
 Hardwick Hindle, Inc., 40 Hermon St., Newark 5, N.J.—F,L,U,V
 HELIPOT CORP., 916 S. Meridian Ave., S. Pasadena, Calif.—F,J,L,S,T,U
 Herlec Corp., 6th & Beech St., Grafton 1, Wisc.—W
 HI-Q DIV. AEROVOX CORP., Olean, N.Y.—A,B,C,F,Q,V
 Hycor Co., 11423 Vanowen St., N. Hollywood, Calif.—B,E,F,V
 Instrument Resistors Co., 1036 Commerce St., Union, N.J.—F,J,K
 Insuline Corp. of America, 186 Granite St., Manchester, N.H.—F,M
 INTERNATIONAL RESISTANCE CO., 401 N. Broad St., Philadelphia 8, Pa.—A,C,D,E,F,G,J,K,O,P,R,U,W
 I-T-E Circuit Breaker Co., 19 & Hamilton Sts., Philadelphia 30, Pa.—A,F,G,J,K,Y
 Janco Corp., 311 Winona Ave., Burbank, Calif.—J
 Jarvis Electronics Corp., 6058 Fullerton Ave., Chicago 39, Ill.—S,T,U
 Javex, P. O. Box 646, Redlands, Calif.—W
 JFD Mfg. Co., 6101 16th Ave., Brooklyn 4, N.Y.—M
 Keystone Carbon Co., 1935 State St., St. Marys, Pa.—H,N
 K-F Development Co., 2606 Spring St., Redwood City, Calif.—F,J,L,S,U
 Kings Electronics Co., 40 Marbledale Rd., Tuckahoe, N.Y.—Q
 Lectrohm Inc., 5560 Northwest Hwy., Chicago 30, Ill.—G,L,V,W
 Link Aviation, Inc., Binghamton, N.Y.—S,U
 Litton Industries, 336 N. Foothill Rd., Beverly Hills, Calif.—D,J
 MALLORY & CO. P. R., 3029 E. Washington St., Indianapolis 6, Ind.—F,L,P,R,U,V
 Markite Corp., 155 Waverly Pl., New York 14, N.Y.—L,R,S
 Marma Electronic Co., 703 Willow St., Chicago 14, Ill.—B
 Mepco, Inc., 37 Abnett Ave., Morristown, N.J.—C,D,F,H,J,K
 Micro-Circuits Co., New Buffalo, Mich.—N,W
 Micromax Co., 1964 Utica Ave., Brooklyn 34, N.Y.—Q,R,S
 Miller Electro-Research Labs., 5529 S. 5th St., Milwaukee 7, Wisc.—J,N
 Milwaukee Resistor Co., 700 W. Virginia St., Milwaukee 4, Wisc.—F,G,L,Y
 Model Eng'g. & Mfg., 2800 N. Milwaukee Ave., Chicago 18, Ill.—F,G,I,L,M,U,V,Y
 Monson Corp., 919 N. Michigan Ave., Chicago, Ill.—C,J,L,U
 Mullenbach Electrical Mfg., 2300 E. 27th St., Los Angeles 58, Calif.—F,G
 Muter Co., 1255 S. Michigan Ave., Chicago 5, Ill.—F,I,N,S,U
 Nassau Research & Dev'l Associates, 66 Main St., Mineola, N.Y.—N
 National Electronic Mfg. Corp., 42-08 Vernon Blvd., Long Island City 1, N.Y.—M
 Neptune Electronics Co., 433 Broadway, New York 13, N.Y.—E,G,L,P,R,U,V
 Ohio Carbon Co., 12508 Berea Rd., Cleveland 1, Ohio—E,F,H,I,M
 Ohmite Mfg. Co., 3601 Howard St., Skokie, Ill.—B,E,F,G,J,L,M,P,R,T,U,V
 Ohmweve Co., 43 Darcy, W. Hartford, Conn.—F
 Olympic Devel. Div., Olympic Radio & TV Corp., 30 Commerce Rd., Stamford, Conn.—N
 Onondaga Pottery Co., 1858 W. Fayette St., Syracuse 1, N.Y.—W
 PHAOSTRON CO., 151 Pasadena Ave., S. Pasadena, Calif.—B,C,F,J
 Philadelphia Electronics, 24 E. Coulter St., Philadelphia 44, Pa.—F,L
 PHILCO CORP., Accessory Div., "A" & Allegheny Ave., Philadelphia 34, Pa.—C,D,E,F,I,P,R,U
 PHOTOCIRCUITS CORP., Glen Cove, N.Y.—W
 Pico Instruments & Controls Corp., 3593 Hayden Ave., Culver City, Calif.—R,S,T,U,W
 Plastics & Electronics Co. Inc., 272 Northland Ave., Buffalo 8, N.Y.—K,W
 POLYTECHNIC RESEARCH & DEVELOPMENT CO., 202 Tillary St., Brooklyn 1, N.Y.—Q
 Precision Potentiometers Corp., 1243 W. Pico Blvd., Los Angeles 15, Calif.—S,T,U
 Precision Resistor Co., 108 US Highway 22, Hillside 5, N.J.—B,F,G,J,K
 Rattray & Co., George, 116-08 Myrtle Ave., Richmond Hill, N.Y.—S,U
 Rawson Electrical Instrument Co., 117 Potter St., Cambridge 42, Mass.—U

Reon Resistor Corp., 117 Stanley Ave., Yonkers, N.Y.—F,G,H,J
 Research Instrument Co., 233 Broadway, New York 7, N.Y.—F,G,J,L,Q,T,U
 RESISCO CORP., 366 Broadway, New York, N.Y.—E,R
 RESISTANCE PRODUCTS CO., 714 Race St., Harrisburg, Pa.—D,I,J,K
 Resistors, Inc., 5226 W. 26 St., Cicero, Ill.—F
 Rex Rheostat Co., 3 Foxhurst Rd., Baldwin, L.I., N.Y.—F,V
 Rubicon Co., Ridge Ave. at 35th St., Philadelphia 32, Pa.—R,F,G,J,S,T,U
 Ruckelshaus Labs. Inc., John G., 110 Pomeroy Rd., Madison, N.J.—D,W
 Sanders Associates, 137 Canal St., Nashua, N.H.—S,W,X
 Schwien Eng'g. Co., 16217 Lindberg St., Van Nuys, Calif.—S,U
 Sensitive Research Instrument Corp., 9 Elm Ave., Mt. Vernon, N.Y.—F,J
 Servo Corp. of America, 20-20 Jericho Turnpike, New Hyde Park, N.Y.—N
 Servotrol Co., 114 W. Illinois St., Chicago 10, Ill.—S,U
 SHALLCROSS MFG. CO., 520 Pusey Ave., Collingdale, Pa.—A,B,F,G,H,J,K,Q,U,V
 SPEER RESISTOR DIV., SPEER CARBON CO., St. Marys, Pa.—E
 SPRAGUE ELECTRIC CO., 233 Marshall St., No. Adams, Mass.—A,D,F,J,K,N,W
 STACKPOLE CARBON CO., St. Marys, Pa.—F,G,L,P,R
 STUPAKOFF CERAMIC & MFG. CO., Latrobe, Pa.—H,N,W
 Supreme Inc., Greenwood, Miss.—F
 Symphony Radio Corp., 925 Southwestern Ave., Los Angeles 6, Calif.—E,P,R,U
 Tech Laboratories Inc., Bergen & Edsall Bldgs., Palisades Park, N.J.—H,L,P,Q,S,U
 TECHNOLOGY INSTRUMENT CORP., 531 Main St., Acton, Mass.—S,T,U
 Tech-Ohm Resistor Corp., 200-15 32 Ave., Bay-side, L.I., N.Y.—F
 Teleview Labs., 100 Metropolitan Ave., Brooklyn 11, N.Y.—K
 Thompson Clock Co., H. C., 38 Federal St., Bristol, Conn.—B,F,G,I,K,L,R,S,T,U
 Tru-Ohm Products, Div. Model Eng'g. & Mfg. Co., 2800 N. Milwaukee Ave., Chicago 18, Ill.—F,L,T,U,V
 U.M. & F. MFG. CORP., 10929 Van Owen St., N. Hollywood, Calif.—J,S
 Union Switch & Signal Co., 1789 Braddock Ave., Pittsburgh 18, Pa.—O
 U.S. Electronics Corp., 275 Warren St., Lyndhurst, N.J.—F
 Van Dyke Instruments, 1927 First Ave. S., St. Petersburg, Fla.—S,U
 VECTRON, INC., 400 Main St., Waltham 54, Mass.—L,S,U
 VICTOREN INSTRUMENT CO., 3800 Perkins Ave., Cleveland 14, Ohio—C,J,K
 VICTORY ENG'G. CORP., Springfield Rd., Union, N.J.—N,O
 Vokar Corp., Dexter, Mich.—F,H,K
 WARD LEONARD ELECTRIC CO., 115 McQueen Pkwy. So., Mount Vernon, N.Y.—F,G,I,Q,U,V
 Washington Institute of Technology, 4810 Calvert Rd., College Park, Md.—N
 Waters Mfg. Co., 4 Gordon St., Waltham 54, Mass.—S,U
 Western Radiation Lab., 1107 W. 24 St., Los Angeles 7, Calif.—A
 WHITE DENTAL MFG. CO., S. S., 10 E. 40th St., New York 16, N.Y.—E,G,H,J
 Wilkor Div., Aerovox Corp., 2882 Detroit Ave., Cleveland 13, Ohio—A,C,D,F,H,J
 Winslow Co., 9 Liberty St., Newark 5, N.J.—J,L,S,U
 Wirt Co., 5221 Greene St., Philadelphia 44, Pa.—F,L,P,U
 Workman TV Inc., 309 Queen Anne Rd., Teaneck, N.J.—C
 Wright Eng'g. Co., 180 E. California St., Pasadena 1, Calif.—U
 Yonkers Industries, Inc., 28-30 School St., Yonkers, N.Y.—J
 Zenith Optical Lab., 1940 Great Neck Rd., Copiague, L.I., N.Y.—D

78—SEMI-CONDUCTORS

Diodes, germanium A
 Diodes, silicon B
 Transistors, junction D
 Transistors, point contact F
 Transistors, tetrode F

Allied Research & Eng'g., 1041 N. Los Palmas Ave., Hollywood 31, Calif.—C
 AMPEREX ELECTRONIC CORP., 230 Duffy Ave., Hicksville, L.I., N.Y.—A,D,E
 Barry Electronics Corp., 136 Liberty St., New York 6, N.Y.—A,C
 BERKSHIRE LABS., 586 Beaver Pond Rd., Lincoln, Mass.—A
 Bomac Labs. Inc., Salem Rd., Beverly, Mass.—A,B
 BRADLEY LABORATORIES INC., 168 Columbus Ave., New Haven, Conn.—A
 Bram Chemical Co., #20 65th Ave., Philadelphia 26, Pa.—A,B
 CBS-HYTRON, INC., 100 Endicott St., Danvers, Mass.—A,B,D,E

ELECTRONIC INDUSTRIES DIRECTORY

Eagle-Picher, American Bldg., Cincinnati, Ohio—A

Federal Electric Corp., 6446 Santa Monica Blvd., Los Angeles 38, Calif.—A,D,E

FEDERAL TELEPHONE & RADIO CO., DIV. I.T.&T., 100 Kingsland Rd., Clifton, N.J.—A,B

Fretco Inc., 406 N. Craig St., Pittsburgh 13, Pa.—A,D

Gates Electric Co., 65 W. Broadway, New York, N.Y.—B

GENERAL ELECTRIC CO., Apparatus Div., 1 River Rd., Schenectady, N.Y.—A,C

GENERAL ELECTRIC CO., Broadcast Equip. & Commercial Equip. Div., Electronics Park, Syracuse, N.Y.—A,D,E

GENERAL R-F FITTINGS CO., 702 Beacon St., Boston 15, Mass.—A

Germanium Products Corp., Div., Radio Dev. & Research, 26 Cornelison Ave., Jersey City 4, N.J.—A,D,E,F

Hydro-Aire, Inc., 3000 Winona Ave., Burbank, Calif.—D,E

INTERNATIONAL RECTIFIER CORP., 1521 E. Grand Ave., El Segundo, Calif.—A,E

Kemtron Electron Products, Inc., 23 Brown St., Salem, Mass.—A,B,C

Mackay Inc., A. D., 198 Broadway, New York 38, N.Y.—A,B,D,E

MICROWAVE ASSOCIATES, 22 Cummington St., Boston 15, Mass.—B

Minneapolis-Honeywell Regulator Co., Minneapolis 8, Minn.—A,D

Monson Corp., 919 N. Michigan Ave., Chicago 11, Ill.—A

National Union Radio Corp., Jacksonville Rd., Hatboro, Pa.—A,D,E

PHILCO CORP.—Accessory Div., "A" & Allegheny Ave., Philadelphia 34, Pa.—A,B

PHILCO CORP., Gov't & Industrial Div., 4700 Wisahickon Ave., Philadelphia 44, Pa.—D

RADIO CORP. OF AMERICA, Tube Div., 415 S. 5th St., Harrison, N.J.—A,D,E

Radio Devel. & Research Corp., Germanium Products Corp. Div., 26 Cornelison Ave., Jersey City 4, N.J.—D

RADIO RECEPTOR CO., 251 W. 19 St., New York 11, N.Y.—A,D,E

RAYTHEON MFG. CO., RECEIVING TUBE DIV., 55 Chapel St., Newton 58, Mass.—A,B,D,E

RAYTHEON MFG. CO., 100 River St., Waltham 54, Mass.—D

Standard Tele. & Cables, Ltd., Connaught House, Aldwych, London W. C. 2, England—A,C

STUPAKOFF CERAMIC & MFG. CO., Latrobe, Pa.—D

SYLVANIA ELECTRIC PRODUCTS, 1740 Broadway, New York 19, N.Y.—A,B,D,E

Teletronics Laboratory, 54 Kinkel St., Westbury, L.I., N.Y.—C

TEXAS INSTRUMENTS INC., 6000 Lemmon Ave., Dallas, Texas—B,D,E,F

Transistor Products Inc., 55 Union St., Boston, Mass.—A,D,E

TUNG-SOL ELECTRIC INC., 95 8 Ave., Newark 4, N.J.—A,D,E

Western Electric, 120 Broadway, New York, N.Y.—C

Western Mfg. Co., 1400 W. 22nd St., Kearney, Nebr.—A,B

WESTINGHOUSE ELECTRIC CORP., Electronic Tube Div., Box 284, Elmira, N.Y.—A,B,C,D,E

Westinghouse Electric Corp., Box 868, Pittsburgh 30, Pa.—A,B,D,E

79—SERVICES, BROADCAST

- AM program packages A
- Audio design B
- Film, editing & titling C
- Film, magnetic stripe D
- Film processing E
- Film studios F
- Film, TV G
- Frequency measuring H
- Kinescoping I
- Libraries, film J
- Libraries, magnetic tape K
- Libraries, record L
- News services M
- Optical repairs N
- Recording Services O
- Sound dubbing P
- Sound effects Q
- Sound studios R
- Stylus resharpening S
- Tower erection & Maintenance T
- TV program packages U
- TV props & scenery V
- TV special effects W
- TV slides X
- Transcriptions Y
- Engineering—see list of consulting engineers

Academy Film Products, Inc., 123 W. Chestnut St., Chicago, Ill.—F,X

Acc Film Labs., 1277 E. 14 St., Brooklyn, N.Y.—E

Acme Camera Corp., 2704 W. Olive Ave., Burbank, Calif.—I

Adelphi Co., 33 Key St., Eastport, Me.—C,F,G,M,O,U

Aero Electronics Co., 1512 N. Wells St., Chicago 10, Ill.—B

Aeronautical Electronics, P.O. Box 6043, Raleigh, N.C.—H

Affiliated Photographic Co., 21 W. 45 St., New York 19, N.Y.—X

Air-Tone Sound & Recording Co., 1527 Chestnut St., Philadelphia 2, Pa.—O

Airtronix Development Corp., 20 W. 22 St., New York 10, N.Y.—B

Alexander Film Co., Alexander Film Bldg., Colorado Springs, Colo.—E,F

Allen & Allen Productions, 3947 W. 59th Pl., Los Angeles 43, Calif.—F

Alley Productions, Paul, 619 W. 54 St., New York 19, N.Y.—F

Allied Int'l Inc., 230 Park Ave., New York 17, N.Y.—B

Allison Mfg. Co., P.O. Box 6067, Phoenix, Ariz.—T

All-Scope Pictures Inc., 7525 Beverly Blvd., Hollywood 36, Calif.—F

Alpha Erection Corp., 508 Iowa State Bank Bldg., Iowa City, Iowa—T

ALTEC LANSING CORP., 9356 Santa Monica Blvd., Beverly Hills, Calif.—B

American National Video Productions, 17 N. Wabash Ave., Chicago 2, Ill.—F,U

Anton Productions Ltd., E. J., 60 W. 46 St., New York 36, N.Y.—F

Apex Film Corp., 1040 N. Las Palmas, Hollywood 38, Calif.—F

Apex Recording Studios, 119 W. 57 St., New York 19, N.Y.—O

Arizona Recording Productions, 834 N. 7 Ave., Phoenix, Ariz.—O

Atlas Film Corp., 111 South Blvd., Oak Park, Ill.—E,F,O

Audio Instrument Co., 133 W. 14 St., New York 11, N.Y.—P

Audio-Master Corp., 841 Madison Ave., New York 17, N.Y.—G,J,K,L,O,P,Q,Y

Audio Production, Inc., 630 9 Ave., New York 36, N.Y.—F

Aveco Productions, 218 E. Huron St., Chicago, Ill.—F,U

Background Engineers, 7313 Santa Monica Blvd., Hollywood 46, Calif. W,X

Barley Films, Inc., 6509 De Longpre Ave., Hollywood 28, Calif.—F,U

Barbre Motion Picture Productions, 1215 E. Virginia, Denver 9, Colo.—F

Basch Radio & TV Productions, 17 E. 45 St., New York 17, N.Y.—F

Becker Productions, V. S. 562 5 Ave., New York 36, N.Y.—U

Beeland-King Film Productions, 752 Spring St., N.W., Atlanta, Ga.—C,F,G,M,P,R,U,W

Bell & Howell Co., 7100 McCormick Rd., Chicago 45, Ill.—E

Bell Picture Corp., 630 9 Ave., New York 36, N.Y.—F

Bell Sound Systems, 555 Marion Rd., Columbus 7, Ohio—O

BERKELEY SCIENTIFIC, DIV. RECKMAN INSTRUMENTS, INC., 2200 Wright Ave., Richmond, Calif.—H

Berlant Associates, 4917 W. Jefferson Blvd., Los Angeles 16, Calif.—K,P

BERNDT-RACH, INC., Auricon Div., 7325 Beverly Blvd., Los Angeles 36, Calif.—I

Boulevard Recording Studio, 25 E. Jackson Blvd., Chicago 4, Ill.—O,P,Q,R,Y

Bowen & Co., 4712 Bethesda Ave., Bethesda, Md.—N

Bracken Productions, Inc., 8259 Beverly Blvd., Los Angeles 48, Calif.—F

Brandon Films, Inc., 1700 Broadway, New York 19, N.Y.—F

Brav Studios Inc., 729 7 Ave., New York 19, N.Y.—C,F,G,J,O

Bristol Eng'g. Corp., Lincoln & Pond Sta., Bristol, Pa.—B,A,B

British Information Services, Film Div., 30 Rockefeller Plaza, New York 20, N.Y.—F

Brown Radio Productions, Inc., 101 S. Meramee St., Louis 5, Mo.—O

Buhl Optical Co., 1009 Beech Ave., Pittsburgh 12, Pa.—N

Butterfield Productions, Allyn, 6823 Santa Monica Blvd., Los Angeles, Calif.—F

Byron, Inc., 1226 Wisconsin Ave., N.W., Washington 7, D.C.—F

Calbest Eng'g. & Electronics Co., 828 N. Highland Ave., Hollywood 38, Calif.—B,A,G

Calhoun Studios, 266 E. 78 St., New York, N.Y.—F

Calvin Co., 1105 Truman Rd., Kansas City 6, Mo.—F

CAMERA EQUIP. CO., 1600 Broadway, New York 19, N.Y.—N,O

CAMERA MART, 1845 Broadway, New York 23, N.Y.

Campbell Recording Co., 2114 Avon, Wichita 16, Kans.—O

Capital Film Service, 224 Abbott Rd., E. Lansing, Mich.—F

Capitol Records, Inc., 5515 Melrose Ave., Hollywood 38, Calif.—J,K,L,O,R

Caravel Films, Inc., 730 5 Ave., New York, N.Y.—F

CARGO-PACKERS, INC., 73 Rutledge St., Brooklyn 11, N.Y.

Caston Productions, 8611 Sunset Blvd., Hollywood, Calif.—F

Cathedral Films, Inc., 1970 Cahuenga Blvd., Hollywood 28, Calif.—F

CENTRALAB, DIV. GLOBE-UNION INC., 900 E. Keefe Ave., Milwaukee 1, Wisc.—B

Chicago Film Studios, Chicago Film Labs, Inc., 56 E. Superior St., Chicago 11, Ill.—I

Cinecolor Corp., 2800 W. Olive Ave., Burbank, Calif.—E

Cinecraft Productions, Inc., 2515 Franklin Ave., Cleveland 13, Ohio—E,F

Cinegraphics, Inc., 5 E. 57 St., New York 22, N.Y.—F

Cinemart, Inc., 322 E. 44 St., New York 17, N.Y.—F,X,Y

Cinematic Devel. & Cinechrome Lab., 2125 30 Ave., San Francisco, Calif.—F

Clark Crystal Co., 2 Farm Rd., Marlboro, Mass.—H

Colortone Electronics, 238 William St., New York 38, N.Y.—H

Columbia Pictures Corp., 1438 N. Gower St., Hollywood 28, Calif.—F

Commerce Pictures, 525 Poydras St., New Orleans, La.—F

Commercial Radio Monitoring Co., P.O. Box 7037, Kansas City, Mo.—H

Consolidated Film Industries, 1740 Broadway, New York 19, N.Y.—E

Consolidated Televisions, Inc., Sunset Blvd. at Van Ness, Hollywood, Calif.—F

Cook Labs., Inc., 114 Manhattan St., Stamford, Conn.—O

Crosby Enterprises Inc., Bing, 9030 Sunset Blvd., Los Angeles 46, Calif.—F

Damon Recording Studios Inc., 117 W. 14 St., Kansas City 6, Mo.—O,R

Daven Co., 191 Central Ave., Newark 4, N.J.—B

De Frenes Co., 1909 Buttonwood St., Philadelphia 30, Pa.—F,R

Dehoure Studios, 782 Commonwealth Ave., Boston 15, Mass.—F,O

de Rochemont Associates, Louis, 35 W. 45th St., New York 36, N.Y.—F

Diaton Co., 3327 Dixie Dr., Houston 21, Tex.—H

Dubois Co., Jean, 2214 Dahlia St., Denver 7, Colo.—F

Dubrow Devel. Co., 235 Penn St., Burlington, N.J.—R,H,R

Dudley Pictures Corp., 9908 Santa Monica Blvd., Beverly Hills, Calif.—F

DUMONT LABS, INC., ALLEN R., 750 Bloomfield Ave., Clifton, N.J.—G,J,U,Y

DUMONT LABS, INC., ALLEN R., TV Transmitter Div., 1500 Main Ave., Clifton, N.J.—F,G,I,R,U,V,W,X,Y

Dynamic Films, Inc., 112 W. 89 St., New York 24, N.Y.—F

Eastern Film Center, 1218 E. Chelton Ave., Philadelphia 18, Pa.—F

Eastern Precision Resistor Corp., 130-11 90 Ave., Richmond Hill 18, N.Y.—W

Eastman Kodak Lab., 1017 N. Las Palmas Ave., Los Angeles 38, Calif.—E

Eccles Recording, Inc., 6233 Hollywood Blvd., Hollywood 28, Calif.—O

Edited Pictures Systems, Inc., 165 W. 46 St., New York, N.Y.—F

E D L Co., 5929 E. Dunes Highway, Gary 1, Ind.—E

Edison Electronic Co., 1902 N. 3 St., Temple, Texas.—H

ELECTRICAL TOWER SERVICE, P.O. Box 1205, Peoria, Ill.—T

Electro Craft Inc., 68 Jackson St., Stamford, Conn.

Electronic Workshop, 26 W. 8 St., New York 11, N.Y.—B

Electro-Sound Corp., 115 Halleck St., Boston, Mass.—K,L,P,Q,Y

Electro-Vox Recording Studios, 5546 Melrose Ave., Hollywood 38, Calif.—O

Electronic Eng'g. Co., 362 W. Bowery St., Akron 7, Ohio—B,A,A,B,A,D

Electro-Technics, Inc., 198 Albion Ave., Paterson, N.J.—B

Electro Vision, 30-16 Crescent St., Long Island City 2, N.Y.—B,O

Elm Labs., 18 S. Broadway, Dobbs Ferry, N.Y.—B

Empire Broadcasting Corp., 480 Lexington Ave., New York 17, N.Y.—O

Empire State Labs., 2608 Merrick Rd., Bellmore, L.I., N.Y.—B

Equipment & Service Co., 6815 Oriole Dr., Dallas 9, Texas.—B

Estey Co., W., 6331 Hollywood Blvd., Hollywood 28, Calif.—F

Fairbanks Jerrv Inc., 6052 Sunset Blvd., Hollywood 28, Calif.—F

FAIRCHILD CAMERA & INSTRUMENTS Corp., Robbins Lane, Syosset, N.Y.—N

FAIRCHILD RECORDING EQUIP. CORP., 154 St. & 7 Ave., Whitestone, N.Y.—S

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amous Studios, 25 W. 45 St., New York, N.Y.—F
eler Eng'g. & Mfg. Co., 8026 No. Monticello Ave., Skokie, Ill.—B
aker Recording Service, Old Greenwich, Conn.—O
Jimack Corp., 1327 S. Wabash Ave., Chicago 6, Ill.—O
dm Arts Corp., 1032 N. 6th St., Milwaukee, Wisc.—F
dm Associates Inc., 4600 S. Dixie Ave., Dayton 9, Ohio—C,E,F,I,O,P,Q,R
ircraft Productions, 8451 Melrose Ave., Los Angeles 46, Calif.—F
dm Creations, Inc., 112 W. 89 St., New York 24, N.Y.—F
dm Makers, Inc., 322 E. 24 St., New York 10, N.Y.—F,U
dm Production Co., 4510 Excelsior Blvd., Minneapolis, Minn.—F
dm Research Associates, 150 E. 52 St., New York 22, N.Y.—G,J
dms for Industry, Inc., 135 W. 52 St., New York 19, N.Y.—F
dney Productions, Edward F., 6525 Sunset Blvd., Hollywood 28, Calif.—F
ory Films Inc., 205 Weymouth Dr., Rochester 10, N.Y.—F
rdham Productions, Fred. 34 W. 35 St., New York 1, N.Y.—F
reed Electronics & Controls Corp., 200 Hudson St., New York 13, N.Y.—B
ulton Recording Co., 60 W. 40 St., New York 18, N.Y.—O
ale Dorothea Mechanisms, 81-01 Broadway, Elmhurst, L.I., N.Y.—W
anz Co., W. J., 40 E. 49 St., New York 17, N.Y.—F
GATES RADIO CO., 123 Hampshire St., Quincy, Ill.—B
General Communications, P.O. Box 169, Fort Atkinson, Wisc.—B,W
ENERAL ELECTRIC CO., Broadcast Equip. & Commercial Equip. Div., Electronics Park, Syracuse, N.Y.—W
General Film Productions Corp., 141 E. 44 St., New York 17, N.Y.—F
General Picture Productions Inc., 621 6 Ave., Des Moines 9, Iowa—E,F,O
Goldwyn Productions, Samuel, Studio Div., 1041 N. Formosa Ave., Los Angeles 46, Calif.—F
Good News Productions, Chester Springs, Pa.—F
Gotham Audio Development, 2 W. 46 St., New York 36, N.Y.—B,O,P,Q,R,Y
GRAYBAR ELECTRIC CO., 420 Lexington Ave., New York 17, N.Y.—K
Gray-O'Reilly Studios, 480 Lexington Ave., New York 17, N.Y.—F
GRAY RESEARCH & DEVEL. CO., 658 Hilliard St., Manchester, Conn.—B
Greibach Research & Devel. Labs., 80 Pryor Terrace, New Rochelle, N.Y.—B
Haller, Raymond & Brown, 124 N. Atherton St., State College, Pa.—O
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HarFilms, Inc., 600 Baronne St., New Orleans, La.—F
Hartley Productions Inc., 20 W. 47 St., New York 36, N.Y.—F
Hawley-Lord, Inc., 61 W. 56 St., New York, N.Y.—F
HERMETIC SEAL PRODUCTS CO., 33 S. 6 St., Newark 7, N.J.—S
Hinde & Dauch, Sandusky, Ohio.
Hoffman Co., Michael, 489 5 Ave., New York 17, N.Y.—O,P
Houston Color Film Labs., 230 W. Olive St., Burbank, Calif.—E
Hughes & Phillips, 3300 N. San Fernando Blvd., Burbank, Calif.—T
Hurn Television Film Co., 60 W. 46 St., New York, N.Y.—F
Industrial Film Labs., 3333 Iowa Ave., New York 19, N.Y.—F
International Research Corp., 2221 Warwick Ave., Santa Monica, Calif.—B
l TV Film Productions, 331 Madison Ave., New York, N.Y.—F
nterstate TV Corp., 4376 Sunset Dr., Hollywood, Calif.—F
nhoie Electronics Labs., 14238 S. LaSalle St., Chicago 27, Ill.—H
arp Metal Products Co., 211 63 St., Brooklyn 20, N.Y.—E
ng Enterprises, Inc., John Reed, 55 W. 53 St., New York 19, N.Y.—F
ing Studio Inc., 601 N. Fairbanks St., Chicago 11, Ill.—F
ickerbocker Production, Inc., 1600 Broadway, New York 19, N.Y.—F
rb Eng'g. & Mfg. Co., 30 Ottawa Ave., Grandville, Mich.—D,O,P
vin Associates, Henry, P.O. Box 196, Meriden, Conn.—B
wis Associates, Lester, 11 E. 43 St., New York 17, N.Y.—F
etone Transcriptions, 3 Gilbert Court, Peoria 5, Ill.—O
Lips Co., Edwin A., 5485 W. Washington Blvd., Los Angeles 16, Calif.—O,S
ucke & Norling, 245 W. 55 St., New York 19, N.Y.—F
Lumar Associates, 1432 N. Carlisle St. Phila. 21, Pa.—B
Larty Picture Productions, 45 Stanley St., Buffalo 6, N.Y.—F
agnetic Recorder & Reproducer Corp., 1533 Cherry St., Philadelphia 2, Pa.—A,K,P,Y

Magnetic Sound, Inc., 4803 1/2 Grand Ave., Des Moines, Iowa—O
March of Time, 369 Lexington Ave., New York 17, N.Y.—F
Mauer Inc., J. A., 37-01 31 St., Long Island City 1, N.Y.—O,P
Metal Products Co., Craighead St., Nashville 4, Tenn.—A,B,F,P,R,U,Y
MGM Studios, 10202 Washington Blvd., Culver City, Calif.—F
Miller Electric Co., P.O. Box 1837, Jacksonville, Fla.—T
Modern Recording Studio, 55 W. Wacker Dr., Chicago 1, Ill.—F,O
Mohawk Business Machines Corp., 944 Halsey St., Brooklyn 37, N.Y.—B
Monitor Studios, Inc., 815 Fremont Ave., S. Pasadena, Calif.—H
Monogram Productions Inc., 4376 Sunset Dr., Hollywood 27, Calif.—F
Morrow Radio Mfg. Co., 2794 Market St., Salem, Ore.—B
Morton TV Productions, 360 N. Michigan Ave., Chicago 1, Ill.—F
Motion Picture Productions, Inc., 620 W. Superior Ave., Cleveland 13, Ohio—F
Motion Pictures for Television, 655 Madison Ave., New York, N.Y.—F
Movietone, Inc., 460 W. 54 St., New York 19, N.Y.—F
Musicolor, Inc., 840 N. Michigan Ave., Chicago, Ill.—G,V
Mutual TV Production Inc., 9134 Sunset Blvd., Hollywood, Calif.—F
Nassour Studio, 5746 Sunset Blvd., Hollywood 28, Calif.—F
National Cine Equip., Inc., 209 W. 48 St., New York, N.Y.—R
Neal Productions, Stanley, 45 Rockefeller Plaza, New York 20, N.Y.—F
Nemeth Studios, Ted., 729 7 Ave., New York 19, N.Y.—F
Neon Eng'g Labs., Radio Research Div., 172 Front St., Marietta, Ohio—C,E
Newsreel for Telenews, 630 9 Ave., New York, N.Y.—F
Northwest Motion Pictures, 1716 30 Ave., W., Seattle 99, Wash.—F
Nu-Art Films, Inc., 112 W. 48th St., New York 19, N.Y.—F
Oberline Ltd., 6411 Hollywood Blvd., Hollywood 28, Calif.—A,B,U
Official Films, Inc., 25 W. 45th St., New York 19, N.Y.—F
Orleans & Assoc., Inc., Sam, 211 W. Cumberland Ave., Knoxville 15, Tenn.—F
Orthor Corp., 196 Albion Ave., Paterson, N.J.—B
Pacific Universal Products Corp., 168 Vista Ave., Pasadena 8, Calif.—N
Packaged Programs Inc., 634 Penn Ave., Pittsburgh 22, Pa.—U
Palmer Films Inc., W.A., 611 Howard St., San Francisco 5, Calif.—F
Paragon Pictures, Inc., 2540 Eastwood Ave., Evanston, Ill.—F
Paramount News Lab., 544 W. 43rd St., New York 36, N.Y.—E
Paramount Pictures Corp., 34-54 35th St., Long Island City, N.Y.—E
Paramount TV Production, Inc., 127 S. Broadway, Los Angeles 31, Calif.—F
Parsons Productions, Inc., Lindsley, 5746 Sunset Blvd., Hollywood 28, Calif.—F
Pathe Industries, Inc., 6823 Santa Monica Blvd., Hollywood 38, Calif.—E,F
P C A Electronics Inc., 2180 Colorado Ave., Santa Monica, Calif.—B
Peerless Film Processing Corp., 959 Seward St., Hollywood 38, Calif.—E
Phoenix Precision Instrument Co., 3803 N. 5 St., Philadelphia 40, Pa.—N
Photo-Art Commercial Studios, 420 S.W. Washington St., Portland 4, Ore.—F
Physical Research Associates, 1761 Lincoln Blvd., Santa Monica, Calif.—B
Poinsettia Co., 112 Cedar Ave., Pitman 15, N.J.—O
Polaris Pictures, Inc., 5859 W. 3 St., Los Angeles 36, Calif.—F
Popper & Sons, 800 4 Ave., New York 10, N.Y.
Precision Electronics, 7518 Melrose Ave., Los Angeles 46, Calif.—B
Precision Film Labs., 21 W. 46 St., New York 36, N.Y.—E,F
Precision Products 719 7 St., N.W., Washington, D.C.—N
Princeton Film Center, Carter Rd., Princeton, N.J.—F
Productions On Film, Inc., 1515 Euclid Ave., Cleveland 15, Ohio—F
Pulse Techniques, Inc., 1411 Palisade Ave., West Englewood, N.J.—B
RADIO CORP. OF AMERICA, R C A VICTOR DIV., Front & Cooper St., Camden 2, N.J.—Z
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Ram Productions, 661 West End Ave., New York 25, N.Y.—A,F,U,Y
Rangertone, Inc., 73 Winthrop St., Newark 4, N.J.—B,C,G,O
Recorded Publications Labs., 1558 Pierce Ave., Camden 5, N.J.—R
Recording Associates, 14 Hillcrest Rd., E. Hartford 8, Conn.—R
Reevesound Co., 35-54 36 St., Long Island City 1, N.Y.—N
REEVES SOUND-CRAFT CORP., 10 E. 52 St., New York 22, N.Y.—C,D
Reves Sound Studios, Inc., 304 E. 44 St., New York 17, N.Y.—F

Regal TV Pictures Corp., 151 W. 48 St., New York 36, N.Y.—F
Regency Productions, Inc., 112 W. 48th St., New York 19, N.Y.—F
Remler Co., 2101 Bryant St., San Francisco 10, Calif.—B
Republic Productions Inc., 4024 Radford Ave., N. Hollywood, Calif.—F
Republic Radio & TV Features, 64 E. Lake St., Chicago, Ill.—F
RESISCO CORP., 366 Broadway, New York 18, N.Y.
Riethof Productions, Inc., 59 E. 79 St., New York, N.Y.—A,C,F,G,P,U
RKO-Pathé, Inc., 105 E. 106 St., New York, N.Y.—F
Roach Studios, Inc., Hal, 8822 Washington Blvd., Culver City, Calif.—F
Robinson Recording Labs., 35 S. 9 St., Philadelphia 7, Pa.—O,P,Q,R,Y
Rocket Pictures, Inc., 6108 Santa Monica Blvd., Hollywood 38, Calif.—F
Rolab Studios, Walnut Tree Hill, Sandy Hook, Conn.—A,C,F,G,N,O,P,Q,R,U,V,W,X,Y
Ross Roy, Inc., 2751 E. Jefferson St., Detroit 7, Mich.—O
Rowe Industries, 1702 Wayne St., Toledo 9, Ohio—B
Rust Industrial Co., 608 Willow St., Manchester, N.H.—B
Sarra, Inc., 200 E. 56 St., New York, N.Y.—E
Seaboard Studios, Inc., 157 E. 62 St., New York 21, N.Y.—F,O,R
Showcase Productions Inc., Hal Roach Studios, Culver City, Calif.—F
SHALLCROSS MFG. CO., 520 Pusey Ave., Collingdale, Pa.—B
Shrader Mfg. Co., 2803 M. St., N.W., Washington 7, D.C.—B
Simpson Mfg. Co., Mark, 32-38 49 St., Long Island City 3, N.Y.—O
Skiho Productions, Inc., 165 W. 46 St., New York, N.Y.—F
Smith-Meeker Eng'g. Co., 157 Chambers St., New York 7, N.Y.—B
S.O.S. Cinema Supply Corp., 602 W. 52 St., New York 19, N.Y.—C,E
Sound Masters Inc., 165 W. 46 St., New York 36, N.Y.—C,F,O
Spaeth, Sigmund, 400 E. 58 St., New York 22, N.Y.—F,U
Speak-O-Phone Recording & Equip. Co., 23 W. 60 St., New York, N.Y.—O
Special Effects & Equip. Inc., 418 W. 54 St., New York 19, N.Y.—B,F,G,J,R,U,V,W,X
Specialty TV Films Inc., 1501 Broadway, New York 36, N.Y.—F,U
Spera Electronics Labs., 37-10 33rd St., Long Island City 1, N.Y.—O
STANDARD ELECTRONICS CORP., 285 Emmet St., Newark 5, N.J.—B
Strickland Film Co., 220 Phan Rd., N.E., Atlanta, Ga.—E
Talking Devices Co., 4447 Irving Park Rd., Chicago 41, Ill.—O
T-Bar-V Inc., 5919 Hollywood Blvd., Hollywood 28, Calif.—G,X
Tech Labs., Inc., 120 Hillcrest Ave., Leonia, N.J.—B,W
Technicolor Motion Picture Corp., 6311 Romaine St., Los Angeles 38, Calif.—E
TelAutograph Corp., 16 W. 61 St., New York 23, N.Y.—A
Tele-Broadcasters Inc., 158 E. 56 St., New York, N.Y.—A,B
Telecast Film Inc., 112 W. 44 St., New York 36, N.Y.—F
TELECHROME, INC., 88 Merrick Rd., Amityville, L.I., N.Y.—W
Telefilm, Inc., 6039 Hollywood Blvd., Hollywood, Calif.—E,F
Telemated Cartoons, 70 E. 45 St., New York 17, N.Y.—F
Telemont Pictures, Inc., 6255 Clinton St., Los Angeles, Calif.—F
Telenevs Productions, Inc., 630 9 Ave., New York 19, N.Y.—F
Telepix Corp., 6233 Hollywood Blvd., Hollywood 28, Calif.—F
Television Specialty Co., 850 W. 31 St., New York 14, N.Y.—V, X
Telex, Inc., 1633 Eustis St., St. Paul 1, Minn.—B
Texas Industrial Film Co., 919 M & M Bldg., Houston 2, Texas.—F
Thompson Clock Co., H. C., 39 Federal St., Bristol, Conn.—M
Tomlin Film Productions, 480 Lexington Ave., New York 17, N.Y.—F
Tower Construction Co., 1923 Geneva St., Sloux City 3, Iowa.—T
Tower Productions, 1540 N. Highland Ave., Hollywood, Calif.—F
Tracerlab, Inc., 130 High St., Boston 10, Mass.—E
Transfilm, Inc., 35 W. 45 St., New York 19, N.Y.—F
Trans-Lux Corp., 1270 Ave. of the Americas, New York 20, N.Y.—X
Tressel Studio, 59 W. Hubbard St., Chicago 10, Ill.—C,D
Trilach Co., John D., 1310 McKinney Ave., Houston, Texas.—T
TV Center, Inc., 42 & Lexington Ave., New York, N.Y.—F
TV Associated Productions, 4860 Valley Blvd., Los Angeles 32, Calif.—F,U
TV Guild Productions, Inc., 210 N. Larchmont Blvd., Los Angeles 4, Calif.—F
TV Screen Productions, 17 E. 45 St., New York 17, N.Y.—F

20th Century Fox Film Corp., 444 W. 56 St., New York 19, N.Y.—F
 Unifilms, 146 E. 47 St., New York 17, N.Y.—F
 United Artists TV Corp., 729 7 Ave., New York 19, N.Y.—F
 United Productions of America, 521 5th Ave., New York 17, N.Y.—F
 United Recording Labs., 1650 Broadway, New York 19, N.Y.—O
 U.S. Recording Co., 1121 Vermont Ave., N.W., Washington 6, D.C.—B,F,G,P,Q,R,S,Y
 U.S. Tower Co., 219 Union Trust Bldg., Petersburg, Va.—T
 United World Films, 445 Park Ave., New York, N.Y.—F
 Unity TV Corp., 1501 Broadway, New York 36, N.Y.—F
 Universal-International, Lankershim Blvd., Universal City, Calif.—F
 Universal Recorders, Inc., 6757 Hollywood Blvd., Hollywood 28, Calif.—O
 Universal Recording Co., 140 W. 57 St., New York 19, N.Y.—O
 Valentino, Inc., Thomas J. 150 W. 46 St., New York 36, N.Y.—B,H,L,O,P,Q,W,A,A,B
 Video Drama Productions, 505 5 Ave., New York, N.Y.—F
 Video Films, 1004 E. Jefferson Ave., Detroit 7, Mich.—F
 Video Pictures Corp., 41 E. 50 St., New York 22, N.Y.—F
 Video Varieties Corp., 510 W. 57 St., New York, N.Y.—F
 Vogue Wright Studios, 237 E. Ontario St., Chicago 11, Ill.—F
 Walker Electric Co., R., 132 Nassau St., New York 7, N.Y.—B,H
 Walkirt Co., 145 W. Hazel St., Inglewood 3, Calif.—H
 Warner Bros. Studio, Olive Ave., Burbank, Calif.—F
 Western Instrument Co., 826 N. Victory Blvd., Burbank, Calif.—F
 West Michigan Sound Co., 1961 Leahy St., Muskegon, Mich.—B,O,R,Y
 Westrex Corp., 111 8 Ave., New York 11, N.Y.—C,O
 Wilding Picture Productions Inc., 1345 Argyle St., Chicago 40, Ill.—F
 Willard Pictures, Inc., 45 W. 45 St., New York 36, N.Y.—F
 William Productions, Inc., 1041 N. Formosa Ave., Hollywood 46, Calif.—F
 Williams, Brown & Earle, 904 Chestnut St., Philadelphia 7, Pa.—D,N,X
 Williams Recording Service, Ash, 133 W. 16 St., Lincoln 8, Neb.—O
 Willys-Overland Motors, 6225 Benore Rd., Toledo, Ohio—B
 Wind Turbine Co., E. Market St. & Penn. R.R., West Chester, Pa.—T
 Woodruff Assoc., 210 41 St., New York 17, N.Y.—C,F,X
 Wolff Studios, R. G., 5631 Hollywood Blvd., Hollywood 28, Calif.—F
 Ziv TV Programs, 488 Madison Ave., New York 22, N.Y.—F

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 Accurate Electronics Corp., 1312 Ontario St., N.W., Cleveland 13, Ohio—I,K,L
 Acme Scientific Co., 1450 W. Randolph St., Chicago 7, Ill.—D,F
 Acme Telectronic, Div., NEA Service, 1200 W. 3rd St., Cleveland 13, Ohio—K
 Acromark Co., 601 Morrell St., Elizabeth 4, N.J.—I
 Actioncraft Products, 8 Sagamore Hill Dr., Port Washington, L.I., N.Y.—I
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 Airflyte Electronics Co., 21 Cottage St., Bayonne, N.J.—C
 AIRTRON INC., 1103 W. Elizabeth Ave., Linden, N.J.—K
 ALDEN PRODUCTS CO., 117 N. Main St., Brockton 64, Mass.—K,L
 Allied Industries, 2500 Woodland Ave., Louisville 10, Ky.—F



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 Alpha Erection Corp., 508 Iowa State Bank Bldg., Iowa City, Iowa—N
 ALPHA METALS, INC., 56 Water St., Jersey City 4, N.J.—G
 American Communications Corp., 306 Broadway, New York 7, N.Y.—A
 American Radio Hardware Co., 152 S. MacQueston Parkway, Mt. Vernon, N.Y.—K,I
 American Silver Co., 36-07 Prince St., Flushing 54, N.Y.—K
 Anderson Assoc., H. V., 239 Park Ave., Berkeley Heights, N.J.—F
 Apollo Metal Works, 66 Pl. & S. Oak Park Ave., Chicago 38, Ill.—D
 Art Roll Leaf Stamping, 4201 Hudson Blvd., N. Bergen, N.J.—I
 Auburn Mfg. Co., Stack St., Middletown, Conn.—K,L
 Autel Electronics Co., 1947 Farmingdale Rd., Westfield, N.J.—I,K
 Authorized Mfrs. Service, 919 Wyckoff Ave., Brooklyn 27, N.Y.—K,L
 Baer Co., N.S., 1 Montgomery St., Hillside 5, N.J.—K,L
 Baltic Metal Products Co., 120 Sutton St., Brooklyn 22, N.Y.—D,K
 Bart-Messing Corp., 229 Main St., Belleville 9, N.J.—D,F
 Bennett Mfg. Co., Alden, N.Y.—D
 Blacher, B., 752 Broadway, New York 3, N.Y.—I
 Boehme Inc., H. O., 915 Broadway, New York 10, N.Y.—K
 Brooks & Perkins, 1950 W. Fort St., Detroit Mich.—D,F,K
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 BUD RADIO INC., 2118 E. 55th St., Cleveland 3, Ohio—K
 Buhl Optical Co., 1009 Beech Ave., Pittsburgh 33, Pa.—E
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 Cameron Craft, 942 Brockhurst St., Oakland 8, Calif.—D
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 Channer Corp., 1488 Skokie Blvd., Highland Park, Ill.—L,R
 Chase Brass & Copper Co., 236 Grand St., Waterbury 20, Conn.—K
 Chattin Eng'g Associates, 1401 Middle Harbor Rd., Oakland 20, Calif.—M
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 Clegg Laboratories, Inc., 142 S. Livingston Ave., Livingston, N.J.—B,K,L
 Color Television Inc., 973 E. San Carlos Ave., San Carlos, Calif.—K
 Computer Corp. of America, 149 Church St., New York 7, N.Y.—J
 Computer Research Corp. of Calif.—3348 W. El Segundo Blvd., Hawthorne, Calif.—J
 Conn Marine Instrument Co., Essex, Conn.—M,O
 Control Devices Inc., 9918 Charlevoix Ave., Detroit 14, Mich.—S
 Cortland Industries, 4545 W. Cortland St., Chicago 39, Ill.—L
 Deitz Co., S. J., 38 River Edge Rd., River Edge, N.J.—K
 Delta Electronics, Inc., 259 Green St., Brooklyn 22, N.Y.—H
 Douglas Instruments Labs., 176 Norfolk Ave., Boston 19, Mass.—P,S
 Eastern Heat Treating & Brazing Corp., 250 W. 54 St., New York 19, N.Y.—D,Q
 Eastern Metals Industries, 250 W. 54th St., New York 19, N.Y.—R
 Eastern Precision Resistor Corp., 130-11 90th Ave., Richmond Hill 18, N.Y.—C
 ELECTRICAL TOWER SERVICE, P. O. Box 1205, Peoria, Ill.—A
 Electrochemical Industries, Jacques St., Worcester 3, Mass.—D,F,G,I
 Electro Craft Co., 5 Milton Ave., Dorchester 24, Mass.—M
 Electronic Eng'g. Co., 362 W. Bowery St., Akron 7, Ohio—A,B,D
 Electronic Mechanics, Inc., 101 Clifton Blvd., Clifton, N.J.—I
 Electro-Seal Corp., 946 North Ave., Des Plaines, Ill.—C
 Eng'g. Research Associates, Div. Remington Rand Inc., 1902 W. Minnehaha Ave., St. Paul 4, Minn.—J
 Falstrom Co., 53 Falstrom Court, Passaic, N.J.—K
 Federal Tool & Mfg. Co., 3600 Alabama Ave., Minneapolis 16, Minn.—K,L
 GALBRAITH & SON, 450 6th Ave., New York 11, N.Y.—K,M
 Gates Radio Co., 123 Hampshire St., Quincy, Ill.—K
 General Hermetic Sealing Corp., 99 E. Hawthorne Ave., Valley Stream, L.I., N.Y.—C

Genisco, Inc., 2233 Federal Ave., Los Angeles 64, Calif.—K
 Glass & Bros., Harry G., 10 Van Cortlandt Ave., E., New York 68, N.Y.—I,J
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 G. & M. Equipment Co., 7315 Varma Ave., N. Hollywood, Calif.—S
 Gray Research & Development Co., 658 Hilliard St., Manchester, Conn.—K
 G. W. Associates, P. O. Box 2263, El Segundo, Calif.—B
 Hamlyn Electronics Corp., 32 Holman Blvd., Hicksville, N.Y.—K,L
 Harmon Electronics Co., 11431 Truman Rd., Independence, Mo.—A
 Helko Products Co., 243 W. 55th St., New York 19, N.Y.—I
 Henry & Miller, 424 W. 32 St., New York 1, N.Y.—K
 HERMAFAL CO., 1101 Lafayette St., Elkhart, Ind.—C
 Hermetite Corp., 702 Beacon St., Boston 15, Mass.—C,G
 Hopkins Eng'g. Co., 2082 Lincoln Ave., Altadena, Calif.—D,F,G,K
 Houghton Labs. Inc., 322 Bush St., Olean, N.Y.—L
 I.D.E.A. Inc., Regency Div., 7900 Pendleton Pike, Indianapolis 26, Ind.—A
 Industrial Electronic Engr's., 3973 Lankershim Blvd., N. Hollywood, Calif.—B
 Infra Electronic Corp., Roseland, N.J.—K,Q
 International Business Machines Corp., 680 Madison Ave., New York 22, N.Y.—J
 Isolatite Mfg. Corp., Warren Ave., Stirling, N.J.—C
 Jarvis Electronics Corp., 6058 Fullerton Ave., Chicago 39, Ill.—H
 Johanson Mfg. Corp., Rockaway Valley Rd., Roonton, N.J.—C
 Kaiser Metal Products, Inc., Bristol, Pa.—K
 Kaupp & Sons, C. B., 23 Newark Way, Maplewood, N.J.—K
 Kling Metal Spinning Co., 174 Centre St., New York 13, N.Y.—K
 Kregel Mfg. Co., 227 Fulton St., New York 7, N.Y.—I
 Krouse Testing Machine, 573 E. 11 Ave., Columbus 3, Ohio—F
 Laboratory Equipment Corp., Hilltop Rd., St. Joseph, Mich.—B,D,F
 Las-Lab, 316 W. Saratoga St., Baltimore 1, Md.—E
 Lindberg Instrument Co., Alamo Downs-Culebra Rd., San Antonio 4, Tex.—A,B
 Logistics Research Inc., 141 S. Pacific Ave., Redondo Beach, Calif.—J
 Lyco Mfg. Co., Clinton St., Hoboken, N.J.—W
 Mackenzie Products Co., 141 Brewery St., New Haven 11, Conn.—K,L
 Magnafux Corp., 7300 W. Lawrence Ave., Chicago 31, Ill.—M
 MALLORY & CO., P. R., 3029 E. Washington St., Indianapolis 6, Ind.—F
 Mundex Mfg. Co., 2608 W. 16 St., Chicago 8, Ill.—H,K,L
 Marine View Electronics, 744 E. 138th St., New York 54, N.Y.—H
 Merit Plating Co., 218 E. 141 St., New York 51, N.Y.—F
 Metal Products Co., Craighead St., Nashville 4, Tenn.—D
 Metz Refining Co., 369 Mulberry St., Newark 2, N.J.—F
 Mica Insulator Co., P.O. Box 1076 Schenectady 1, N.Y.—I,L
 Microtran Co., Div. Crest Labs., 84-11 Rockaway Beach Blvd., Rockaway Beach 93, N.Y.—C
 Microwave Services, Inc., 45 Rockefeller Plaza, New York, N.Y.—B
 Miller Electric Co., P. O. Box 1827, Jacksonville, Fla.—B
 Milwaukee Stamping Co., 800 S. 72 St., Milwaukee 14, Wisc.—D,F
 Moore Co., H. J., 266 William St., New York 38, N.Y.—H,I,I
 Multi-Metal Wire Cloth Co., 1350 Garison Ave., New York 59, N.Y.—K
 Multi-Tron Lab., 4624 W. Washington Blvd., Chicago 44, Ill.—B,K,L
 M-W Labs. Inc., 1824 N. Milwaukee Ave., Chicago 47, Ill.—F
 National Electrical Machine Shops, 919 Jesus Blair Dr., Silver Spring, Md.—H,I,K,L
 National Electronics Labs., 1713 Kalaran Rd., N.W., Washington 9, D.C.—B,K
 National Gasket & Washer Co., 124 E. 25th St., New York 10, N.Y.—K,I
 Nestor Eng'g. Co., 24 Chestnut St., Rutherford, N.J.—A
 Nilsson Electrical Lab., 103 Lafayette St., New York 13, N.Y.—P,S
 North American Model Products, Inc., 980 Warwick Rd., Warwick, Va.—K,L
 North American Philips Co., Elmet Div., Lisbon Rd., Lewiston, Me.—F
 Pacific Universal Products Corp., 168 Vista Ave., Pasadena 8, Calif.—E
 Palmer, Inc., M. V., 4002 Fruit Valley Rd., Vancouver, Wash.—A,B,N,O
 Par Products Corp., 926 N. Citrus Ave., Hollywood 38, Calif.—I,K
 Photo Chemical Products, 479 Walton Ave., New York 51, N.Y.—D
 Pix Mfg. Co., 5 Oliver St., Newark 2, N.J.—I
 Poinsettia Co., 112 Cedar Ave., Pitman 15, N.J.—D,F,K

recise Measurements Co., 942 Kings Highway, Brooklyn 23, N.Y.—I
 Premier Research Labs., 79 7th Ave., New York 11, N.Y.—F
 Sada Products Co., 2911 W. Carroll Ave., Chicago 12, Ill.—K
 Radiophone Co., 600 E. Evergreen Ave., Monrovia, Calif.—K.M.
 Radio City Products Co., 101 W. 31st St., New York 1, N.Y.—H.K.
 Radio Recorders, 7000 Santa Monica Blvd., Hollywood 38, Calif.—M
 Railway Communications Inc., Rayton, Mo.—A
 Rapid Electric Co., 2881 Middletown Rd., New York 61, N.Y.—F
 Rapid Electroplating Process Inc., 1414 S. Wabash Ave., Chicago 5, Ill.—F
 Remco Mfg. Co., 545 N. La Salle St., Chicago 10, Ill.—G
 Remler Co., Ltd., 2101 Bryant St., San Francisco 10, Calif.—M
 Resdel Eng'g Corp., 2351 Riverside Dr., Los Angeles 39, Calif.—B
 Research Instrument Co., 233 Broadway, New York 7, N.Y.—B
 Rigidized Metals Corp., 657 Ohio St., Buffalo 4, N.Y.—D
 Rogers Corp., Goodyear, Conn.—L
 Rostan Corp., 5660 59th St., Maspeth 78, L.I., N.Y.—K
 Rowe Industries, 1702 Wayne St., Toledo 9, Ohio—B.K.L.M.
 Sampson Chemical & Pigment Corp., 2830 W. Lake St., Chicago 12, Ill.—D.H.I.
 Saratoga Industries, Ballston Ave., Saratoga Springs, N.Y.—C
 Scientific Associates, 580 Virginia Ave., N.E., Atlanta, Ga.—B.K.L.N.
 Scientific Electronic Labs., 866 Bergen St., Newark 8, N.J.—C
 Sealtron Co., 9705 Reading Rd., Cincinnati 15, Ohio—C.F.G.H.
 Secom Metals Corp., 7 Intervale St., White Plains, N.Y.—F
 Sel-Rex Precious Metals, Inc., 29 Main St., Belleville 9, N.J.—D.F.
 Sensitive Research Instrument Corp., 9 Elm Ave., Mt. Vernon, N.Y.—S
 Shepard Labs., 480 Morris Ave., Summit, N.J.—B
 Sillocks-Miller, Maplewood, N.J.—I
 Silver Bay Equip. Co., 5004 20th N.W., Seattle 7, Wash.—I
 Smith-Meeker Eng'g. Co., 157 Chambers St., New York 7, N.Y.—M
 Spera Electronics Labs., 37-10 33 St., Long Island City, N.Y.—A.B.
 Sperry Products Inc., Shelter Rock Rd., Danbury, Conn.—K
 Sperti Faraday Inc., 1077 Celestial St., Cincinnati 2, Ohio—C
 Spincraft Inc., 4122 W. State St., Milwaukee 8, Wis.—D
 Staver Co., 41-51 N. Saxon Ave., Bay Shore, N.Y.—K
 Steiner-Ives Co., 483 Springfield Rd., Union, N.J.—K
 Buckle Electronics Co., 22nd & Hayes Ave., Camden 5, N.J.—K
 Sun Electric Corp., Harlem & Avondale Aves., Chicago 31, Ill.—K
 Superior Flux & Mfg. Co., 1302 Ontario St., Cleveland 13, Ohio—G
 Taylor Fibre Co., Norristown, Pa.—L
 Tele-Broadcasters Inc., 158 E. 56th St., New York, N.Y.—B.N.O.
 Teletronics Labs., Inc., 1835 W. Rosecrans Ave., Gardena, Calif.—B.K.L.
 Teletronics Lab., 54 Kinkel St., Westbury, L.I., N.Y.—B
 Tensitron, Inc., Pin Hill, Harvard, Mass.—K
 Thompson Clock Co., H. C., 38 Federal St., Bristol, Conn.—B
 Torngren Co., C. W., 236 Pearl St., Somerville, Mass.—K
 Tricon Mfg. Co., 8008 Wallace St., Chicago 20, Ill.—K
 Aircraft Products Co., 1535 N. Ashland Ave., Chicago 22, Ill.—H
 Tri-Dex Co., P.O. Box 1207 Lindsay, Calif.—B.H.I.
 Trilsch Co., John D., 1310 McKinney Ave., Houston, Texas—B
 Ultra-Violet Products, 145 Pasadena Ave., S. Pasadena, Calif.—H.I.O.
 M.&F. MFG. CORP., 10929 Van Owne St., N. Hollywood, Calif.—D.F.K.L.
 Uniform Tubes Inc., Level Rd., Collegeville 2, Pa.—K
 S. Radium Corp., 535 Pearl St., New York 7, N.Y.—I
 S. Testing Co., 1415 Park Ave., Hoboken, N.J.—A.B.G.I.M.N.O.
 S. Tower Co., 219 Union Trust Bldg., Petersburg, Va.—B
 Tinson Co., E. R., 1401 Middle Harbor Rd., Oakland 20, Calif.—B
 Tinkert Metal Stampings, John, 223-34 96th Ave., Queens Village 29, N.Y.—K
 Tish Metal Products Co., Box 305 Wabash, Ind.—K
 Toldorf Instrument Corp., Park Ave., Huntington, N.Y.—K
 Walker Electric Co., B., 132 Nassau St., New York 7, N.Y.—A.B.
 Walkert Co., 145 W. Hazel St., Inglewood 3, Calif.—B
 WARREN PLASTICS CORP., Warren, Pa.—C.G.
 Washington Institute of Technology, 4810 Calvert Rd., College Park, Md.—K

White Industries, Inc., 421 W. 54th St., New York 19, N.Y.—K
 Wyeth Eng'g., 6021 Dempster St., Morton Grove, Ill.—B
 Yale & Towne Mfg. Co., Powdered Metals Prods. Div., 9335 W. Belmont Ave., Franklin Park, Ill.—K

81—SOUND REPRODUCING EQUIPMENT, DISC

Cloths, record cleaning AE
 Equalizers, record AF
 Filters, needle scratch A
 Microscopes B
 Needles, diamond AA
 Needles, metal AB
 Needles, sapphire AC
 Needles, steel AD
 Pickup arms D
 Phonographs, electric E
 Phonographs, hand-wound F
 Phonographs, radio combinations G
 Pickups, binaural AG
 Pickups, ceramic AJ
 Pickups, crystal H
 Pickups, dynamic I
 Pickups, magnetic J
 Pickups, photoelectric K
 Pickups, reluctance L
 Record changers, automatic M
 Record compounds Y
 Record Players, coin-operated N
 Record Players, home O
 Record Players, transcription P
 Record Racks Q
 Record Presses R
 Records, binaural AH
 Records, commercial S
 Records, frequency T
 Records, home U
 Records, sound effects V
 Records, test AI
 Transcriptions, broadcast W
 Turntables X

AEROVOX CORP., 740 Belleville Ave., New Bedford, Mass.—A
 Airtronix Development Corp., 20 W. 22nd St., New York 10, N.Y.—E.G.M.O.P.
 Alliance Mfg. Co., Lake Park Blvd., Alliance, Ohio—X
 Allied Recording Products Co., 32-32 Greenpoint Ave., Long Island City 1, N.Y.—W.X
 American Laubacher Corp., 333 W. 52 St., New York 19, N.Y.—AB
 American Microphone Co., 370 S. Fair Oaks Ave., Pasadena 1, Calif.—H
 Ansley Mfg. Co., Arthur, Doylestown, Pa.—E.G.
 Astatic Corp., 250 Harbor St., Conneaut, Ohio—D.H.A.A.AB.AC.AD.
 Audak Co., 500 B Ave., New York 36, N.Y.—J
 AUDIO DEVICES, INC., 444 Madison Ave., New York 22, N.Y.—AB.AC
 Audio Industries, Inc., 532 W. Fourth St., Michigan City, Ind.—E.G.
 Audio Master Corp., 341 Madison Ave., New York, N.Y.—E.G.M.O.P.V.X
 Audio-TONE Oscillator Co., 6511 Main St., Long Hill, Conn.—T
 Authorized Mfrs. Service, 919 Wyckoff Ave., Brooklyn 27, N.Y.—A.A.F.
 Autocrat Electronics Co., 5024 Elm St., Skokie 8, Ill.—E.H.M.O.
 Beam Radionics Corp., 224 N. Desplaines St., Chicago 6, Ill.—E
 BERNDT-BACH, INC., AURICON DIV., 6916 Romaine St., Hollywood 38, Calif.—F
 Bogen Co., David, 29 Ninth Ave., New York 14, N.Y.—E.O.P.
 Bowen & Co., 4712 Bethesda Ave., Bethesda, Md.—D.E.F.O.P.
 British Electronic Sales, 23-03 45 Rd., Long Island City, N.Y.—H.M.A.C.
 Brush Electronics Co., 3405 Perkins Ave., Cleveland 14, Ohio—H
 Bucks County Enterprises, Quakertown, Pa.—Q
 Buhl Optical Co., 1009 Beech Ave., Pittsburgh 12, Pa.—B
 Califone Corp., 1041 N. Sycamore St., Hollywood 38, Calif.—E.H.J.L.O.P.X.A.G.
 Caltech Electronics, 8930 Lindblade St., Culver City, Calif.—E.Q.
 Caltron Products Co., 1310 S. Hobart Blvd., Los Angeles 6, Calif.—AC
 Calvin Co., 1105 Truman Rd., Kansas City 6, Mo.—E
 Capitol Records, 5515 Melrose Ave., Hollywood 38, Calif.—S.U.W.
 CBS-COLUMBIA, 3400 47th Ave., Long Island City 1, N.Y.—G
 Central Electronics Corp., 4875 San Fernando Rd., W., Los Angeles 39, Calif.—E
 CINEMA ENG'G. CO., DIVISION AEROVOX CORP., 1100 Chestnut St., Burbank, Calif.—AF

Cook Labs., Inc., 114 Manhattan St., Stamford, Conn.—S.T.U.V.A.H.A.I.
 Crescent Industries, 5900 W. Touhy Ave., Chicago 31, Ill.—E.M.O.
 Culbertson Co., George K., 8471 Leroy St., San Gabriel, Calif.—E.O.
 Dean Electronics, 35 5 Ave., Brooklyn 17, N.Y.—E.F.O.P.
 Decca Records, Inc., 50 W. 57 St., New York, N.Y.—U
 Dela. Optical Labs, 36 Williams St., Lansdowne, Pa.—K
 DeWald Radio & TV Corp., 35-15 37 Ave., Long Island City 1, N.Y.—O
 D & R Ltd., 402 E. Gutierrez St., Santa Barbara, Calif.—P
 Dubbings Co., 41-10 45 St., Long Island City, N.Y.—T.A.I.
 DuKane Corp., St. Charles, Ill.—E.P.
 Duotone Co., 77 Walling Terrace, Keyport, N.J.—B.M.AA.AB.AC.AE.AE.AG.AH
 Edu-Craft Sales Corp., 150-45 12 Ave., Whitestone, N.Y.—E.G.O.
 Electron Enterprises, 6917 W. Stanley Ave., Berwyn, Ill.—E.F.G.O.P.
 Electronic Workshop, 26 W. 8th St., New York 11, N.Y.—A.D.E.G.H.I.J.L.M.O.P.Q.U.
 X.Y.AA.AB.AC.AD.AE.AG.AH
 Electron-Radar Products, 1041 N. Pulaski Rd., Chicago 51, Ill.—K
 Electro-Sound Corp., 115 Halleck St., Boston, Mass.—E.H.J.L.M.S.AA.AC.AE.AE.AG.AH
 Electro Vision Lab., 30-16 Creacent St., Long Island City 2, N.Y.
 Electro-Voice, Inc., Cecil and Carroll Sts., Buchanan, Mich.—H
 Elex Co., 150-50 Melbourne Ave., Flushing 67, N.Y.—E.F.G.
 FAIRCHILD RECORDING EQUIP. CORP., 154 St. & 7 Ave., Whitestone, N.Y.—R.I.J.P.A.F.
 Federal Sapphire Products, 12 River Rd., Fair Lawn, N.J.—AC
 Ferranti Electric, 30 Rockefeller Plaza, New York 20, N.Y.—D.J.
 Fidelity Amplifier Co., 703 W. Willow St., Chicago 14, Ill.—E
 Fisher Radio Corp., 21-21 44th Dr., Long Island City 1, N.Y.—A.G.K.A.F.
 Freed Electronics & Controls Corp., 200 Hudson St., New York 13, N.Y.—E.G.O.
 Frutchey, M.P., P. O. Box 28, Hackettstown, N.J.—I.J.L.
 Garrard Sales Corp., 164 Duane St., New York 13, N.Y.—E.M.P.X.
 GATES RADIO CO., 123 Hampshire St., Quincy, Ill.—A.D.E.H.J.L.P.Q.X.AA.AC.AE.AG.
 GENERAL INDUSTRIES CO., Olive & Taylor Sts., Elyria, Ohio—E
 Gotham Television Corp., 123 W. 64 St., New York 23, N.Y.—E.G.
 Grayline Eng'g. Co., 12243 Ave., "O", Chicago 33, Ill.—E.O.
 GRAY RESEARCH & DEVELOP. CO., 658 Hilliard St., Manchester, Conn.—D.A.F.
 Greene Co., L. Charlton, 314 Washington St., Newton 58, Mass.—E
 GULTON MFG. CORP., 212 Duryham Ave., Metuchen, N.J.—H.A.J.
 Hamilton Electronics Corp., 2726 Pratt Ave., Chicago 45, Ill.—E.P.
 Heath Co., 305 Territorial, Benton Harbor, Mich.—O
 Insuline Corp. of America, 186 Granite St., Manchester, N.H.—I.A.A.C.
 Intl. Projector Corp., 55 La France Ave., Bloomfield, N.J.—K
 JFD Mfg. Co., 6101 16 Ave., Brooklyn 4, N.Y.—AB.AD
 Key Electronics Corp., 20 W. 22 St., New York 10, N.Y.—E.G.M.
 Kraft Bros., 1299 Jerome Ave., New York 52, N.Y.—E.M.Q.
 Life Record Co., 64 W. Randolph St., Chicago, Ill.—E
 Lindberg Instrument, Alamo Downs, Culebra Rd., San Antonio 4, Texas
 Lipps Co., Edwin A., 5485 W. Washington Blvd., Los Angeles 16, Calif.—B.A.A.C.
 London Records, 539 W. 25 St., New York 1, N.Y.—U
 Lovins Eng'g. Co., 8203 Cedar St., Silver Spring, Md.—B
 McClure Talking Pictures, O.J., 1115 W. Washington Blvd., Chicago 7, Ill.—E.P.
 MGM Records, 701 7 Ave., New York 36, N.Y.—U
 Magna Electronics Inc., 9810 Anza Blvd., Inglewood, Calif.—E
 Maico Co., 21 N. 3rd St., Minneapolis 1, Minn.—J
 Major Electronics Co., 1090 Bedford Ave., Brooklyn, N.Y.—E
 Mfg. Lab., 10610 Keswick, Sun Valley, Calif.—D
 Markel Electric Products, 145 Seneca St., Buffalo 3, N.Y.—M
 Maurer Inc., J. A., 37-01 31st St., Long Island City 1, N.Y.—K
 Mercury Record Corp., 839 S. Wabash Ave., Chicago, Ill.—U
 Michigan Electronics Inc., 854 N. Rockwell St., Chicago 22, Ill.—J.W.
 Midwest Radio & Television Corp., 909 Broadway, Cincinnati 2, Ohio—E.G.M.O.
 Miles Reproducer Co., 812 Broadway, New York 3, N.Y.—AA.AC
 Miller Mfg. Co., M.A., 4 & Church Sts., Libertyville, Ill.—A

Milwaukee Record Changer Corp., 39 Warren St., New York 7, N.Y.—M
 Mitchell Mfg. Co., 2525 Clybourn Ave., Chicago 14, Ill.—E
 MP Engineering Co., Fairfield 3, Conn.—E.G.O.P
 National Hollywood, 1475 El Mirador Dr., Pasadena 3, Calif.—AB.AC.AD
 Newcomb Audio Prods. Co., 6824 Lexington Ave., Hollywood 38, Calif.—P
 Oberline, Ltd., 6411 Hollywood Blvd., Hollywood 28, Calif.—P
 Optron Mfg. Co., 3223 N. Sheffield Ave., Chicago 13, Ill.—D.E.M
 Pacific Transducer Corp., 11921 W. Pico Blvd., Los Angeles 64, Calif.—B.D.J.AA.AC.AF.AI
 Park Armature Co., 883 Boylston St., Boston 16, Mass.—E.M.O
 Peirce Wire Recorder Corp., 5900 N. Northwest Hwy., Chicago 31, Ill.—J
 Peerless TV Radio Co., 6508 Euclid Ave., Cleveland, Ohio—E.G
 Permo, Inc., 6415 N. Ravenswood Ave., Chicago 26, Ill.—AA.AB.AC.AD
 Pfanstiehl Chemical Co., 104 Lake View Ave., Waukegan, Ill.—D
 Phila. Scientific Glass Co., 4 Eckard Ave., Abington, Penna.—W
 Pickering & Co., 309 Woods Ave., Oceanside, N.Y.—D.J.A.F
 Plymouth Electronics Corp., 50 Kingsbury St., Worcester, Mass.—O
 Poinsettia Co., 112 Cedar Ave., Pitman 15, N.J.—R
 Precision Electronics, 7518 Melrose Ave., Los Angeles 46, Calif.—E.G
 Precision Supply & Machine Co., 12-36 River Rd., Fairlawn, N.J.—AA.AC
 PRESTO RECORDING CORP., P. O. Box 500, Paramus, N.J.—D.F.L.O.P.AA.AB.AC.AD.AF
 Pulse Techniques, Inc., 1411 Palisade Ave., W. Englewood, N.J.—AF
 RADIO CORP. OF AMERICA, RCA VICTOR DIV., Front & Cooper Sts., Camden 2, N.J.—B.W.X
 Radio Music Corp., 84 S. Water St., Port Chester, N.Y.—A.D.E.J.L.P.W.X.A.F
 Radio Recorders, 7000 Santa Monica Blvd., Hollywood 38, Calif.—E.G.M.O.P.S.T.W
 Recoton Corp., 147 W. 22nd St., New York 11, N.Y.—J.AB.AC
 Reevesound Co., 35-54 36 St., Long Island City 1, N.Y.—B
 Rek-O-Kut Co., 38-01 Queens Blvd., Long Island City 1, N.Y.—E.J.P.X
 Remington Records, 551 5 Ave., New York, N.Y.—U
 River Edge Industries, 5 River Edge Rd., River Edge, N.J.—Q
 Rolab Studios, Walnut Tree Hill, Sandy Hook, Conn.—S.U.V
 Royal Diamond Tool Co., 172 Green St., Boston 30, Mass.—AA
 Sechurg Corp., J. P., 1510 N. Dayton St., Chicago 22, Ill.—N
 Shura-tone Products, 440 Adelphi St., Brooklyn 38, N.Y.—E.G.O
 SHURE BROS., INC., 225 W. Huron St., Chicago 10, Ill.—D.H.AB.AC
 Simmons Mfg. Co., Mark, 32-28 49 St., Long Island City 3, N.Y.—E.G
 Sonitone Corp., Elmsford, N.Y.—AA.AB.AC, AF
 S.O.S. Cinema Supply Corp., 602 W. 52nd St., New York 19, N.Y.—AF
 Soundcriber Corp., 146 Munson St., New Haven 4, Conn.—P
 Spartan Radio TV, 2400 E. Ganson St., Jackson, Mich.—G.O
 Square Root Mfg. Corp., 391 Saw Mill River Rd., Yonkers 2, N.Y.—E.O
 Steelman Phono. & Radio Co., 12 Anderson Ave., Mount Vernon, N.Y.—E.G.O.P
 Stromberg-Carlson Co., 100 Carlson Rd., Rochester 3, N.Y.—E.G.O
 Symphonic Radio & Electronic Corp., 160 Washington St., Boston 14, Mass.—N.O.P
 Talking Devices Co., 4447 Irving Park Rd., Chicago 41, Ill.—E.F.M.P.R.S.U
 Televex Co., P.O. Box 101, Riverdale Station, New York 71, N.Y.—B.AA.AB.AC
 Tetrad Co., 62 St. Mary St., Yonkers, N.Y.—AA
 Toman & Co., E., 8700 W. 47th St., Lyons, Ill.—F
 Trebor Radio Co., Pasadena 18, Calif.—O
 United Pressed Products, 741 W. Harrison St., Chicago 7, Ill.—A.C.E
 U. S. ELECTRONICS CORP., 275 Warren St., Lyndhurst, N.J.—A
 U.S. Recording Co., 1121 Vermont Ave., N.W., Washington 5, D.C.—B.D.E.H.J.L.P.X
 United Transformer Co., 150 Varick St., New York 13, N.Y.—A
 Vallorbs Jewel Co., P.O. Box 958, Lancaster, Pa.—AB.AC
 VM Corp., 280 Park St., Benton Harbor, Mich.—M
 Waltham Screw Co., 77 Rumford Ave., Waltham 54, Mass.—AB.AD
 Weathers Industries, 66 E. Gloucester Pike, Barrington, N.J.—D
 Webster-Chicago Corp., 5610 W. Bloomingdale Ave., Chicago 39, Ill.—E.M.O
 Western Mfg. Co., 1400 W. 22 St., Kearney, Nebr.—E
 White Rock Mfg. Co., White Rock, S. Car. E. F.G.O
 Williams, Brown & Earle, 904 Chestnut St., Philadelphia 7, Pa.—B



82—SOUND REPRODUCING EQUIPMENT, MAGNETIC

- Editing blocks H
- Heads, magnetic film strip J
- Heads, magnetic tape playback ... A
- Heads, magnetic wire playback ... B
- Players, magnetic tape C
- Players, magnetic wire D
- Reels I
- Tape indexes E
- Tape, magnetic F
- Wire, magnetic G

American Silver Co., 36-07 Prince St., Flushing 54, N.Y.—C.F
 AMPEX ELECTRIC CORP., 934 Charter St., Redwood City, Calif.—C.I.J
 Amplifier Corp. of America, 398 Broadway, New York 13, N.Y.—A.C
 Ampro Corp., 2835 N. Western Ave., Chicago 18, Ill.—C.F
 Audak Co., 500 5 Ave., New York 36, N.Y.—A
 AUDIO DEVICES, INC., 444 Madison Ave., New York 22, N.Y.—F
 Audio Master Corp., 411 Madison Ave., New York 17, N.Y.—C.F
 Aurex Corp., 1117 N. Franklin St., Chicago 10, Ill.—D
 Bell & Howell, 7100 McCormick Rd., Chicago 45, Ill.—C
 Berlant Associates, 4917 W. Jefferson Blvd., Los Angeles 16, Calif.—A.C
 Broadcast Equip. Spec. Corp., 135-01 Liberty Ave., Richmond Hill 19, N.Y.—C
 Brush Electronics Co., 3405 Perkins Ave., Cleveland 14, Ohio—A.C.F
 CAMERA EQUIPMENT CO., 1600 Broadway, New York 19, N.Y.—C.F.H
 Cook Electric, 2700 Southport Ave., Chicago 14, Ill.—A
 Crescent Industries, 5900 W. Touhy Ave., Chicago 31, Ill.—A.B.C.D.F.G
 Davies Labs., Inc., 4705 Queensbury Rd., Riverdale, Md.—C
 Eicor, Inc., 1501 W. Congress St., Chicago 7, Ill.—A.C.F
 Electron Enterprises, 6917 W. Stanley Ave., Berwyn, Ill.—B.D
 Electrosonic Specialties, 7230 Clinton Rd., Upper Darby, Pa.—C.D
 Electro-Sound Corp., 115 Halleck St., Boston, Mass.—F
 Electro Vision Lab., 30-16 Crescent St., Long Island City 2, N.Y.—C
 FAIRCHILD RECORDING EQUIP. CO., White-stone 57, N.Y.—G
 Fenton Co., 15 Moore St., New York 4, N.Y.—C
 General Cement Mfg. Co., 919 Taylor Ave., Rockford, Ill.—C.D.F.G.I
 General Industries Co., Olive & Taylor Sts., Elyria, Ohio—C
 GRAYBAR ELECTRIC CO., 420 Lexington Ave., New York 17, N.Y.—C
 Hallen Corp., 3503 W. Olive Ave., Burbank, Calif.—A
 Jensen Industries, 329 S. Wood St., Chicago 12, Ill.—F
 Korb Eng'g. & Mfg. Co., 30 Ottawa Ave., Grandville, Mich.—C.G
 Land-Air, Inc., 201 N. Well St., Chicago 6, Ill.—C.D.F.G
 Lipps Co., Edwin A., 5485 W. Washington Blvd., Los Angeles 16, Calif.—A.B
 Magnasync Mfg. Co., 5517 Satsuma Ave., N. Hollywood, Calif.—A
 Macnecord Inc., 225 W. Ohio St., Chicago 10, Ill.—A.C
 Magnecessories, P.O. Box 6960, Washington 20, D.C.—H
 Magnetic Sound, Inc., 4803 1/2 Grand Ave., Des Moines, Iowa—F
 Maryland Electronic Mfg. Corp., 5009 Calvert Rd., College Park, Md.—C
 Maurer Inc., J. A., 37-01 31st St., Long Island City 1, N.Y.—F
 Michigan Electronics, Inc., 854 N. Rockwell St., Chicago 22, Ill.—C.D.F.G
 Minn. Mining & Mfg. Co., 900 Fauquier St., St. Paul 6, Minn.—E.F.I
 Mohawk Business Machines Corp., 944 Halsey St., Brooklyn 37, N.Y.—A.C.D.F
 Monson Corp., 919 N. Michigan Ave., Chicago 11, Ill.—F
 Peirce Wire Recorder Corp., 5900 N. Northwest Hwy., Chicago 31, Ill.—A.B.C.D.G
 Pentron Corp., 221 E. Cullerton Ave., Chicago 16, Ill.—A.C.F.I
 Permodux Corp., 4900 W. Grand Ave., Chicago 39, Ill.—C
 Permo, Inc., 6415 N. Ravenswood Ave., Chicago 26, Ill.—F.G

Pfanstiehl Chemical Co., 104 Lake View Ave., Waukegan, Ill.—F
 Press Wireless Labs. Inc., 25 Prospect Pl., W. Newton 65, Mass.—A
 PRESTO RECORDING CORP., P. O. Box 500, Paramus, N.J.—A.C
 RADIO CORP. OF AMERICA, RCA VICTOR DIV., Camden 2, N.J.—A.C.F
 Radio Recorders, 7000 Santa Monica Blvd., Hollywood 38, Calif.—F
 Rangertone, Inc., 73 Winthrop St., Newark 4, N.J.—A.C
 Recoton Corp., 147 W. 22 St., New York 11, N.Y.—F
 Reevesound Co., 35-54 36 St., Long Island City 1, N.Y.—A
 Smith Associates, Raudon, 2217 M. St., N.W., Washington 1, D.C.—A.D
 S.O.S. Cinema Supply Corp., 602 W. 52nd St., New York 19, N.Y.—A.C.F.H.I
 Sound Devices Inc., 129 E. 124th St., New York 35, N.Y.—F
 Soundcriber Corp., 146 Munson St., New Haven 4, Conn.—C
 Stancill-Hoffman Corp., 921 N. Highland Ave., Hollywood 38, Calif.—A.C
 Tape Recording Apparatus Co., Box 218 Scotch Plains, N.J.—A
 Tayloreel Corp., 3-33 Rutter St., Rochester 6, N.Y.—I
 Technical Tape Corp., 177 St. & Harlem River, Bronx, N.Y.—F
 Techno Instrument Co., 6666 Lexington Ave., Los Angeles 38, Calif.—D
 U.S. Recording Co., 1121 Vermont Ave., N.W., Washington 5, D.C.—A.C.F
 Webster-Chicago Corp., 5610 W. Bloomingdale Ave., Chicago 39, Ill.—C.D.F.G
 Wenzel Projector Co., 2509 S. State St., Chicago 16, Ill.—I
 Williams Brown & Earle, 904 Chestnut St., Philadelphia 7, Pa.—C.F.I

83—SOUND SYSTEMS, INTER-COMMUNICATORS & HEARING AIDS

- Acoustic materials A
- Amplifiers, mobile B
- Amplifiers, power C
- Bells & Buzzers D
- Carrier current systems E
- Consoles, studio F
- Controllers, remote G
- Equalizers H
- Hearing aids I
- Home sound systems J
- Intercommunicators K
- Megaphones, electronic L
- Musical electronic equipment M
- Preamplifiers N
- Public address systems O
- Telephone systems P
- Telephones, sound powered Q

Acme Electronics, Inc., 300 N. Lake Ave., Pasadena 4, Calif.—E.H
 Adler Communications Labs., 1 LeFevre Lane, New Rochelle, N.Y.—K
 AEROVOX CORP., 740 Belleville Ave., New Bedford, Mass.—F.H.N
 Air Associates, Teterboro, N.J.—C
 Airtronix Devel. Corp., 20 W. 22 St., New York 10, N.Y.—K.N.O
 Allied Int'l, Inc., 230 Park Ave., New York 17, N.Y.—B.C.F.O
 Allied Radio Corp., 833 W. Jackson Blvd., Chicago 7, Ill.—B.C.J.M.O
 ALTEC LANSING CORP., 9356 Santa Monica Blvd., Beverly Hills, Calif.—C.F.G.J.N.O
 American Communications Corp., 306 Broadway, New York 7, N.Y.—E.K.O.P
 Audio Equipment Co., 805 Middle Neck Rd., Great Neck, N.Y.—B.C.K.L.M.N.O
 Audio-Master Corp., 341 Madison Ave., New York 17, N.Y.—O
 Authorized Mfrs. Service, 919 Wyckoff Ave., Brooklyn 27, N.Y.—C.F.H.J.N
 Autophone Ltd., 73 Great Peter St., London, England—K.P
 Beam Instruments Corp., 350 Fifth Ave., New York 1, N.Y.—B.J.N
 Bell Sound Systems, 555 Marion Rd., Columbus 7, Ohio—B.C.O
 Beltone Hearing Aid Co., 1450 W. 12 St., Chicago 8, Ill.—I
 Bennett Laboratories, Inc., 2700 Bay Rd., Redwood City, Calif.—K
 Blinn Electronic Corp., Box 123, Sussex, N.J.—O.P
 Bogen Co., David, 29 Ninth Ave., New York 14, N.Y.—B.C.E.G.J.K.M.N.O
 Bone Eng'g Corp., 701 W. Broadway, Glen Dale 4, Calif.—F
 Boom Electric Corp., 5226 W. Grand Ave., Chicago 39, Ill.—F.O
 Bowen & Co., 4712 Bethesda Ave., Bethesda, Md.—J.O
 Brelec Electronics Corp., 55 Vandam St., New York 13, N.Y.—L
 Brocner Electronics Lab., 344 E. 32nd St., New York 16, N.Y.—C.N

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Bethesda
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32nd St.

Brooks & Perkins, 1950 W. Fort St., Detroit 16, Mich.—F
Brush Electronics Co., 3465 Perkins Ave., Cleveland 14, Ohio—A,I,N
Bunnell & Co., J.H., 81 Prospect St., Brooklyn 1, N.Y.—D
Calbest Eng'g. & Electronics Co., 828-830 N. Highland Ave., Hollywood 38, Calif.—C,J,K,L,N,O
Califone Corp., 1041 N. Sycamore Ave., Hollywood 38, Calif.—C,J,O
Caltron Products Co., 1310 S. Hobart Blvd., Los Angeles 6, Calif.—N
Central Electronics Inc., 1247 W. Belmont Ave., Chicago 13, Ill.—C,I
Century Projector Corp., 729 7 Ave., New York 19, N.Y.—C,N,O
CHICAGO TELEPHONE SUPPLY, 1142 W. Beardsley Ave., Elkhart, Ind.—H
INEMA ENG'G. CO. DIV. AEROVOX CORP., 1100 Chestnut St., Burbank, Calif.—H,N
Clark Cooper Co., Palmyra, N.J.—D
Coil Winders Inc., 100 New York Ave., Westbury, L.I., N.Y.—D
Colorone Television Co., 238 William St., New York 88, N.Y.—K
Cook Labs., Inc., 114 Manhattan St., Stamford, Conn.—N
Cooper Electronic Products Co., 4500 Melrose St., Philadelphia 24, Pa.—K
Conn. Telephone & Electric Co., 70 Britannia St., Meriden, Conn.—D,P
Crawford Dimension Co., 456 N. Rodeo Dr., Beverly Hills, Calif.—J
Crown Eng'g., 3821 Commercial N. E., Albuquerque, N.M.—N
Curtiss Wright Corp., Electronics Div., 631 Central Ave., Carlstadt, N.J.—N
Dalmotron Co., 534 Laurel St., San Carlos, Calif.—J,K
Daven, 191 Central, Newark 4, N.J.—H
Deagan, Inc., J.C., 1770 W. Berteau Ave., Chicago 13, Ill.—M
Dean Electronics, 35 5 Ave., Brooklyn 17, N.Y.—J,K,O
Detect-O-Ray Co., 2622 N. Halsted St., Chicago 14, Ill.—D
Dilka Co., Derby Ave., Seymour, Conn.—O
DuKane Corp., St. Charles, Ill.—C,K,N,O
DUMONT LABS., INC., ALLEN B. TV Transmitter Dept., Mobile Comm. Dept., 1500 Main St., Clifton, N.J.—F
Edu-Craft Sales Corp., 150-45 12 Ave., White-stone, N.Y.—C,J,N
Electronic Workshop, 26 W. 8 St., New York 11, N.Y.—A,C,J,N,O
Electro-Sound Corp., 115 Halleck St., Boston, Mass.—B,C,D,E,J,K,L,M,N,O,P
Electro Vision Lab., 30-16 Crescent St., Long Island City 2, N.Y.—O
Elex Co., 150-50 Melbourne Ave., Flushing 67, N.Y.—O
El-Tronics, Inc., 437 N. 5th St., Philadelphia 23, Pa.—B,C
Eucotone Inc., 415 Lexington Ave., New York 17, N.Y.—K,O
Farmers Eng'g. & Mfg. Co., Irwin, Pa.—G,K
FEDERAL TELEPHONE & RADIO CORP., DIV. I. T. & T., 100 Kingsland Rd., Clifton, N.J.—E,P
Feiler Eng'g. & Mfg. Co., 8026 N. Monticello Ave., Skokie, Ill.—B,C,E,G,J,K,N,O,P
Fenton Co., 15 Moore St., New York 4, N.Y.—I
Fidelity Amplifier Co., 703 W. Willow St., Chicago 14, Ill.—C
Freed Electronics & Controls Corp., 200 Hudson St., New York 13, N.Y.—B,C,E,F,J,K,N,O
Gables Eng'g. Inc., 247 Greco Ave., Coral Gables, Fla.—O
GAILBRAITH & SON, 450 6 Ave., New York 11, N.Y.—B,C,K,O
GATES RADIO CO., 123 Hampshire St., Quincy, Ill.—B,C,F,G,H,N,O
General Communications, Box 169, Fort Atkinson, Wis.—C,F,P
GENERAL ELECTRIC CO., RADIO-TV DEPT., Syracuse, N.Y.—C,N
General Hermetic Sealing Corp., 99 E. Hawthorne, Valley Stream, L.I., N.Y.—K,O
Greedy Mfg. Co., 2642 S. Michigan Ave., Chicago 16, Ill.—K
Grason-Stadler Co., 106 Hampshire St., Cambridge 39, Mass.—I,N
RAYBAR ELECTRIC CO., 420 Lexington Ave., New York 17, N.Y.—F,O,P
RAY RESEARCH & DEVEL. CO., 658 Hilliard St., Manchester, Conn.—F,H
Greene Co., L. Charlton, 314 Washington St., Newton 58, Mass.—K
Hamilton Electronics Corp., 2726 Pratt Ave., Chicago 45, Ill.—B,C,I,J,K,N,O
Harmon Electronics Co., 11341 Truman Rd., Independence, Mo.—E,K
Industrial Television Inc., 369 Lexington Ave., Clifton, N.J.—I
Inuline Corp. of America, 186 Granite St., Manchester, N.H.—B,C,G,K
Inter-Communications Corp., 620 W. Douglas, Wichita 12, Kan.—G,J,K
Interelectronics Corp., 1432 Grand Concourse, New York 58, N.Y.—B,C,H,M,N,O
Int'l Electronics Corp., 147 Parkhouse St., Dallas 2, Texas.—F,N
Int'l. Projector Corp., 55 LaFrance Ave., Bloomfield, N.J.—C,N,O
Int'l. Research Associates, 2221 Warwick Ave., Santa Monica, Calif.—I
Int'l. Industries, 6110 Wilshire Blvd., Los Angeles 38, Calif.—G

Jarvis Electronics Corp., 6088 Fullerton Ave., Chicago 39, Ill.—C,I
John-Manville, 22 E. 40th St., New York 16, N.Y.—A
KELLOGG SWITCHBOARD & SUPPLY, 79 W. Monroe St., Chicago 3, Ill.—P
K-F Development Co., 2606 Spring St., Redwood City, Calif.—E
Key Electronics Corp., 20 W. 22 St., New York 10, N.Y.—J,O
King Electronics Co., 40 Marbledale Rd., Tuckahoe, N.Y.—I
Kirby Products Corp., 175 Fifth Ave., New York 10, N.Y.—K,N
Langevin Mfg. Corp., 37 W. 65th St., New York, N.Y.—C,N,O
Loze, Sound Engineers, J.M., 2171 W. Washington Blvd., Los Angeles 18, Calif.—B,C,J,K,O
Loral Electronics Corp., 794 E. 140 St., New York 54, N.Y.—K
Lyman Electronic Corp., 12 Cass St., Springfield, Mass.—K
Lynch Carrier Systems, 96 Jessie St., San Francisco 5, Calif.—E,P
Magna Electronics Inc., 9810 Anza Blvd., Inglewood, Calif.—B,C,J,M,N,O
Maico Co., 21 N. 3 St., Minneapolis, Minn.—I
Marine View Electronics, 744 E. 138 St., New York 54, N.Y.—J,N,O
Martin & Co., H. S., 1916 Greenleaf St., Evanston, Ill.—C,N
McIntosh Lab. Inc., 320 Water St., Binghamton, N.Y.—C,H,N
Melody Master Mfg. Co., 2842 N. Cicero Ave., Chicago 41, Ill.—I,J,M,O
Michigan Electronics Inc., 854 N. Rockwell St., Chicago 22, Ill.—L,O
Microtron Co., Ford Parkway on the Miss. St. Paul, Minn.—I
Miles Reproducer Co., 812 Broadway, New York 3, N.Y.—P
Munston Mfg. & Service, Inc., Beech St., Islip, N.Y.—C,K,L,O
Myers & Sons, E. A., 306 Beverly Rd., Pittsburgh 16, Pa.—I
National Sound Equip. Co., 1212 Farnam St., Omaha, Nebr.—C,J
Neptune Electronics Co., 433 Broadway, New York 13, N.Y.—G,J,K,N,O
Newcomb Audio Products Co., 6824 Lexington Ave., Hollywood 38, Calif.—B,C,G,H,J,N,O
Oberline, Ltd., 6411 Hollywood Blvd., Hollywood 28, Calif.—C,F,J,N,O
O'Brien Electric Corp., 6514 Santa Monica Blvd., Hollywood 38, Calif.—F,O
Optron Mfg. Co., 3223 N. Sheffield Ave., Chicago 13, Ill.—O
Pacific Mercury TV Mfg. Corp., 5955 Van Nuys Blvd., Van Nuys, Calif.—C,I
Pacific Transducer Corp., 11921 W. Pico Blvd., Los Angeles 64, Calif.—H
Permotux Corp., 4900 W. Grand Ave., Chicago 39, Ill.—L,Q
Planstahl Chemical Co., 104 Lake View Ave., Waukegan, Ill.—N
Philmore Mfg. Co., 113 University Pl., New York 8, N.Y.—J
Pickering & Co., 309 Woods Ave., Oceanside, N.Y.—H,N
Pilot Radio Corp., 37-06 36th St., Long Island City 1, N.Y.—J,N
Plastics & Electronics, 272 Northland Ave., Buffalo 8, N.Y.—I
Plymouth Electronics Corp., 50 Kingsbury St., Worcester, Mass.—C
Precision Electronics, 7518 Melrose Ave., Los Angeles 46, Calif.—C,J,K,O,P
Precision Electronics, Inc., 9101 King Ave., Franklin Park, Ill.—B,C,J,N,O
Precision Hearing Aids, 5157 W. Grand Ave., Chicago 39, Ill.—H,I
RADIO CORP. OF AMERICA, RCA VICTOR DIV., Front & Cooper St., Camden 2, N.J.—B,C,F,J,K,N,O
Radio Kita, Inc., 120 Cedar St., New York 6, N.Y.—C,N,O
Radio Music Corp., 84 S. Water St., Port Chester, N.Y.—C,F,H,N,O
Radio Recorders, 7000 Santa Monica Blvd., Hollywood 38, Calif.—J,O
Rauland-Borg Corp., 3515 W. Addison St., Chicago 18, Ill.—B,C,F,K,N,O
REEVESOUND CO., 35-54 36 St., Long Island City 1, N.Y.—F
Remler Co., 2101 Bryant St., San Francisco 10, Calif.—B,C,K,L,N,O,P
Rich Electronics, 212 N.W. 8 Ave., Miami 86, Fla.—O
Rigidized Metals Corp., 657 Ohio St., Buffalo 3, N.Y.—A
Ripley Co., Middletown, Conn.—C
River Edge Industries, 5 River Edge Rd., River Edge, N.J.—J
Roanwell Corp., 662 Pacific St., Brooklyn 17, N.Y.—Q
Roesch Co., D. J., 2200 S. Figueroa St., Los Angeles 7, Calif.—J,K,O,P,Q
Rowe Industries, 1702 Wayne St., Toledo 9, Ohio—C,M
Scott, Inc., Hermon Hosmer, 385 Putnam Ave., Cambridge 39, Mass.—H,N
Sealtron Co., 9701 Reading Rd., Cincinnati 15, Ohio—C
Sears Co., M. J., Roxbury, N.Y.—Q
Setchell Carlson, Inc., 890 5th Ave., N. New Brighton 12, Minn.—J,O
Shevers, Inc., Harold, 123 W. 84 St., New York 23, N.Y.—J

Signal Eng'g & Mfg. Co., Long Branch, N.J.—D
Simpson Mfg. Co., Mark 32-28 49 St., Long Island City 3, N.Y.—B,C,E,J,K,N,O
Smith-Meeker Eng'g. Co., 157 Chambers St., New York 7, N.Y.—O
S.O.S. Cinema Supply Corp., 602 W., 52nd St., New York 19, N.Y.—C
Spera Electronics Labs., 37-10 33 St., Long Island City, N.Y.—C,E,J,N,O
Square Root Mfg. Corp., 391 Saw Mill Rd., Yonkers, N.Y.—C,K,N
Stephens Mfg. Corp., 8538 Warner Dr., Culver City, Calif.—F,J,O
Stewart-Warner Electric, 1300 N. Kostner Ave., Chicago 1, Ill.—L
Strumbers-Carlson Co., Rochester 3, N. Y.—B,C,F,J,N,O,P
Talk-A-Phone Co., 1512 S. Pulaski Rd., Chicago 23, Ill.—J,K
Telex, 1633 Eustis St., St. Paul 1, Minn.—C,I
Tele-Broadcasters, Inc., 158 E. 56 St., New York, N.Y.—B,C,F,N,O
Telecom, Inc., 1019 Admiral Blvd., Kansas City 6, Mo.—K,P
Telemarine Communications Co., 3040 W. 21st St., Brooklyn 24, N.Y.—B,C,L,N,O
Telephonics Corp., Park Ave., Huntington, N.Y.—P,Q
Transelectric Mfg. Co., Hopewell Rd., Oxford, Pa.—K,O,P
Trebort Radio Co., Pasadena 18, Calif.—K
Trutone Electronic Eng'g., 812 N. Highland Ave., Los Angeles 38, Calif.—C,J,N,O
Union Spring & Mfg. Co., 1057 Summit Ave., Jersey City 7, N.J.—B,C,G,H,N,O
U.S. Instrument Corp., 409 Broad St., Summit, N.J.—Q
U.S. Recording Co., 1121 Vermont Ave., N. W., Washington 5, D.C.—F,L,O
Vacolite Co., 3003 N. Henderson St., Dallas 6, Texas—I,K
Voron & Co., George, 835 N. 19th St., Philadelphia 30, Pa.—K,P
Waveforms, Inc., 333 6th Ave., New York 14, N.Y.—C,N
Webster Electric Co., 1900 Clark St., Racine, Wisc.—B,K,O
Wenzel Projector Co., 2509 S. State St., Chicago 16, Ill.—C
Western Mfg. Co., 1400 W. 22 St., Kearney, Nebr.—B,E,I,J,K,L,P,Q
Western Sound & Electric Labs., 805 S. Fifth St., Milwaukee 4, Wisc.—C,J,K,O
Westrex Corp., 111 Eighth Ave., New York 11, N.Y.—F
Wheeler Insulated Wire Co., 160 E. Aurora St., Waterbury, Conn.—Q
Z&W Machine Products, 5100 St. Clair Ave., Cleveland 3, Ohio—B,O

84—SPEAKERS

- Horns, projector A
- Speakers, ceramic B
- Speakers, crystal B
- Speakers, electrodynamic C
- Speakers, electrostatic K
- Speakers, explosion-proof D
- Speakers, high-fidelity E
- Speakers, magnetic F
- Speakers, PM dynamic G
- Tweeters H
- Woofers I

Alco Electronics Mfg. Co., 3 Wolcott Ave., Lawrence, Mass.—H
ALTEC-LANSING CORP., 9356 Santa Monica Blvd., Beverly Hills, Calif.—A,E,G,I
ATLAS SOUND CORP., 1449 39 St., Brooklyn 18, N.Y.—A,D,E,G,H
Audiocraft Inc., 77 S. 6 St., B'klyn 11, N.Y.—A,C
Beam Instruments Corp., 350 5 Ave., New York 1, N.Y.—A,D,E,G,H,I
Becker Electronics Mfg. Corp., 1041 Rockaway Ave., Valley Stream, L.I., N.Y.—G
Best Mfg. Co., 1200 Grove St., Irvington 11, N.J.—C,G
Bozak Co., R. T., 114 Manhattan St., Stamford, Conn.—E,G,H,I
British Electronic Sales, 23-03 46 Rd., Long Island City, N.Y.—E,G,H,I,K
British Industries Corp., 164 Duane St., New York 13, N.Y.—E,H,I
Brociner Electronics Lab., 344 E. 32nd St., New York 16, N.Y.—A,G
Brooks Radio & TV Corp., 54 Vesey St., New York 7, N.Y.—B,E,F
Carbonneau Industries, 100 Lexington Ave., S.W., Grand Rapids, Mich.—E,G,H
Cleveland Electronics, 6611 Euclid Ave., Cleveland 3, Ohio—C,E,F,G,H
Consolidated Radio Products Co., 350 W. Erie St., Chicago 10, Ill.—C,E,F,G,H,I
Crawford Dimension Co., 456 N. Rodeo Dr., Beverly Hills, Calif.—E,G
Crescent Industries, 5900 W. Touhy Ave., Chicago 31, Ill.—E,F,G,H,I
C-S. Mfg. Co., 4089 Lincoln Blvd., Venice, Calif.—E,F,I
Delco Radio Div., General Motors Corp., Kokomo, Ind.—G

DeMurr Eng'g & Mfg. Co., Lawrence Mass. E.
 Dilks Co., Derby Ave., Seymour, Conn.—A
 DuKane Corp., St. Charles, Ill.—A.F.
 Duotone Co., 77 Walling Terrace, Keyport,
 N.J.—E
 DX Radio Products Co., 2300 Armitage Ave.,
 Chicago 47, Ill.—F.G.H.I
 Eetro, Inc., 425 S. Sandusky St., Delaware,
 Ohio.—F
 Electronic Workshop, 26 W. 8th St., New
 York 11, N.Y.—A.C.E.F.G.H.I
 Electro-Sound Corp., 115 Halleck St., Boston,
 Mass.—D.E.F.H.I
 Electro-Voice, Inc., Cecil & Carroll Sts., Bu-
 chanan, Mich.—A.C.E.G.H.I
 Eltran Corp., 113 W. Station St., St. Anne,
 Ill.—F.G.H.I
 GALBRAITH & SON, G. C., 450 Ave. of the
 Americas, New York 11, N.Y.—A
 General Communications, One Mile and Janes-
 ville Rd., Ft. Atkinson, Wis.—E
 GENERAL ELECTRIC CO., Broadcast Equip.
 & Commercial Equip. Div., Electronics Park,
 Syracuse, N.Y.—E.G
 Glaser-Steers Corp., 2 Main St., Belleville,
 N.J.—C.D.F.G
 GRAYBAR ELECTRIC CO., 420 Lexington
 Ave., New York 17, N.Y.—B.C.D.E.F.G.H.I
 Gulton Mfg. Corp., 212 Durham Ave., Metu-
 chen, N.J.—J
 Hartley & Co., H. A., 521 E. 162nd St., Bronx
 5, N.Y.—E.G
 Hawley Products Co., 333 N. 6th Ave., St.
 Charles, Ill.—A
 Heppner Mfg. Co., P.O. Box 1207 Round
 Lake, Ill.—C.E.G.H.I
 Horton Machine Products Co., 1091 Rockaway
 Ave., Valley Stream, L.I., N.Y.—G
 Int'l. Electronics Corp., 147 Parkhouse St.,
 Dallas 2, Texas.—E
 Jensen Mfg. Co., 6601 S. Laramie Ave., Chi-
 cago 38, Ill.—A.C.E.G.H.I
 Klipsch & Associates, P.O. Box 64, Hope, Ark.
 H.I
 Lansing Sound Inc., James B., 2439 Fletcher
 Dr., Los Angeles 39, Calif.—F.H.I
 Lear, Inc., 11916 W. Pico Blvd., Los Angeles,
 64, Calif.—G
 MAGNAVOX CO., Fort Wayne 4, Ind.—C.G.H.I
 Molded Insulation Co., 335 E. Price St., Phila-
 delphia 44, Pa.—G
 NATIONAL CO., 61 Sherman St., Malden,
 Mass.—G
 Networks Electronic Corp., 14806 Oxnard St.,
 Van Nuys, Calif.—E
 Optron Mfg. Co., 3223 N. Sheffield Ave., Chi-
 cago 13, Ill.—G
 Oxford Electric Corp., 3911 S. Michigan Ave.,
 Chicago 15, Ill.—C.E.G.H.I
 Permoflux Corp., 4900 W. Grand Ave., Chi-
 cago 39, Ill.—C.D.E.F.H.I
 PHILCO CORP., Accessory Div., "A" & Alle-
 gheny Ave., Philadelphia 34, Pa.—F.G
 Philmore Mfg. Co., 113 University Pl., New
 York 3, N.Y.—F
 Physical Research Associates, 1 Azurelee Dr.,
 Malibu, Calif.—E.H.I.J
 Quam-Nichols Co., 234 E. Marquette Blvd.,
 Chicago 37, Ill.—C.E.F.G.H
 Quincy Speaker Mfg. Co., 221 Oak St., Quincy,
 Ill.—C.D.E.G.H.I
 Racon Electric Co., 1261 Broadway, New York
 1, N.Y.—A.D.E.G.H.I
 RADIO CORP. OF AMERICA, RCA Victor
 Div., Eng'g. Products Div., Camden 2, N.J.—
 C.D.E.G.H.I
 RADIO CORP. OF AMERICA, RCA Tube
 Dept., 115 S. 5 St., Harrison, N.J.—C.D.E.
 F.G.H.I
 Radio Recorders, 7000 Santa Monica Blvd.,
 Hollywood 38, Calif.—E
 Railway Communications, Smith Rd. & Glen-
 wood, Raytown, Mo.—G
 Remler Co., 2101 Bryant St., San Francisco
 10, Calif.—C
 Rola Co., 2530 Superior Ave., Cleveland 14,
 Ohio.—C.G
 Rowe Industries, 1702 Wayne St., Toledo 9,
 Ohio—A.D.E.H.I
 Stephens Mfg. Corp., 8538 Warner Dr., Cul-
 ver City, Calif.—A.C.D.E.G.H.I
 Stromberg-Carlson Co., 100 Carlson Rd.,
 Rochester 3, N.Y.—E.G.H.I
 Telemarine Communications Co., 3040 W. 21
 St., Brooklyn 24, N.Y.—C.D
 Telax, 1633 Rustia St., St. Paul 1, Minn.—F.G
 Ultrasonic Corp., 61 Rogers St., Cambridge 42,
 Mass.—E
 University Loudspeakers Inc., 80 S. Kensico
 Ave., White Plains, N.Y.—A.D.E.G.H.I
 Utah Radio Products Co., 1123 E. Franklin
 St., Huntington, Ind.—E.F.G.H.I
 Wright, Inc., 2233 Univ. Ave., St. Paul, Minn.
 —G
 Wright Zimmerman, Inc., 330 E Ave., New
 Brighton 12, Minn.—G

85—SPEAKER ACCESSORIES

Acoustic chambers A
 Baffles B
 Cabinets C
 Grill cloths D
 Grills, metal L
 Coils, crossover E
 Coils, field F



Cones G
 Driver, PM M
 Exciters, field I
 Networks, crossover M
 Shims, adjusting J
 Sound absorbent material N
 Stands K

Acme Coil & Transformer Corp., 1915 N.
 Clybourne Ave., Chicago 14, Ill.—E.F
 Acoustical Products Mfg. Co., Dorsa Ave.,
 Livingston, N.J.—G
 ALTEC LANSING CORP., 9356 Santa Monica
 Blvd., Beverly Hills, Calif.—B.C.M
 American Silver Co., 36-07 Prince St., Flush-
 ing 54, N.Y.—J
 American Wood Working Co., 1682 N. Lowell
 Ave., Chicago 39, Ill.—B.C.J
 Angle Genesee Corp., 107 Morris Dr., Roches-
 ter 10, N.Y.—A.B.C
 ATLAS SOUND CORP., 1449 39 St., Brooklyn
 18, N.Y.—A.B.C.D.H.I.K.L.M
 Auburn Mfg. Co., Stack St., Middletown,
 Conn.—J
 Audicraft, 77 S. 5 St., Brooklyn 11, N.Y.—H
 Beam Instruments Corp., 350 6 Ave., New
 York 1, N.Y.—C.M
 Besteract Products Co., 626 Broadway, New
 York 12, N.Y.—D.L
 Best Mfg. Co., 1200 Grove St., Irvington 11,
 N.J.—G
 Bittermann Electric Co., Barlow & Grove
 Sts., Canaan, Conn.—E
 Bogen Co., David, 29 9 Ave., New York 14,
 N.Y.—A.B.C
 British Industries Corp., 164 Duane St. New
 York 13, N.Y.—L.M
 Brociner Electronics Lab., 344 E. 32nd St.,
 New York 16, N.Y.—M
 Brooks & Perkins, 1950 W. Fort St., Detroit
 16, Mich.—C
 BUD RADIO INC., 2118 E 55 St., Cleveland 3,
 Ohio—B.C.L
 Butler Mfg. Co., B. R., 3150 Randolph St.,
 Bellwood, Ill.—H
 Califone Corp., 1041 N. Sycamore Ave., Hol-
 lywood 38, Calif.—B
 Callcraft, Inc., Jandus Rd., Cary, Ill.—E.F
 Coil Eng'g. & Mfg. Co., Roanoke, Ind.—F
 Consolidated Radio Products Co., 350 W. Erie
 St., Chicago 10, Ill.—F.M
 Cordware Eng'g., 2195-42 Ave., Oakland 1, Calif.
 —F
 Corry-Jamestown Mfg. Corp., 44 N. Center
 St., Corry, Pa.—C
 Custom Electronics, 813 Chartres St., New
 Orleans, La.—A.B.C
 D & M Products, 13316 Hamilton Ave., Detroit
 3, Mich.—B.I
 DuKane Corp., St. Charles, Ill.—B
 Duotone Co., 77 Walling Terrace, Keyport,
 N.J.—B
 Electronic Workshop, 26 W. 8th St., New
 York 11, N.Y.—A.B.C.D.E.H.I.M.N
 Electro-Sound Corp., 115 Halleck St., Boston,
 Mass.—B.C.D.E.H.L.M.N
 Electro-Technics, Inc., 198 Albion Ave., Pat-
 erson, N.J.—E.P
 Electro-Voice, Inc., Cecil & Carroll Sts., Bu-
 chanan, Mich.—A.B.C.E.H.M
 Eller Woodcraft Corp., 431 W 28 St. New
 York 1, N.Y.—B.C
 El-Rad Mfg. Co., 2800 W. Cullom Ave., Chi-
 cago 18, Ill.—M
 Fidelity Products Co., 2 Lackawanna Pl., S.
 Orange, N.J.—B
 Fisher Radio Corp., 21-21 44th Dr., Long Is-
 land City 1, N.Y.—A.B.C
 Gee-Lar Mfg. Co., 819 Elm St., Rockford, Ill.
 —D
 General Cement Mfg. Co., 919 Taylor Ave.,
 Rockford, Ill.—D.J.L.N
 GENERAL ELECTRIC CO., RADIO-TV
 DEPT., Electronics Park, Syracuse, N.Y.—B
 G & H Wood Prods. Co., 75 N. 11th St.,
 Brooklyn 11, N.Y.—B.C
 Glass Fibers Inc., 1810 Madison Ave., Toledo
 2, Ohio—N
 Hamilton Electronics Corp., 2726 Pratt Ave.,
 Chicago 45, Ill.—B
 Hartley & Co., H. A., 521 E. 162nd St., Bronx
 5, N.Y.—A.C.G
 Hawley Products Co., 335 N 6 St., St. Charles,
 Ill.—G
 Helko Products Co., 243 W. 55th St., New
 York 19, N.Y.—J
 Houlihan Co., T. J., 2508 W. Lawrence Ave.,
 Chicago 25, Ill.—F
 Industrial Rectifier Co., 161 Washington St.,
 New York 6, N.Y.—I
 Insuline Corp. of America, 186 Granite St.,
 Manchester, N.H.—C.L
 Int'l. Electronics Corp., 147 Parkhouse St.,
 Dallas 2, Texas.—E

Jensen Mfg. Co., 6601 S. Laramie Ave., Chi-
 cago 38, Ill.—A.B.C.F.G.H.M
 J F D Mfg. Co., 6101 16 Ave., Brooklyn 4, N.Y.
 —D
 Johns-Manville, 22 E. 40th St., New York 17,
 N.Y.—A.N
 Klipsch & Associates, P.O. Box 64, Hope,
 Ark.—E.M
 Lansing Sound Inc., James B., 2439 Fletcher
 Dr., Los Angeles 39, Calif.—C.H.M
 Magna Electronics Inc., 9810 Anza Blvd., In-
 glewood, Calif.—B.C
 Magnavox Co., Ft. Wayne 4, Ind.—F
 Marine View Electronics, 744 E. 138th St.,
 New York 54, N.Y.—M
 National Sound Equip. Co., 1212 Farnam St.,
 Omaha, Nebr.—A.B.C
 Newcomb Audio Products Co., 6824 Lexing-
 ton Ave., Hollywood 38, Calif.—B
 Oxford Electric Corp., 3911 S. Michigan Ave.,
 Chicago 15, Ill.—F
 Patrick Brothers Inc., 1938 N. Springfield
 Ave., Chicago 47, Ill.—K
 Pentron Corp., 221 E. Cullerton Ave., Chi-
 cago 39, Ill.—B
 Permoflux Corp., 4900 W. Grand Ave., Chi-
 cago 39, Ill.—A.B.C.E.M
 Philmore Mfg. Co., 113 University Pl., New
 York 3, N.Y.—B
 Physical Research Associates, 1 Azurelee Dr.,
 Malibu, Calif.—A.C
 Pickard & Burns, 240 Highland Ave., Need-
 ham, Mass.—C
 Plymouth Electronics Corp., 50 Kingsbury
 St., Worcester, Mass.—C.E
 Quam-Nichols Co., 234 E. Marquette Blvd.,
 Chicago 37, Ill.—H
 Racon Electric Co., 1261 Broadway, New York
 1, N.Y.—A.B.H.M
 RADIO CORP. OF AMERICA, RCA Victor
 Div., Eng'g. Products Div., Camden 2, N.J.—
 A.B.C
 Radio-Matic of America, 760 Ramsey Ave.,
 Hillsdale, N.J.—B.C
 Radio & TV Inc., Brunswick Div., 119 W. 57
 St., New York 19, N.Y.—B
 Rapid Die & Molding Co., 3901 Wesley Terrace,
 Schiller Park, Ill.—G
 Raytor Corp., 5th St. & Cannon Ave., Lans-
 dales, Pa.—C
 Rigidized Metals Corp., 658 Ohio St., Buffalo
 3, N.Y.—L
 River Edge Industries, 5 River Edge Rd.,
 River Edge, N.J.—A.B.C.K
 R.J. Audio Products, 164 Duane St., New York
 13, N.Y.—B
 Rowe Industries, 1702 Wayne St., Toledo 9,
 Ohio—H.M
 Scott Inc., Herman Hosmer, 385 Putnam Ave.,
 Cambridge 39, Mass.—M
 Semrow Products Co., 6120 N. W. Highway,
 Chicago 31, Ill.—B.D
 Smith-Meeker Eng'g. Co., 157 Chambers St.,
 New York 7, N.Y.—L
 S.O.S. Cinema Supply Corp., 602 W. 52nd St.,
 New York 19, N.Y.—A.B.C.I.M
 Spaulding Fibre Co., 310 Wheeler St., Tona-
 wanda, N.Y.—B
 Square Root Mfg. Corp., 391 Saw Mill River
 Rd., Yonkers 2, N.Y.—E.M
 Stephens Mfg. Corp., 8538 Warner Dr., Cul-
 ver City, Calif.—A.B.C.E.F.G.H.I.M
 Stevens Products, 86 Main St., E. Orange,
 N.J.—G
 Stromberg-Carlson Co., Rochester 3, N.Y.—
 A.B.C
 Television Co. of America, 1761 Lincoln Blvd.,
 Santa Monica, Calif.—C
 Thompson Clock Co., H. C., 38 Federal St.,
 Bristol, Conn.—K
 Trutone Electronics Inc., 812 N. Highland
 Ave., Los Angeles 38, Calif.—C.M
 U. S. Recording Co., 1121 Vermont Ave.,
 N. W. Washington 5, D.C.—H.K
 UNIVERSITY LOUDSPEAKERS INC., 80 S.
 Kensico Ave., White Plains, N.Y.—B.H.M
 Utah Radio Products Co., 1123 E. Franklin
 St., Huntington, Ind.—B.C.F
 Waldom Electronics, Inc., 911 N. Larrabee
 St., Chicago 10, Ill.—F.G
 Walco Electronics Corp., 3225 Exposition
 Pl., Los Angeles 18, Calif.—D.J.L
 Woodall Industries, Inc., 7569 E. McNichol
 Rd., Detroit 34, Mich.—C
 Wright, Inc., 2233 University Ave., St. Paul
 14, Minn.—B.C

86—STUDIO EQUIPMENT, AUDIO

Amplifiers, distribution A
 Consoles, audio C
 Consoles, control D
 Consoles, remote switching F
 Controls, master E
 Distribution equipment G
 Preamplifiers O
 Receivers, cus H
 Receivers, studio I
 Remote audio equipment J
 Remote pickup, audio K
 Special effects equipment L

Studio transmitter links M
Transmitters, cue N

Adler Communications Labs., 1 Le Fevre Lane, New Rochelle, N.Y.—C
AEROVOX CORP., 740 Belleville Ave., New Bedford, Mass.—C
ALTEC LANSING CORP., 9356 Santa Monica Blvd., Beverly Hills, Calif.—C
American Radiotelephone Co., St. Petersburg, Fla.—J
Audio Instrument Co., 133 W. 14 St., New York 11, N.Y.—I
 Authorized Mfrs. Service, 919 Wyckoff Ave., Brooklyn 27, N.Y.—CO
Baugham Co., E. J., 250 S. Central, Los Angeles 13, Calif.—A,C,E,F,G,H,K,L,M,N
BERNDT-BACH, INC., Auricon Div., 6916 Romaine St., Hollywood 38, Calif.—CO
Bone Eng'g Corp., 701 W. Broadway, Glendale 4, Calif.—D,E
Brociner Electronics Lab., 344 E. 32nd St., New York 16, N.Y.—O
Century Lighting Co., 521 W. 43 St., New York 25, N.Y.—F
CINEMA ENGG. CO. DIV., AEROVOX CORP., 1100 Chestnut St., Burbank, Calif.—C,D,E,G,O
Collins Radio Co., 855 35 St., N. E., Cedar Rapids, Iowa—N
Corry-Jamestown Mfg. Corp., 44 N. Center St., Corry, Pa.—C,D,F
Custom Electronics Corp., 738 Speedwell Ave., Morris Plains, N.J.—H,N
Daven Co., 191 Central Ave., Newark 4, N.J.—C,D,E,G
Deagen, Inc., J. C., 1770 W. Berceau Ave., Chicago 13, Ill.—L
DUMONT LABS. INC., ALLEN B., 2 Main Ave., Passaic, N.J.—A,C,D,E,F,G,J,K,L,M
Electronic Development Lab., 43-07 23 Ave., Long Island City 5, N.Y.—A,C,D,E,O
Espey Mfg. Co., 528 E. 72 St., New York 21, N.Y.—A,C,F,J,K,M,N
FAIRCHILD RECORDING EQUIP. CORP., 154 St. & 7 Ave., Whitestone, N.Y.—O
FEDERAL TELECOMMUNICATION LABS., INC., 500 Washington Pl., Nutley, N.J.—A,E,F,G,M,N
GATES RADIO CO., 123 Hampshire St., Quincy, Ill.—A,C,D,E,F,G,J,I,O
General Communications, P O Box 169, Fort Atkinson, Wis.—A,C,D,E,F,G,J,O
GENERAL ELECTRIC CO., Broadcast Equip. & Commercial Equip. Div., Electronics Park, Syracuse, N.Y.—A,C,D,E,F,G,M,O
GENERAL PRECISION LAB., 63 Bedford Rd., Pleasantville, N.Y.—C
Gotham Audio Devel Corp., 2 W. 46th St., New York 36, N.Y.—F
GRAYBAR ELECTRIC CO., 420 Lexington Ave., New York 17, N.Y.—C,J
GRAY RESEARCH & DEVEL. CO., 658 Hilliard St., Manchester, Conn.—L
Hammarlund Mfg. Co., 460 W. 34th St., New York 1, N.Y.—F
Hycor Co., 11423 Vanowen St., North Hollywood, Calif.—C
Intertronics Corp., 2432 Grand Concourse, New York 58, N.Y.—A,C,J
Int'l Electronics Corp., 147 Parkhouse St., Dallas 2, Texas.—C
Int'l Research Assoc., 2221 Warwick Ave., Santa Monica, Calif.—A,K
Kilgen Organ Co., 4632 W. Florissant Ave., St. Louis 15, Mo.—D,E
LANGEVIN MFG. CORP., 37 W. 65th St., New York, N.Y.—A
Magna Electronics Co., 9810 Anza Blvd., Inglewood 1, Calif.—O
Metal Products Co., Craighead St., Nashville 4, Tenn.—C,M
Oberline Ltd., 6411 Hollywood Blvd., Hollywood 28, Calif.—A,C,D,E,J,O
O'Brien Electric Corp., 6514 Santa Monica Blvd., Hollywood 38, Calif.—F
Pilmore Mfg. Co., 113 University Pl., New York 3, N.Y.—I
Pekering & Co., 309 Woods Ave., Oceanside, N.Y.—O
Pastastics & Electronics Corp., 272 Northland Ave., Buffalo 8, N.Y.—H,N,O
RADIO CORP. OF AMERICA, RCA Victor Div., Eng'g. Products Div., Camden 2, N.J.—A,C,D,E,F,G,J,M,O
Radio Music Corp., 84 S. Water St., Port Chester, N.Y.—A
Ringtone, Inc., 73 Winthrop St., Newark 4, N.J.—C
Sevesound Co., 35-54 36 St., Long Island City, 1, N.Y.—D
Sott Inc., Herman Hosmer, 385 Putnam Ave., Cambridge 39, Mass.—A,O
Strader Mfg. Co., 2803 M. St., N. W., Washington, D.C.—C,J
Smith Meeker Eng'g. Co., 157 Chambers St., New York 7, N.Y.—C,D,E,F,G
Special Effects & Equip. Inc., 418 W. 54 St., New York 19, N.Y.—L
Square Root Mfg. Corp., 391 Saw Mill River Rd., Yonkers 2, N.Y.—A
Standard Electronics Corp., 285 Emmet St., Newark 5, N.J.—A,C,F,J,O
Stephens Mfg. Corp., 8538 Warner Dr., Culver City, Calif.—A,C
Star-V Productions, Inc., 5919 Hollywood Blvd., Hollywood 28, Calif.—L
Tele-Broadcasters, Inc., 168 E. 56th St., New York, N.Y.—A,C,D,E,F,G,H,I,J,L,M

TELECHROME, INC., 88 Merrick Rd., Amityville, L.I., N.Y.—A,G,I,L
Telescreen Corp., 36 Grove St., New Canaan, Conn.—I
TEL-INSTRUMENT CO., 728 Garden St., Carlstadt, N.J.—M
U. S. Recording Co., 1121 Vermont Ave., N. W., Washington 5, D.C.—A,C
Victorlite Industries., 4117 W. Jefferson Blvd., Los Angeles 16, Calif.—L
Waveforms, Inc., 333 6th Ave., New York 14, N.Y.—C,O
Western Mfg. Co., 1400 W. 22 St., Kearney, Nebr.—H,N

87—STUDIO EQUIPMENT, TV
(Color & Black-and-White)

Adapters, field sequential A
Adapters, line & dot sequential B
Amplifiers, distribution C
Amplifiers, montage D
Amplifiers, stabilizing E
Amplifiers, video faders AAC
Camera cranes F
Camera dollies G
Camera switching equipment H
Camera turrets I
Cameras, field J
Cameras, studio K
Cameras, TV film L
Color TV equipment AS
Color TV camera chains AT
Color TV film chains AU
Color TV generators AV
Color TV monitors AW
Color TV pickup tubes AX
Color TV slide scanners AY
Color TV sync equipment AZ
Color TV test equipment AAA
Consoles, control M
Consoles, remote switching N
Control equipment S
Controls, camera O
Controls, remote camera P
Controls, master Q
Converters, field sequential T
Distribution equipment U
Generators, color signal V
Generators, Sync W
Generators, sync stretchers X
Generators, TV signal Y
Lenses Z
Monitors, line & program AA
Panels, video patch AB
Projection units AC
Projectors, TV film AD
Projectors, TV kaleidoscope AE
Projectors, TV mirror multiplexers AF
Projectors, TV rear screen AG
Projectors, TV slide AH
Projectors, TV special purpose AI
Prompting equipment AAB
Receivers, cue AJ
Receivers, studio AK
Remote pickup, video AL
Scanners, flying spot AM
Special effects equipment AN
Studio transmitter links AO
Transmitters, cue AP
Tripods AQ
Tubes, color AR

Adler Communications Labs., 1 Le Fevre Lane, New Rochelle, N.Y.—C,H,M,N,AA,AB
Aerolite Electronics Corp., 507 26 St., Union City, N.J.—AB
Alfax Paper & Eng'g. Co., Washington St., Westboro, Mass.—AM
American Optical Co., Buffalo 15, N.Y.—AG, AH
Ampro Corp., 2835 N. Western Ave., Chicago 18, Ill.—AD,AG
Audio Equipment Sales, 153 W. 33 St., New York 1, N.Y.—AB
Bache, Semon & Co., 636 Greenwich St., New York 14, N.Y.—Z
Background Engineers, 7313 Santa Monica Blvd., Hollywood 46, Calif.—AG,AH
Baugham Co., A. J., 350 S. Central, Los Angeles 18, Calif.—C,D,E,F,G,H,I,J,L,M,N,O,P,Q,R,U,W,X,Z,AA,AB,AC,AD,AE,AF,AG,AH,AJ,AL,AM,AN,AP,AO,AQ
Bausch & Lomb Optical Co., 623 St. Paul St., Rochester, N.Y.—AG,AH
Bayside Watch Tool Co., 20-02 Utopia Parkway, Whitestone 67, N.Y.—J,K,L
BERNDT-BACH, INC., Auricon Div., 6916 Romaine St., Hollywood 38, Calif.—L,LAU
Beseler Co., Chas., 60 Badger St., Newark 8, N.J.—Z,AC,AG,AH,AI

Bolde Screen & Projector Co., 8829 Venice Blvd., Los Angeles 34, Calif.—AC,AG,AH
Bone Eng'g Corp., 701 W. Broadway, Glendale 4, Calif.—M
British Electronic Sales, 23-03 45 Rd., Long Island City, N.Y.—Q,S,Z
Buhl Optical Co., 1009 Beech Ave., Pittsburgh, 12, Pa.—Z
BURKE & JAMES, 321 S. Wabash Ave., Chicago 4, Ill.—Z
CAMERA EQUIPMENT CO., 1600 Broadway, New York 19, N.Y.—F,G,I,IAQ
Camera Murt, Inc., 1845 Broadway, New York 23, N.Y.—GAQ
Capehart-Farnsworth Co., Div. I. T. & T., Fort Wayne, Ind.—J,P
Century Lighting Inc., 521 W. 43rd St., New York 25, N.Y.—M,N,S,AG,AI
CINEMA ENGG. CO. DIV. AEROVOX CORP., 1100 Chestnut St., Burbank, Calif.—M
Clegg Laboratories, Inc., 142 S. Livingston Ave., Livingston, N.J.—V,W,X,Y,AV,AZ
Collins Radio Co., 855 33rd St., N.E., Cedar Rapids, Iowa—M,N
Colorvision Plastics, Inc., 247 Atlantic Ave., Boston 10, Mass.—Z
Conrac, Inc., 19217 E. Foothill Blvd., Glendora, Calif.—AA,ALAW
Corry-Jamestown Mfg. Corp., 44 N. Center St., Corry, Pa.—M,N
Dage Electronics Corp., 69 N. 2 St., Beech Grove, Ind.—J, K, L, M, O, P, R, W, AA, AF, AI, AT, AU, AV, AW, AZ
Delaware Optical Labs., 36 S. Williams St., Lansdowne, Pa.—Z,AC
Dorn Equipment Corp., 88 Broad St., Boston 10, Mass.—AA,AB
Dorothea Mechanisms, Inc., Gale, 81-01 Broadway, Elmhurst, L.I., N.Y.—AH
DUMONT LABS. INC., ALLEN B., TV Transmitter Dept., Mobile Comm. Dept., 1500 Main St., Clifton, N.J.—C, D, E, G, H, I, J, K, L, M, N, O, P, Q, R, S, U, V, W, X, Y, Z, AA, AB, AC, AD, AE, AF, AH, AK, AM, AN, AO, AU, AV, AW, AY, AZ
Eastern Precision Resistor Corp., 130-11 90th Ave., Richmond Hill 18, N.Y.—C
FEDERAL TELECOMMUNICATION LABS., INC., 500 Washington Place, Nutley, N.J.—C,D,E,J,K,L,M,N,Q,U,W,AA,AB,AL,AM,AO
Flett Lab., 3711 Marshall Rd., Drexel Hill, Pa.—G,I,AC,AF,AH,AI
GATES RADIO CO., 123 Hampshire St., Quincy, Ill.—E
General Communications, Box 169, Fort Atkinson, Wis.—C, D, E, M, N, O, Q, R, U, AA, AB
GENERAL ELECTRIC CO., Broadcast Equip. & Commercial Equip. Div., Electronics Park, Syracuse, N. Y.—A,R,C,D,E,J,K,L,M,N,O,P,Q,R,S,T,U,V,W,X,Y,AA,AB,AC,AD,AH,AT,AU,AV,AW,AY,AZ
GENERAL PRECISION LAB., 63 Bedford Rd., Pleasantville, N.Y.—A,C,D,J,K,L,M,N,P,Y,Z,AA,AC,AD,AM,ATAU,AY,AZ
Gotham Audio Devel Corp., 2 W. 46th St., New York 36, N.Y.—C,N,Q
GRAYBAR ELECTRIC CO., Nat'l Headquarters, 420 Lexington Ave., New York 17, N.Y.—K,Q,AD,AO
Gray Research & Devel Co., 658 Hilliard St., Manchester, Conn.—I,AF,AH,AI
Gurley, W. & L. E., Fulton St., Troy, N.Y.—AG,AH
Harwood Mfg. Co., 466 W. Superior St., Chicago 10, Ill.—AQ
Hewlett-Packard Co., 395 Page Mill Rd., Palo Alto, Calif.—AW
HOUSTON FEARLESS CORP., 11801 W. Olympic Blvd., Los Angeles 64, Calif.—F,G,P,AQ
Hycor Mfg. Co., 2961 E. Colorado St., Pasadena 8, Calif.—AAA
Industrial Television Inc., 369 Lexington Ave., Clifton, N.J.—V,AW
Int'l Research Associates, 2221 Warwick Ave., Santa Monica, Calif.—CAI
Int'l Telemeter Corp., 2000 Stoner Ave., Los Angeles 25, Calif.—A,G,U
Kalbfell Labs., 1090 Morena Blvd., San Diego 10, Calif.—C, J, K, L, O, P, Q, R, W, Z, AA, AD, AK, AL
Kay Electric Co., 14 Maple Ave., Pine Brook, N.J.—V,Y,AV,AAA
Kilgen Organ Co., 4632 W. Florissant Ave., St. Louis 15, Mo.—S
Kiehl Bros., 321 W. 50 St., New York 19, N.Y.—AH
Libbey-Owens-Ford Glass Co., Liberty Mirror Div., Brackenridge, Pa.—AF
Marconi's Wireless Telegraph Co., 23 Beaver St., New York 4, N.Y.—C,E,F,G,H,J,K,L,M,N,O,P,U,W,AA
Maurer Inc., J. A., 37-01 31st St., Long Island City 1, N.Y.—J,K,O,P,Z,QAQ
Metal Products Co. Craighead St., Nashville 4, Tenn.—CAO
Meyer-Opticraft, Inc., 39 W. 60 St., New York 23, N.Y.—Z
Multi-Tron Laboratory, 4624 W. Washington Blvd., Chicago 44, Ill.—AT,AX
National Cine Equip., 209 W. 48 St., New York 36, N.Y.—G
O'Brien Electric Corp., 6514 Santa Monica Blvd., Hollywood 38, Calif.—N
Pacific Mercury TV Mfg. Corp., 5955 Van Nuys Blvd., Van Nuys, Calif.—V,W,Y,AM,AV,AY,AZ,AAA
Pacific Universal Products Corp., 168 Vista Ave., Pasadena 8, Calif.—Z

Panero Mirrors, Inc., 2958 Los Feliz Blvd., Los Angeles 39, Calif.—Z
 Par Products Corp., 926 N. Citrus Ave., Hollywood 38, Calif.—I,Z
 Patrick Bros., 1938 N. Springfield Ave., Chicago 47, Ill.—AQ
 PHILCO CORP., Gov't. & Industrial Div., 4700 Wissahickon Ave., Philadelphia 44, Pa.—AD,AF,AH,AU,AY,AAA
 Phillmore Mfg. Co., 113 University Pl., New York 3, N.Y.—AK
 Plastics & Electronics Corp., 272 Northland Ave., Buffalo 8, N.Y.—AJ,AP
 POLARAD ELECTRONICS CORP., 100 Metropolitan Ave., Brooklyn 11, N.Y.—C,V,W,Y,AJ,AK,AM,AP,AW,AZ
 POLYTECHNIC RESEARCH & DEVELOP. CO., 202 Tillary St., Brooklyn 1, N.Y.—V,Y
 PONDER & BEST, 814 N. Cole Ave., Hollywood 38, Calif.—L,Z
 Precision Products, 719 7 St., N. W., Washington, D.C.—Z
 Radio City Products Co., 101 W. 31st St., New York 1, N.Y.—W,Y
 RADIO CORP. OF AMERICA, RCA Victor Div., Eng'g. Products Div., Camden 2, N.J. F. G. H. I. J. K. L. M. N. O. P. Q. R. S. T. V. W. X. Y. AA. AC. AD. AH. AI. AT. AU. AV. AW. AX. AY. AZ. AAA
 Rauland Corp., 4245 N. Knox Ave., Chicago 41, Ill.—AR
 Raven Screen Corp., 124 E. 124 St., New York 35, N.Y.—AG
 Sierra Electronic Corp., 1050 Brittan Ave., San Carlos, Calif.—AA
 S.O.S. Cinema Supply Corp., 602 W. 52 St., New York 19, N.Y.—F, G, J, K, L, O, P, R, Z, AC, AD, AG, AH, AI
 Sound-Screen Supplies, 752 Broadway, New York 3, N.Y.—AG
 Special Effects & Equip., Inc., 418 W. 54 St., New York 19, N.Y.—AG,AN
 Spencer-Kennedy Labs., 186 Mass. Ave., Cambridge 39, Mass.—C
 Standard Electronics Corp., 285 Emmet St., Newark 5, N.J.—C, H, J, K, L, M, N, O, Q, R, S, U, X, AA, AB
 Strong Electric Co., 57 City Park Ave., Toledo 2, Ohio—AH
 T-Bar-V Productions, Inc., 5919 Hollywood Blvd., Hollywood 28, Calif.—AG,AI,AN
 TELECHROME, INC., 88 Merrick Rd., Amityville, L.I., N.Y.—A, B, C, E, V, W, X, Y, AA, AJ, AK, AM, AN, AU, AV, AW, AY, AZ, AAA
 Teletel Services Div., Musicolor Inc., 920 N. Michigan Ave., Chicago 11, Ill.—AI
 Tele Prompter Corp., 270 Park Ave., New York 17, N.Y.—AAB
 Telescreen Corp., 36 Grove St., New Canaan, Conn.—H, I, J, O, P, S, Y, AC, AK, AM
 Television Associates, E. Michigan St., Michigan City, Ind.—G,AF,AQ
 Television Products Co., 1147 N. McCadden Pl., Hollywood 38, Calif.—G,M,N
 Television Specialty Co., 350 W. 31st St., New York 14, N.Y.—G
 Television Utilities Corp., 1315 Jericho Turnpike, New Hyde Park, L.I., N.Y.—AA,AW
 Television Zoomar Corp., 500 5 Ave., New York 36, N.Y.—J
 TEL-INSTRUMENT CO., 728 Garden St., Carlstadt, N.J.—C,D,V,W,Y,AV,AW,AZ,AAA
 Thompson Clock Co., H. C., 38 Federal St., Bristol, Conn.—J,K,L
 Trans-Lux Corp., 1270 Ave. of the Americas, New York 20, N.Y.—AG,AH
 U. S. Recording Co., 1121 Vermont Ave., N. W., Washington 5, D.C.—C
 Victorlite Industries, 4117 W. Jefferson Blvd., Los Angeles 16, Calif.—AG,AH,AI
 Wenzel Projector Co., 2509 S. State St., Chicago 16, Ill.—AC
 Western Mfg. Co., 1400 W. 22 St., Kearney, Neb.—AJ,AP
 WICKES ENG'G. & CONST. CO., 12th St., & Ferry Ave., Camden, N.J.—U,V,AV,AW,AAA
 Williams, Brown & Earle, 904 Chestnut St., Philadelphia 7, Pa.—Z,AC,AQ

88—STUDIO ACCESSORIES

Clocks A
Fire detection & fighting equipment B
Miscellaneous color accessories I
Patch cords C
Power supplies D
Racks, disc storage E
Racks, tape storage F
Rack equipment G
Test equipment H

Aerolite Electronics Corp., 507-26 St., Union City, N.J.—C
 American Electronic Corp., 2040 Colo. Ave., Santa Monica, Calif.—D
 American Wood Working Co., 1682 N. Lowell Ave., Chicago 39, Ill.—G
 Arey Machine Co., 38 Long Ave., Hillside 5, N.J.—C
 Art-Lloyd Metal Products Corp., 2973 Cropsy Ave., Brooklyn 14, N.Y.—G



Audio Equipment Sales, 153 W. 33 St., New York 1, N.Y.—C
 Authorized Mfrs. Service, 919 Wyckoff Ave., Brooklyn 27, N.Y.—D
 Baugham Co., E. J., 350 S. Central, Los Angeles 13, Calif.—C,D
 Bucks County Enterprises, Quakertown, Pa.—E,G,F
 Century Lighting Inc., 521 W. 43 St., New York 25, N.Y.—G,I
 CINEMA ENG'G CO. DIV., AERVOX CORP., 1100 Chestnut St., Burbank, Calif.—C,D,G
 Corry-Jamestown Mfg. Corp., 44 N. Center St., Corry, Pa.—E
 Dimco-Gray Co., 207 E. 6 St., Dayton 2, Ohio.—A
 Dorn Equip. Corp., 68 Broad St., Boston 10, Mass.—C
 DUMONT LABS., INC., ALLEN B., TV Transmitter Dept.; Mobile Comm. Dept., 1500 Main St., Clifton, N.J.—C,D,G,H
 Eastern Precision Resistor Corp., 130-11 90 Ave., Richmond Hill 18, N.Y.—D
 Empire Electronics Co., 166 River St., Paterson 1, N.J.—C
 FEDERAL TELECOMMUNICATION LABS., 500 Washington Place, Nutley, N.J.—C,D
 Feiler Eng'g. & Mfg. Co., 8026 N. Monticello Ave., Skokie, Ill.—B
 GATES RADIO CO., 123 Hampshire St., Quincy, Ill.—D,E,F,G,H
 General Cement Mfg. Co., 919 Taylor Ave., Rockford, Ill.—C
 General Communications, P O Box 169, Fort Atkinson, Wis.—D
 GENERAL ELECTRIC CO., Broadcast Equip. & Commercial Equip. Div., Electronics Park, Syracuse, N.Y.—A
 GRAYHILL, 561 Hillgrove Ave., Lagrange, Ill.—H
 Hall Inc., F. Sumner, Amityville, N.Y.—C,D
 Hamlyn Electronics Corp., 32 Holman Blvd., Hicksville, N.Y.—D
 Hewlett-Packard Co., 395 Page Mill Rd., Palo Alto, Calif.—H
 Industrial Rectifier Co., 161 Washington St., New York 6, N.Y.—D
 Int'l Research Corp., 2221 Warwick Ave., Santa Monica, Calif.—D
 Kay Electric Co., 14 Maple Ave., Pine Brook, N.J.—H
 LANGEVIN MFG. CORP., 37 W. 65th St., New York, N.Y.—D
 Macson Co., 3250 Motor Ave., Los Angeles 34, Calif.—C
 National Electrical Machine Shops, 919 Jesup Blair Dr., Silver Spring, Md.—C
 Neumade Products Corp., 330 W. 42 St., New York 36, N.Y.—E,F
 Neutronic Associates, 87-16 116 St., Richmond Hill, N.Y.—D
 Opad-Green Co., 71 Warren St., New York 7, N.Y.—D
 PHAOSTRON CO., 151 Pasadena Ave., S. Pasadena, Calif.—H
 Plymouth Electronics Corp., 50 Kingsbury St., Worcester, Mass.—D
 POLARAD ELECTRONICS CORP., 100 Metropolitan Ave., Brooklyn 11, N.Y.—H
 Radio City Products Co., 101 W. 31 St., New York 1, N.Y.—C,D,H
 RADIO CORP. OF AMERICA, RCA Victor Div., Eng'g. Products Div., Camden 2, N.J.—C,D
 Reevesound Co., 35-54 36 St., Long Island City, 1, N.Y.—A
 Rupp's Assembling & Mfg. Works, 2341 N. Seminary Ave., Chicago 14, Ill.—C
 Sensitive Research Instrument Corp., 9 Elm Ave., Mt. Vernon, N.Y.—H
 Sorensen & Co., 375 Fairfield Ave., Stamford, Conn.—D
 Spera Electronic Labs., 37-10 33rd St., Long Island City 1, N.Y.—G
 Square Root Mfg. Corp., 391 Saw Mill River Rd., Yonkers 2, N.Y.—H
 STANDARD ELECTRONICS CORP., 285 Emmet St., Newark 5, N.J.—D
 Star Expansion Products Co., 147 Cedar St., New York 6, N.Y.—H
 Technical Products Co., 19 N. Dunlap, Memphis 1, Tenn.—A
 TELECHROME, INC., 88 Merrick Rd., Amityville, L.I., N.Y.—G,H
 Telechron Dept., General Electric Co., Homer Avenue, Ashland, Mass.—A
 Telescreen Corp., 36 Grove St., New Canaan, Conn.—D
 Television Products Co., 1147 N. McCadden Pl., Hollywood 38, Calif.—E,F,G
 TEL-INSTRUMENT CO., 50 Patterson Ave., E. Rutherford, N.J.—D,H
 Thompson Clock Co., H. C., 38 Federal St., Bristol, Conn.—A
 Wallach & Associates, 1582 Hillcrest Rd., Cleveland 18, Ohio.—E,F

89—SWITCHES

Contactors A
Switches, circuit breaker A
Switches, coaxial B
Switches, commutator C
Switches, crossbar D
Switches, decade E
Switches, electronic AF
Switches, float F
Switches, fluorescent lamp starter G
Switches, foot AG
Switches, jack H
Switches, key I
Switches, knife J
Switches, limit AH
Switches, mercury K
Switches, microphone AI
Switches, oil immersed L
Switches, plunger M
Switches, pressure N
Switches, programmer O
Switches, push-button P
Switches, rotary sampling Q
Switches, rotary selector R
Switches, safety-interlock S
Switches, slide T
Switches, snap action U
Switches, stepping V
Switches, telemetering W
Switches, thermal X
Switches, time delay Y
Switches, toggle Z
Switches, turret AJ
Switches, vacuum AA
Switches, wave change receiver AB
Switches, wave change, transmitter AC
Switches, waveguide AD

Acro-Mu Switch Div., Acro Mfg. Co., 2040 E. Main St., Columbus 16, Ohio—U
 ADAMS & WESTLAKE CO., 1025 N. Michigan, Elkhart, Ind.—Y
 Aerolite Electronics Corp., 507 26 St., Union City, N.J.—H,I,J,T,U,Z
 Air Associates, Teterboro, N.J.—U
 AIRTRON INC., 1103 W. Elizabeth Ave., Linden, N.J.—M,AD
 Alina Corp., 401 Broadway, New York 13, N.Y.—Y
 Allen-Bradley Co., 1326 S. 2nd St., Milwaukee 1, Wis.—F,M,N,P,R,Y,AE,AG,AH
 AMERICAN PHENOLIC CORP., 1830 S. 54 Ave., Chicago 50, Ill.—AI
 American Radio Hardware Co., 152 Macqueston Parkway S., Mount Vernon, N.Y.—H,I,P,Z
 American Vacuum Products Corp., 1179 Santa Monica Blvd., W. Los Angeles 25, Calif.—AA
 Anglo Corp., 2037 W. Division St., Chicago 24, Ill.—Y
 Applied Science Corp., P.O. Box 44, Princeton, N.J.—C,O,Q,W
 Arrow-Hart & Hegeman, 103 Hawthorn St., Hartford 6, Conn.—P,R,U,Z,AE,AH
 Authorized Mfrs. Service, 919 Wyckoff Ave., Brooklyn 27, N.Y.—W
 Aurex Corp., 1117 N. Franklin St., Chicago 10, Ill.—U
 Automatic Electric Co., 1033 W. Van Buren St., Chicago 7, Ill.—I,K,R,U,V,AF,AG,AH
 Automatic Metal Products Corp., 315 Berry St., Brooklyn 11, N.Y.—R
 Automatic Switch Co., 391 Lakeside Ave., Orange, N.J.—Y,AE
 Automatic Temperature Control Co., 5212 Palski Ave., Philadelphia 44, Pa.—O,Y
 Auto-Test, Inc., 600 S. Michigan Ave., Chicago 5, Ill.—P
 Barker & Williamson, 237 Fairfield Ave., Upper Darby, Pa.—R
 Bird Electronic Corp., 1800 E. 38 St., Cleveland 16, Ohio—B
 Birnbach Radio Co., 145 Hudson St., New York 13, N.Y.—J,P,T,Z
 BLONDER-TONGUE LABS., 526 North Ave., E. Westfield, N.J.—X
 BOGART MFG. CO., 315 Seigel St., Brooklyn 6, N.Y.—BAD
 Bone Eng'g Corp., 701 W. Broadway, Glendale 4, Calif.—AD
 Bracke-Seib X-Ray Co., 293 Third Ave., New York 10, N.Y.—A
 British Electronic Sales Co., 23-03 45th St., Long Island City 1, N.Y.—H,P,S,T,U,X,Z,AG
 Brubaker Mfg. Co., 9151 Exposition Dr., Los Angeles 34, Calif.—W
 Carling Electric, 505 New Park Ave., W. Hartford 10, Conn.—M,P,T,U,Z
 Carter Parts Co., 213 Institute Pl., Chicago 10, Ill.—A,H,I,M,P,R,Z,AI
 Cascade Research Corp., 53 Victory Lane, Los Gatos, Calif.—AD

CENTRALAB. DIV. GLOBE-UNION INC., 900 E. Keefe Ave., Milwaukee 1, Wisc.—E.I.Q.R.T.Z.AB.AC
Century Electronics, 11844 Oxnard St., Van Nuys, Calif.—AD
Chatham Electronics Corp., 475 Washington St., Newark 2, N.J.—AA
Cherry-Channer Corp., 1488 Skokie Blvd. High Highland Park, Ill.—U
CHICAGO TELEPHONE SUPPLY, 1142 W. Beardsley Ave., Elkhart, Ind.—P.R.U
Cinema Eng'g Co., Div., Aerovox Corp., 1100 Chestnut St., Burbank, Calif.—E.R
Circuit Controls Co., 3201 Peona St., Steger, Ill.—H.I.J.K.P.S.T.U.Z.AH
Clare & Co., C. P., 3101 Pratt Blvd., Chicago 45, Ill.—I.V
Clark Controller Co., 1146 E. 152 St., Cleveland 10, Ohio—F.P.AE.AG.AH
Clark Cooper Co., Market St., Palmyra, N.J.—F.N.X
Clary Multiplier Corp., San Gabriel, Calif.—AF
Clegg Laboratories, Inc., 142 S. Livingston Ave., Livingston, N.J.—AF
Colvin Labs., 12 Court, Morristown, N.J.—N
Comar Electric Co., 3349 W. Addison St., Chicago 18, Ill.—D.U
Conn. Telephone & Electric Co., 70 Britannia St., Meriden, Conn.—H.I.P
Control Products, Inc., 306 Sussex St., Harrison, N.J.—X.Z
Cook Electric, 2700 Southport Ave., Chicago 14, Ill.—N.R.X.Y.AA
CORNING GLASS WORKS, Corning, N.Y.—AF
Cramer Co., Box 49, Centerbrook, Conn.—O.Y
CUNNINGHAM SON & CO., JAMES, 13 Canal St., Rochester 8, N.Y.—D.W
Cunningham Son & Co., James, 13 Canal St., Rochester 8, N.Y.—D.W
Cutler-Hammer, Inc., 436 N. 12 St., Milwaukee 1, Wis.—A.F.J.N.P.R.S.U.V.X.Y.Z.AA, AE.AG.AH
Dalmo Victor Co., 1414 ElCamino Real, San Carlos, Calif.—AD
Danbury-Knudsen, 15 Thorpe St., Danbury, Conn.—B
Daven Co., 191 Central Ave., Newark 4, N.J.—E.Q.R.W
Deitz Co., S. J., 38 River Edge Rd., River Edge, N.J.—AF
DeMornay-Bonardi, Inc., 780 S. Arroyo Pkwy., Pasadena, Calif.—AD
Dietz Co., Henry G., 12-16 Astoria Blvd., Long Island City 2, N.Y.—S
Digital Products, Inc., 7643 Fay Ave., La Jolla, Calif.—C.Q
Dimco-Gray, 207 E. 6 St., Dayton 2, Ohio—Y
Dolinko & Wilkens, 1901 Summit Ave., Union City, N.J.—AA
Dormitzer Electric & Mfg. Co., 5 Hadley St., Cambridge 40, Mass.—G
Douglas Microwave Co., 11 Beechwood Ave., New Rochelle, N.Y.—BAD
Dow-Key Co., Warren, Minn. B
DUMONT LABS., INC., ALLEN B., Instrument Div., 760 Bloomfield Ave., Clifton, N.J.—AF
Durakool, Inc., 1010 N. Main St., Elkhart, Ind.—K.Y
Dwyer Mfg. Co., F. W., 317 S. Western Ave., Chicago 12, Ill.—N
Eagle Electric Mfg. Co., 23-10 Bridge Plaza S., Long Island City, N.Y.—J.Z.AF
Eagle Signal Co., 202 20 St., Moline, Ill.—Y
Eastern Specialty Co., 3627 N. 5th St., Philadelphia 40, Pa.—R
Ebert Electronics Corp., 212-26 Jamaica Ave., Queens Village 28, N.Y.—K.M
Eng'g Co., 1568 S. 1st St., Milwaukee 4, Wisc.—AF
EDISON, INC., THOMAS A., Instrument Division, 93 Lakeside Ave., W. Orange, N.J.—X.Y
ETHEL-MCCULLOUGH, INC., 798 San Mateo Ave., San Bruno, Calif.—AA
Electrical Service Co., 1271 Mission St., San Francisco 3, Calif.—Y.AF
Electric Controller & Mfg. Co., 2700 E. 79 St., Cleveland 4, Ohio—L.AE
Electro Development Co., 6006 W. Washington Blvd., Culver City, Calif.—R
Electromatic Mfg. Corp., 88 University Pl., New York 3, N.Y.—R
Electro Precision Products, 139-30 34 Rd., Flushing 54, N.Y.—B
Electro-Snap Switch & Mfg. Co., 4218 W. Lake St., Chicago 24, Ill.—P.R.S.U.Z.AH
Electro Switch Corp., King Ave., Weymouth MA, Mass.—R.U
Electro-Tech. Equip. Co., 308 Canal St., New York, N.Y.—A.F.H.K.P.U.Z.AE.AG.AH
Electro Tee Corp., 10 Romanelli Ave., S. Hackensack, N.J.—C
Endevco Corp., 689 S. Fair Oaks Ave., Pasadena 2, Calif.—E
Eureka T.V. & Tube Corp., 69 Fifth Ave., Hawthorne, N.J.—U.X.Y
Federal A.C. Switch Corp., 72 Kingsley St., Buffalo 8, N.Y.—AB.AC
FEDERAL TELEPHONE & RADIO CO., DIV. I.T.&T., 100 Kingsland Rd., Clifton, N.J.—L.V
Fenwick Inc., Ashland, Mass.—X
Felden Instrument Co., 2920 N. 4 St., Philadelphia 33, Pa.—AF
F.R. Machine Works, Electronics & X-Ray Div., 44-14 Astoria Blvd., Long Island City 3, N.Y.—AD

Gables Eng'g. Inc., 247 Greco Ave., Coral Gables, Fla.—R
GABRIEL ELECTRONICS DIV., GABRIEL CO., Endicott St., Norwood, Mass.—B
GALBRAITH & SON, 450 6th Ave., New York 11, N.Y.—AH
GEE-LAR MFG. CO., 819 Elm St., Rockford, Ill.—B.P.Q.R.T.U.Z.AF
General Cement Mfg. Co., 919 Taylor Ave., Rockford, Ill.—M.P.S.T.Z
GENERAL COMMUNICATION CO., 681 Beacon St., Boston 15, Mass.—B
General Communications, One mile and Janesville Rd., Ft. Atkinson, Wisc.—R.V
GENERAL CONTROL CO., 1200 Soldiers Field Rd., Boston 34, Mass.—P.Y.AF.AG.AH
General Devices, Inc., P.O. Box 253, Princeton, N.J.—C.O.Q.W.AF
GENERAL ELECTRIC CO., Construction Materials Div., 1285 Boston Ave., Bridgeport 2, Conn.—A.G.K.U.Z
GENERAL ELECTRIC CO., APPARATUS DIV., 1 River Rd., Schenectady 5, N.Y.—F.S.U.Y.Z.AA.AF.AH
GENERAL RADIO CO., 275 Mass. Ave., Cambridge 39, Mass.—D
GIANNINI & CO., G. M., 914 E. Green St., Pasadena 1, Calif.—N
Gorn Electric Co., 845 Main St., Stamford, Conn.—F.N.Y.AA
GRAPHITE METALLIZING CORP., 1015 Neperhan Ave., Yonkers, N.Y.—C
Grason-Stadler Co., 106 Hampshire St., Cambridge 89, Mass.—AF
GRAYHILL, 561 Hillgrove Ave., La Grange, Ill.—P.R.U
Grigsby-Allison Co., 407 N. Salem Ave., Arlington Heights, Ill.—B.E.P.R.T.U.AB
GUARDIAN ELECTRIC MFG. CO., 1621 W. Walnut St., Chicago 12, Ill.—U.V.AE.AF
G.V. Controls Inc., 23 Hollywood Plaza, East Orange, N.J.—X.Y
HART MFG. CO., 110 Bartholomew Ave., Hartford, Conn.—R.Z
Haydon Mfg. Co., 245 E. Elm St., Torrington, Conn.—O.R.Y
Haydon Switch, Inc., 232 N. Elm St., Waterbury 20, Conn.—I.O.P.R.U.V.W.Y.AH
Healy-Ruff Co., 772 Hampden Ave., St. Paul 14, Minn.—F.N
Heath Co., 305 Territorial, Benton Harbor, Mich.—AF
Heineman Electric Co., Penn. Ave. & Plum St., Trenton 2, N.J.—A.Y.Z
Hetherington, Inc., Sharon Hill, Pa.—J.M.P.
R.T.U.Z.AG.AH.AI
Hubbell Inc., Harvey, State St. & Bostwick Ave., Bridgeport, Conn.—G.I.K.P.U.Z
Industrial Electronics Co., Hanover, Mass.—AF
Instrument Corp. of America, Box 217, Blacksburg, Va.—C.H.R
Insuline Corp. of America, 186 Granite St., Manchester, N.H.—I.J.P.T.U.Z
International Register Co., 2620 W. Washington Blvd., Chicago 12, Ill.—Y
iq Industries, 6110 Wilshire Blvd., Los Angeles 36, Calif.—Y
Janco Corp., 311 Winona Ave., Burbank, Calif.—
J B L Instrument Co., Sycamore & Mill Rd., Clifton Hts., Pa.—E.R
J-B-T INSTRUMENTS, 441 Chapel St., New Haven, Conn.—J.R.Z
JENNINGS RADIO MFG. CO., P. O. Box 1278, San Jose 8, Calif.—A.B.AA
JFD Mfg. Co., 6101 16 Ave., Brooklyn 4, N.Y.—B.J.Z
JOHNSON CO., E. F., Waseca, Minn.—AE
KELLOGG SWITCHBOARD & SUPPLY, 79 W. Monroe St., Chicago 3, Ill.—D.I.P.V
Kings Electronics Co., 40 Marbledale Rd., Tuckahoe, N.Y.—BAD
Kolton Electric Mfg. Co., 123 N.J. Railroad Ave., Newark 6, N.J.—A.J
Kulka Electric Mfg. Co., 633 S. Fulton Ave., Mt. Vernon, N.Y.—Z
Kybernetics Corp., 1100 Raymond Blvd., Newark 5, N.J.—W.AF
Leader Electronics, Inc., 2925 E. 55 St., Cleveland 27, Ohio—R
Lieco, Inc., 147 Ocean Ave., Lynbrook, N.Y.—AD
Liquidometer Corp., 41-03 36th St., Long Island City 1, N.Y.—F.AF
LokeSound Engineers, J. M., 2171 W. Washington Blvd., Los Angeles 18, Calif.—I
Lumenite Electronic Co., 407 S. Dearborn St., Chicago 5, Ill.—Y
Lyman Electronic Corp., 12 Cass St., Springfield, Mass.—R
Mack Electric Devices Inc., 48 Glenside Ave., Wyncoote, Pa.—K.M.AA.AE
MALLORY & CO., P. R., 3029 E. Washington St., Indianapolis 6, Ind.—E.I.P.R.U.Y
Masco Products Co., 2119 S. Sepulveda Blvd., Los Angeles 25, Calif.—C.Q.Y
Mackenzie Products Co., 141 Brewery St., New Haven 11, Conn.—AD
Master Appliance Mfg. Co., Fourth & Ontario Sts., Racine, Wis.—U.Z
Maxson Corp., W. I., 460 W. 34 St., New York 1, N.Y.—U
Mercoid Corp., 4201 Belmont Ave., Chicago 41, Ill.—F.K
Mercury Contacts, Inc., P. O. Box 615, Far Hills Station, Dayton 9, Ohio—K
Mercury Mfg. Corp., 45 Brown St., Buffalo 11, N.Y.—AA
Meridian Metal Craft, Inc., 213 W. Whittier Blvd., Whittier, Calif.—AD

Micro Switch Div., Minn.-Honeywell Regulator Co., Freeport, Ill.—K.M.N.P.R.S.U.Z.AG.AH
Microwave Associates, 22 Cummington St., Boston 15, Mass.—AD
Minneapolis-Honeywell Regulator Co., Minneapolis 8, Minn.—A.K.M.N.P.U.V.Y.Z.AE.AF.AG.AH
Mohawk Business Machines Corp., 944 Halsey St., Brooklyn 37, N.Y.—R
Mosley Electronics, 8622 St. Charles Rd., St. Louis 14, Mo.—R
Mossman Inc., Donald P., Box 265, Brewster, N.Y.—I.P
Multi-Tron Laboratory, 4624 W. Washington Blvd., Chicago 44, Ill.—AA
Muter Co., 1255 S. Michigan Ave., Chicago 5, Ill.—M.P.T.U
MYCALEX CORP. OF AMERICA, 125 Clifton Blvd., Clifton, N.J.—A.C.Q.R.W
Naer Corp., 11777 Santa Monica Blvd. W., Los Angeles 25, Calif.—C.R.V.AA
National Electronic Mfg. Corp., 42-08 Vernon Blvd., Long Island City 1, N.Y.—J
Network Mfg. Corp., 213 W. 5 St., Bayonne, N.J.—P.R.U.Z
North Electric Mfg. Co., S. Market St., Gallion, Ohio—D.H.I.P.Q.R.V.W
N.R.K. MFG. & ENGG. CO., 4601 W. Addison St., Chicago 41, Ill.—AD
Oak Mfg. Co., 1260 Clybourn Ave., Chicago 10, Ill.—P.R.T.V.AB
Ohmite Mfg. Co., 4835 W. Flournoy St., Chicago 44, Ill.—R
Paragon Electric Co., 1600 12 St., Two Rivers, Wisc.—Y
Parts Producing Corp., Manhattan Div., 1861 Second Ave., New York 28, N.Y.—A.C
Penta Labs, Inc., 216 N. Milpas St., Santa Barbara, Calif.—AA
Peschel Electronics, Inc., 13 Garden St., New Rochelle, N.Y.—AF
Peters Co., O. S., 1353 N.Y. Ave., N.E., Washington 2, D.C.—AF
PHAOSTRON CO., 151 Pasadena Ave., S. Pasadena, Calif.—O.P.U.Y.Z.AE.AH
Philmore Mfg. Co., 113 University Pl., New York 3, N.Y.—J.P.Y
Photobell Co., 116 Nassau St., New York 38, N.Y.—X.Y.AF
PHOTOCIRCUITS CORP., Glen Cove, N.Y.—C.E.Q.R.T.W
Photoswitch Inc., 77 Broadway Cambridge 42, Mass.—O.Y.AF
Pioneer Electronics Corp., 2235 S. Carmelina, W. Los Angeles 64, Calif.—AA
Pioneer Patents & Products, 3720 N. New England Ave., Chicago 34, Ill.—AG
Power Equip. Co., 5740 Nevada E., Detroit 34, Mich.—P
Price Electric Corp., Frederick, Md.—R.R.U., Y.AC
Pyle-National Co., 1334 N. Kostner Ave., Chicago 51, Ill.—P.S
Radiation Counter Labs., 5122 W. Grove St., Skokie, Ill.—K
Recora Co., 56 W. 103 St., Chicago 28, Ill.—N.Y.AG
Research Instrument Co., 233 Broadway, New York 7, N.Y.—E.I.J.R.T.AA
Revere Corp. of America, 845 N. Colony Rd., Wallingford, Conn.—F.Z
R-F Electronics, Inc., 291 N.E. 61 St., Miami, Fla.—RAF
Rhodes, Inc., M.H., 30 Bartholomew Ave., Hartford 6, Conn.—Y
Rich Electronics, 212 N.W. 8 Ave., Miami 36, Fla.—AC
Ripley Co., 1 Factory St., Middletown, Conn.
Roanwell Corp., 662 Pacific St., Brooklyn 17, N.Y.—M.P.U.AI
Rodale Mfg. Co., Emmaus, Pa.—J
Rosach Co., D. J., 2200 S. Figueroa St., Los Angeles 7, Calif.—R
Rubicon Co., Ridge Ave. at 35th St., Philadelphia 32, Pa.—E
Rupp's Assembling & Mfg. Works, 2341 N. Seminary Ave., Chicago 14, Ill.—G.J.K.P.Z
Sanders Associates, 137 Canal St., Nashua, N.H.—C
Sears Co., M. J., Roxbury, N.Y.—U
SCINTILLA MAGNETO DIV., BENDIX AVIATION CORP., Sherman Ave., Sidney, N.Y.—R
Sessions Clock Co., Tyniswitch Div., E. Main St., Forestville, Conn.—U
SHALLCROSS MFG. CO., 520 Pusey Ave., Colingdale, Pa.—E.P.Q.R.AF
Smith, Inc., Herman H., 436 18 St., Brooklyn 15, N.Y.—J.P.T.U.Z
Spertl Faraday, Inc., 1077 Celestial St., Cincinnati 2, Ohio—AA
STACKPOLE CARBON CO., Tannery St., St. Marys, Pa.—P.T.U
Stromberg-Carlson Co., Rochester 3, N.Y.—X.Y
Strong Electric Co., 87 City Park Ave., Toledo 2, Ohio—R
Sutton Electronic Co., 426 W. Short St., Lexington, Ky.—Z
Switchcraft, Inc., 1328 N. Halsted St., Chicago, Ill.—H.I.P.Q.Z
Tech Laboratories, Inc., Bergen & Edsall Bldgs., Palisades Park, N.J.—C.E.Q.R.AF
Tensitron, Inc., Pin Hill, Harvard, Mass.—P
Thermo Instruments Co., 1310 Old County Rd., Belmont, Calif.—F.AF
Thompson Clock Co., H.C., 39 Federal St., Bristol, Conn.—A.P.R.T.U.V.X.Y.Z
Thompson Products, 2196 Clarkwood Rd., Cleveland 3, Ohio—R.R.AD

ELECTRONIC INDUSTRIES DIRECTORY

Time-O-Matic Co., 1106 Bahls St., Danville, Ill.—V
 Tork Clock Co., 1 Grove St., Mount Vernon, N.Y.—Y
 Transelectric Mfg. Co., P.O. Box 151 Oxford, Pa.—LP
 Tri-Connector Corp., 416 Union St., Lynn, Mass.—B
TUNG-SOL ELECTRIC, 95 8 Ave., Newark, N.J.—X
 Ucinite Co., Div. United-Carr Fastener Corp., 459 Watertown St., Newtonville, Mass.—P.R.U.
 Ulanet Co., George, 413 Market St., Newark, N.J.—X.Y
 Unimax Switch Div., W. L. Maxson Corp., 460 W. 34th St., New York 1, N.Y.—M.U.A.H
 United Electric Controls, 85 School St., Watertown 75, Mass.—N.U.X.A.A.H
 Universal Microwave Corp., 380 Hillside Ave., Hillside, N.J.—AD
 U.S. Relay Co., 1744 Albion St., Los Angeles 31, Calif.—AE
 Vacuum Tube Products, 506 S. Cleveland St., Oceanside, Calif.—AA
 Valverde Labs., 253 Lafayette St., New York 12, N.Y.—X
 Vemaline Products Co., P.O. Box 222, Hawthorne, N.J.—AG
 Vickers Electric Div., Vickers, Inc., 1835 Locust St., St. Louis 3, Mo.—AE
 Wade Electric Products Co., 2090 Jacobs St., Sturgis, Mich.—T
 Walkit Co., 145 W. Hazel St., Inglewood 3, Calif.—AF
 Walsoe Electronics Corp., 3225 Exposition Pl., Los Angeles 18, Calif.—Z
 Walsler Automatic Timer Corp., 420 Lexington Ave., New York 17, N.Y.—Y
 Wappler Inc., 27-10 Astoria Blvd., Long Island City 2, N.Y.—AG
WARD LEONARD ELECTRIC CO., 115 Macqueston Pky., So. Mount Vernon, N.Y.—P.R.Y
WARREN PLASTICS CORP., Warren, Pa.—K
WAVELINE INC., Passaic Ave., Caldwell, N.J.—AD
 Western Electronic Enterprises, 3348 W. Compton Blvd., Gardena, Calif.—B
 Western Int'l. Co., 45 Vesey St., New York 7, N.Y.—P.T.Z
 Westinghouse Electric Corp., Box 868, Pittsburgh 30, Pa.—A.F.L.P.R.U.X.AE.AH
 White Industries, 421 W. 54th St., New York 19, N.Y.—AF
 Whittington Pump & Eng'g Corp., 1126 Prospect St., Indianapolis 3, Ind.—AA
 Wilson & Co., G.C., 2 N. Passaic Ave., Chatham, N.J.—Y
 Winslow Co., 9 Liberty St., Newark 5, N.J.—E.L.Q.R
 Wirt Co., 5221 Greene St., Philadelphia 44, Pa.—T
 Wright Eng'g Co., 180 E. California St., Pasadena 4, Calif.—E

90—TESTERS

Testers, antenna	V
Testers, automatic tube	A
Testers, battery	B
Testers, capacitor	C
Testers, cathode ray tube	D
Testers, circuit	E
Testers, coating thickness	F
Testers, coil	G
Testers, color	H
Testers, continuity	I
Testers, crystal	J
Testers, distortion	K
Testers, HV breakdown	L
Testers, insulation	M
Testers, metallic rectified	N
Testers, meter	O
Testers, microwave	U
Testers, multimeter	P
Testers, radar	Q
Testers, synchro error	R
Testers, transistor	W
Testers, vacuum tube	S
Test sets, relay	T

Ahrendt Instrument Co., 4910 Calvert Rd., College Park, Md.—R
 Airborne Instruments Lab., 160 Old Country Rd., Mineola, N.Y.—J
AIRTRON INC., 1103 W. Elizabeth Ave., Linden, N.J.—U
 Allegany Instrument Co., 1000 Oldtown Rd., Cumberland, Md.—D.I.P
 Alpar Mfg. Corp., 2910 Spring St., Redwood City, Calif.—E.I.Q
 American Chronoscope Corp., 316 W. 1 St., Mount Vernon, N.Y.—P.T
 American Machine & Foundry Co., 1085 Commonwealth Ave., Boston 15, Mass.—S
 American Instrument Co., Silver Spring, Md.—F
 Anko Mfg. Co., 7311 W. Burleigh St., Milwaukee 10, Wis.—D

Associated Research Inc., 3758 W. Belmont Ave., Chicago 18, Ill.—F.I.L.M
 Audio-Tone Oscillator Co., 6511 Main St., Long Hill Conn.—K
 Authorized Mfrs. Service, 919 Wyckoff Ave., Brooklyn 27, N.Y.—D.E.L
 Auto-Test, Inc., 600 S. Michigan Ave., Chicago, 5, Ill.—H
 Barker & Williamson, 237 Fairfield Ave., Upper Darby, Pa.—K
 Barlow Electrical Mfg. Co., 155 E. 128 St., New York 35, N.Y.—I
 Barrett Electronics, 22319 Kathryn Ave., Torrance, Calif.—AF
 Batson Electronics Corp., J. A., 1031 S. 27 St., Omaha, Neb.—B.C.F.G
BERKSHIRE LABS., 586 Beaver Pond Rd., Lincoln, Mass.—J
 Beta Electric Corp., 333 E. 103 St., New York 29, N.Y.—L.M
 Biddle Co., Jas. G., 1316 Arch St., Philadelphia 7, Pa.—E.M
BLISS ELECTRONIC CORP., Box 123, Sussex, N.J.—E.L.M
 Booth Co., Arthur E., 255 S. Alexandria Ave., Los Angeles 4, Calif.—B.T
 Bracke-Seib X-Ray Co., 293 3 Ave., New York 10, N.Y.—M
 Bristol Eng'g Corp., Lincoln & Pond Sts., Bristol, Pa.—Q
 Bruck Industries, Syosset, L.I., N.Y.—O
 Buck Eng'g Co., 37 Marcy St., Freehold, N.J.—S
 Carlson & Nicholson, 497 Maynard Dr., Buffalo 21, N.Y.—C.D.G
 Cascade Research Corp., 53 Victory Lane, Los Gatos, Calif.—U
 Central Sales & Mfg. Corp., Richwood Pl., Denville, N.J.—D
 Century Electronics, 14844 Oxnard St., Van Nuys, Calif.—U
 Chatham Electronics Corp., 630 W. Mt. Pleasant Ave., Livingston, N.J.—A
 Clegg Laboratories, Inc., 142 S. Livingston Ave., Livingston, N.J.—A.C.D.E.G.I.Q.S.T
 Color Television, Inc., 973 E. San Carlos Ave., San Carlos, Calif.—E.I.M.U
 Communication Measurements Lab., Inc., 350 Leland Ave., Plainfield, N.J.—E.L
 Component Manufacturers, 38-01 23rd Ave., Long Island City 5, N.Y.—G
 Computer Co. of America, Div. of Bruno N.Y. Industries Corp., 149 Church St., New York 7, N.Y.—S
 Computer Research Corp., 3348 W. El Segundo Blvd., Hawthorne, Calif.—J
 Cornell-Dubilier Electric Corp., 333 Hamilton Blvd., S. Plainfield, N.J.—C
 Delaware Optical Labs., 36 Williams St., Lansdowne, Pa.—H
DIAMOND MICROWAVE CORP., 7 North Ave., Wakefield, Mass.—U
 Dice Co., 1 Engle St., Englewood, N.J.—M
 Douglas Instrument Labs., 176 Norfolk Ave., Boston 19, Mass.—P
 Drive-In Theater Mfg. Co., 505 W. 9th, Kansas City, Mo.—E.I.L.M
 Eagle Electric Mfg. Co., 23-10 Bridge Plaza S., Long Island City 1, N.Y.—E
 Eastern Specialty Co., 3627 N. 8 St., Philadelphia 40, Pa.—M
 Eder Engineering Co., 1568 S. 1st St., Milwaukee 4, Wis.—A.E.I.M.S
 Electro Impulses Lab., 62 White St., Red Bank, N.J.—U
 Electro-Mechanical Instrument Co., 812 Chestnut St., Perkasie, Pa.—B
 Electronic Beam Corp., 923 Old Nepperhan Ave., Yonkers 3, N.Y.—D
 Electronic Brazing Co., 140 Glencide Ave., Montclair, N.J.—M
 Electronic Control Systems, 2138 Westwood Blvd., Los Angeles 25, Calif.—A.I.Q.S
 Electronic Instrument Co., 84 Withers St., Brooklyn 11, N.Y.—D.S
 Electronic Measurements Co., Lewis St. & Maple Ave., Easton, N.J.—L.M.O
 Electronic Measurements Corp., 280 Lafayette St., New York 12, N.Y.—B.C.D.R.U
 Electronic Research Associates, 715 Main St., N. Caldwell, N.J.—W
 Electro-Physics Co., 287 E. Broadway, New York 7, N.Y.—H
 Electro-Tech Equip. Co., 308 Canal St., New York, N.Y.—B.C.D.E.F.I.L.M.O.P.S
 Electro-Technics, Inc., 198 Albion Ave., Paterson, N.J.—G
 Elk Electronic Labs, Inc., 333 W. 52nd St., New York 19, N.Y.—E.G.K.O.Q.T
 Empire State Labs., 2608 Merrick Rd., Bellmore, N.Y.—J
 Engineering Associates, 434 Patterson Rd., Dayton 9, Ohio—Q.U
 Entwistle Co., James L., 1475 Elmwood Ave., Providence 7, R.I.—M
 Epo Electronics, Inc., 140 Liberty St., New York 6, N.Y.—E.M

Fairchild Engine & Airplane Corp., Wyandanch, L.I., N.Y.—W
 Feiler Eng'g. & Mfg. Co., 8026 N. Monticelli Ave., Skokie, Ill.—A.B.C.D.E.I.O.P.S
 Fielden Instrument Co., 2920 N. 4 St., Philadelphia 33, Pa.—F
 Fordham Mfg. Co., 2220 Pearsall Ave., New York 69, N.Y.—E
 Franklin Electronics Inc., 115 W. Pike St., Philadelphia 40, Pa.—F
FREED TRANSFORMER CO., 1718 Wirfield St., Brooklyn 27, N.Y.—C.G.K.M
 F-R Machine Works, 44-14 Astoria Blvd., Long Island City 3, N.Y.—U
 Gates Electric Co., 55 W. Broadway, New York, N.Y.—B.N
 General Cement Mfg. Co., 919 Taylor Ave., Rockford, Ill.—E
GENERAL COMMUNICATION CO., 681 Beacon St., Boston 15, Mass.—Q.U
GENERAL ELECTRIC CO. APPARATUS DIV., 1 River Rd., Schenectady 5, N.Y.—F.H.M
GENERAL ELECTRIC CO., Electronic Park, Syracuse, N.Y.—S
 General Electronics Inc., 32 W. 22 St., New York 10, N.Y.—D.S
 General Hermetic Sealing Corp., 99 E. Hawthorne Ave., Valley Stream, N.Y.—L.M.T
GENERAL RADIO CO., 275 Mass. Ave., Cambridge 39, Mass.—C.G.M.S
 Gulton Mfg. Corp., 212 Durham Ave., Metuchen, N.J.—C
 Hall Inc., F. Sumner, Amityville, N.Y.—E
 Hartman Eng'g Co., 182 Oakland St., Springfield 8, Mass.—G
 Heath Co., 305 Territorial, Benton Harbor, Mich.—B.C.P.S
 Hewlett-Packard Co., 395 Page Mill Rd., Palo Alto, Calif.—K.Q.U
 Hoyer Products Co., 471 Cortlandt St., Belleville 9, N.J.—B
HICKOK ELECTRICAL INSTRUMENT CO., 10514 Dupont Ave., Cleveland 8, Ohio—B.D.P.S
 Holtzer Cabot Div., Nat'l. Pneumatic Co., 125 Armory St., Boston 19, Mass.—M
 Hycor Mfg. Co., 2961 E. Colorado St., Pasadena 8, Calif.—H.I.P.S
 Ideal Industries, 3316 Park Ave., Sycamore, Ill.—E.M
 Industrial Television, 369 Lexington Ave., Clifton, N.J.—P.Q
INDUSTRIAL TEST EQUIP. CO., 55 E 11 St., New York 3, N.Y.—C.R
 Industrial Transformer Corp., Gouldsboro, Pa.—M
 Instrument Labs., 315 Walton Pl., Chicago, Ill.—E.P
 International Instruments, P.O. Box 2954, New Haven 15, Conn.—P
 Jackson Electrical Instrument Co., 20 S. Patterson Blvd., Dayton 2, Ohio—D.E.H.I.S
 Kapner Hardware, 2248 2 Ave., New York 29, N.Y.—E
KEYSTONE ELECTRONICS CORP., 425 Broome St., New York 12, N.Y.—I
 Kings Electronics Co., 40 Marbledale Rd., Tuckahoe, N.Y.—Q.U
 Kirby Products Corp., 175 5th Ave., New York 10, N.Y.—B.D.G.I.P
 Kocour Co., 4800 S. St. Louis Ave., Chicago 32, Ill.—F
 Korb Eng'g & Mfg. Co., 30 Ottawa Ave., Grandville, Mich.—Q.U
 Krouse Testing Machine, Inc., 573 E. 11 Ave., Columbus 3, Ohio.—F
 Laboratory for Electronics, 75 Pitts St., Boston 14, Mass.—Q
 L.A.B. Corp., 31 Union Pl., Summit, N.J.—I
 LaRose & Assoc., W.T., 31 Ontario St., Cohoes, N.Y.—I
 Lee Electronic Labs., Inc., 233 Dudley St., Boston 19, Mass.—B.C.D.E.I.L.M
 Link Aviation, Inc., Binghamton, N.Y.—I.M
 Lloyd's Enterprises, Box 313, Altadena, Calif.
 Lyman Electronic Corp., 12 Cass St., Springfield, Mass.—I.M
MANUFACTURERS ENGG. & EQUIP. CORP., Hathersboro, Pa.—H
 Magnex Corp., 902-28 Van Wyck Expressway, Jamaica 18, L.I., N.Y.—L
MALLORY & CO., P. R., 3029 E. Washington St., Indianapolis 6, Ind.—C
 Marion Electrical Instrument Co., 400 Cambridge St., Manchester, N.H.—O
 Mercury Electronic Co., Box 450, Red Bank, N.J.—L
 Mercury Electro-Products, Inc., 622 W. Kinz St., Chicago 10, Ill.—S
 Meridian Metal Craft, 213 W. Whittier Blvd., Whittier, Calif.—Q.U
 Metropolitan Electronics & Instruments Co., 106 5 Ave., New York 11, N.Y.—A.B.C.P
 Midwest Eng'g Devel. Co., 3648 State Lin Kansas City 3, Kansas—U
 Mil Instrument Corp., 92-15 172 St., Jamaica 33, L.I., N.Y.—D.L.O.P.S
 Miller Labs., A. E., 9226 Hudson Blvd., N. Bergen, N.J.—J
MILLIVAC INSTRUMENT CORP., 444 2 S. Schenectady, N.Y.—E.J.P
 Milwaukee Transformer Co., 5231 N. Hopkins St., Milwaukee 9, Wis.—L
 Model Rectifier Corp., 557 Rogers Ave., Brooklyn 25, N.Y.—N
 Multi-Tron Lab., 4624 Washington Blvd., Chicago 44, Ill.—D.H.L.S.T
 Munston Mfg. & Service, Beech St., Islip, N.Y.—B.C.P

National Capacitor Co., 585 Washington St., Quincy 69, Mass.—C
 Neutronic Associates, 87-116 116 St., Richmond Hill, N.Y.—L,M
NEW LONDON INSTRUMENT CO., P.O.
 Box 189, New London, Conn.—S
 North Electric Mfg. Co., S. Market St., Galion, Ohio—T
 North American Philips Co., 750 Fulton Ave., Mount Vernon, N.Y.—J
 Ohmart Corp., 2236 Bogen St., Cincinnati 14, Ohio—F
 Opad-Green Co., 71-24 Warren St., New York 7, N.Y.—B,N
 Owen Labs., 412 Woodward Blvd., Pasadena 10, Calif.—W
 Pacific Mercury TV Mfg. Corp., 5955 Van Nuys Blvd., Van Nuys, Calif.—D
 Penna Testing Lab., Doylestown, Pa.—C,G,R,S
 Peschel Electronics, 13 Garden St., New Rochelle, N.Y.—I,L,M
PHAOSTRON CO., 151 Pasadena Ave., S.
 Pasadena, Calif.—E,P,S
 Phebeco, Inc., 900 Kingston Rd., Baltimore 12, Md.—E,I,Q,T
PHILCO CORP.—Accessory Div., "A" & Allegheny Ave., Philadelphia 34, Pa.—D,S
 Pomona Electronics Co., 524 W. 5 Ave., Pomona, Calif.—D,I
 Precise Devel. Corp., 999 Long Beach Rd., Oceanside, N.Y.—S
 Precise Measurements Co., 942 Kings Highway, Brooklyn 23, N.Y.—L,M
 Precision Apparatus Co., 92-27 Horace Harding Blvd., Elmhurst, L.I., N.Y.—D,E,P
 Precision Associates, 354 Cumberland St., Brooklyn 17, N.Y.—B
 Precision Electronics Inc., 9101 King Ave., Franklin Park, Ill.—E,O,S
 Pres Probe Co., 4034 N. 6 St., Milwaukee 12, Wisc.—C
 Radio City Products Co., 101 W. 31 St., New York 1, N.Y.—A,B,C,D,E,I,J,O,P,Q,S,T
RADIO CORP. OF AMERICA, RCA Tube Dept., 415 S. 5 St., Harrison, N.J.—B
 Radio Merchandise Sales, 2016 Bronxdale Ave., New York 60, N.Y.—D
 Radio Sonic Corp., 111 Bleeker St., New York 12, N.Y.—D
 Rawson Electrical Instrument Co., 117 Potter St., Cambridge 42, Mass.—O,P
 Reiner Electronics Corp., 152 W. 25 St., New York 1, N.Y.—S
 Remco Mfg. Co., 545 N. La Salle St., Chicago 10, Ill.
 Research Electronics Labs., Roslyn, Pa.—A,D,J,S
 Resdel Eng'g., 2351 Riverside Dr., Los Angeles 39, Calif.—Q
 Rich Electronics, Inc., 212 N. W. 8 Ave., Miami 36, Fla.—L
 Rockwell Eng'g. Co., 4063 N. New Jersey St., Indianapolis 5, Ind.—E,T
 Roesch Co., D. J., 2200 S. Figueroa St., Los Angeles 7, Calif.—E,I,L,M
 Rowe Industries, 1702 Wayne St., Toledo 9, Ohio—B
 Schauer Mfg. Co., 4500 Alpine Ave., Cincinnati 36, Ohio
 Scaltron Co., 9701 Reading Rd., Cincinnati 15, Ohio.—L
 Sensitive Research Instrument Corp., 9 Elm Ave., Mt. Vernon, N.Y.—E,I,O,P
 Service Instruments Inc., 422 S. Dearborn St., Chicago 5, Ill.
 Silver Bay Equip. Co., 5004 20th St. NW, Seattle 7, Wash.—V
 Simpson Electric Co., 5208 W. Kinzie St., Chicago 44, Ill.—B,E,P,S
 Sittler Corp., 18 N. Ada St., Chicago 7, Ill.—E,I
 Sperry Gyroscope Co., Great Neck, N.Y.—Q,U
 Standard Electronic Research Corp., 2 East End Ave., New York 21, N.Y.—F
 Star Fuse Co., 235 Canal St., New York 13, N.Y.—E
 Sterling Mfg. Co., 7201 Wentworth Ave., Cleveland 2, Ohio.—R
 Sticht Co., Herman H., 27 Park Pl., New York, N.Y.—M
 Sturtevant Co., Addison, Ill.
 Supreme, Inc., Greenwood, Miss.—B,S
 Sun Electric Corp., Harlem & Avondale Aves., Chicago 31, Ill.—B,E,G
 Superex Electronics Corp., 23 Atherton St., Yonkers, N.Y.—D
SYLVANIA ELECTRIC PRODUCTS, Inc., 1740 Broadway, New York 19, N.Y.—D,P,S
 Syntronic Instruments, Inc., 100 Industrial Rd., Addison, Ill.—D
 Technicraft Laboratories, 1200 Main St., Thomaston, Conn.—U
TELECHROME, INC., 88 Merrick Rd., Amityville, N.Y.—H
 Teletronics Labs., 54 Kinkel St., Westbury, L.I., N.Y.—J
 Tenstrom, Inc., Pin Hill, Harvard, Mass.—R
TEXAS INSTRUMENTS, INC., 6000 Lemmon Ave., Dallas 9, Tex.—Q
 Thompson Clock Co., H. C., 38 Federal St., Bristol, Conn.—B,C,E,G,I,O
 Tinker & Rasor, P O Box 281, San Gabriel, Calif.—M
TRANSISTOR PRODUCTS INC., 55 Union St., Brighton 35, Mass.—S,W
 Transiron, Inc., 154 Spring St., New York 12, N.Y.—L,M
 Triumph Mfg. Co., 913 W. Van Buren, Chicago 7, Ill.—B

Trojan Electronics, 3706 N. Halsted St., Chicago 13, Ill.—D
 Ultrasonic Corp., 61 Rogers St., Cambridge 42, Mass.—R
 Union Spring & Mfg. Co., 1057 Summit Ave., Jersey City 7, N.J.—G,R
 U.S. Testing Co., 1415 Park Ave., Hoboken, N.J.—B,C,P,Q
 Universal X-Ray Products, 1140 N. Western Ave., Chicago 22, Ill.—L
 Vacolite Co., 3003 N. Henderson St., Dallas 6, Texas.—S
 Vacuum Electronic Eng'g. Co., 86 Denton Ave., New Hyde Park, L.I., N.Y.
 Valtronics, Inc., 242 Valley St., Dayton 4, Ohio—S
VECTRON, INC., 400 Main St., Waltham 54, Mass.—Q,R,U
 Vemaline Products Co., P.O. Box 222 Hawthorne, N.J.—E
 Vidair Electronics Mfg. Co., 576 W. Merrick Rd., Lynbrook, L.I., N.Y.—D
WAVELINE INC., Passaic Ave., Caldwell, N.J.—Q,U
 Welch Electric Co., 1221 Wade St., Cincinnati 14, Ohio—L,M
 Westberg Mfg. Co., 144 S. Coombs St., Napa, Calif.—B
 Westinghouse Electric Corp., Box 868, Pittsburgh 30, Pa.—P
WESTON ELECTRICAL INSTRUMENT CORP., 614 Frelinghuysen Ave., Newark 5, N.J.—B,E,G,O,P,S
 Weston Labs., Inc., Oak Hill Rd., Harvard, Mass.—Q,U
 Weymouth Instrument Co., 1440 Commercial St., E. Weymouth 89, Mass.—U
 Willard Storage Battery Co., 1220 Huron Rd., Cleveland, Ohio.—B
 Winslow Co., 9 Liberty St., Newark 5, N.Y.—M

Black & Decker Mfg. Co., Towson 4, Md.—C,F
Bowen & Co., 4712 Bethesda Ave., Bethesda, Md.—R,V
 British Electronic Sales Co., 23-03 45 Rd., Long Island City 1, N.Y.—AA,AB,AC,AE,AF
 Buchanan Electrical Products Corp., 236 Route 22, Hillside, N.J.—AD
 Buhl Optical Co., 1009 Beech Ave., Pittsburgh 33, Pa.—P,R
 Chase Brass & Copper Co., 236 Grand St., Waterbury 20, Conn.—AA
 Chicago Expansion Bolt, 1338 W. Concord Pl., Chicago 22, Ill.—G
 Chicago Tool & Eng'g. Co., 8383 S. Chicago Ave., Chicago 17, Ill.—S,SAH
 Cleco Div., Reed Roller Bit Co., 5125 Clinton Dr., Houston 20, Texas—M,X
 Contact, Inc., 238 Main St., Cambridge 42, Mass.
 Cummins-Chicago Corp., 4740 Ravenswood Ave., Chicago 40, Ill.—F
 Curran Machine Works, 20-20 Steinway St., Long Island City, N.Y.—L
 Dante Electric Mfg. Co., P.O. Box 6, Bantam, Conn.
 Dee Electric Co., 1101 N. Paulina St., Chicago 22, Ill.—Z
 Delaware Optical Labs., 36 Williams St., Lansdowne, Pa.—P,R
 Division Lead Co., 836 W. Kinzie St., Chicago 22, Ill.—M
 DoAll Co., 254 N. Laurel Ave., Des Plaines, Ill.—B,I,K,L,M,P,Q,AH
 Drake Electric Works, 3654 N. Lincoln Ave., Chicago 13, Ill.—Z,AA,AB,AC
 Duro Specialty Co., 8 Bennett St., Lynn, Mass.—AE
 Ed-Herl Products, 7 Garden Pl., Baldwin, L.I., N.Y.—H,S,U
 Enthoven Solders Ltd., 107 N. Water St., Rochester 4, N.Y.—A,Z,AA,AC
 Eraser Co., 1068 S. Clinton St., Syracuse 4, N.Y.—AG
 Ess Instrument Co., 36 S. Washington Ave., Bergenfield, N.J.—AB
FAIRCHILD INDUSTRIES DIV., Fairchild Camera & Instrument Corp., 110 Main St., Burlington, Vt.—F
 Federal Sapphire Products, Div. Precision Supply & Machine Co., 12 River Rd., Fair Lawn, N.J.—I,L,Q,X
 Forsberg Mfg. Co., 125 Seaview Ave., Bridgeport 1, Conn.—B,F,G,X
GEE-LAR MFG. CO., 819 Elm St., Rockford, Ill.—S,AC,AF
 General Cement Mfg. Co., 919 Taylor Ave., Rockford, Ill.—A,O,P,R,X,Y,AC,AE,AF,AG
GENERAL ELECTRIC CO., APPARATUS DIV., 1 River Rd., Schenectady 5, N.Y.—AA
 Greibach Research & Devel. Labs., 80 Pryer Terrace, New Rochelle, N.Y.—Z,AA
 Grenlee Tool Co., 2136 12 St., Rockford, Ill.—T,X
 Gustafson Mfg. Co., G. D., 5328 N. Kedzie Ave., Chicago 25, Ill.
 Henkel-Claus Co., Fremont, Ohio.—W
 Hexacon Electric Co., 157 N. Clay Ave., Roselle Park, N.J.—AA,AB,AC
 Holub Industries, 413 DeKalb Ave., Sycamore, Ill.—AG
 Ideal Industries, 3316 Park Ave., Sycamore, Ill.—E,J,L,M,AA,AC,AG
 I.E. Mfg. Co., 325 N. Hoyne Ave., Chicago 12, Ill.—AG
 Industrial Engineered Products Co., 7416 Melrose Ave., Los Angeles 46, Calif.—Z,AA,AI
 Insuline Corp. of America, 186 Granite St., Manchester, N.H.—A,T,X,Y,AA
 JFD Mfg. Co., 6101 16 Ave., Brooklyn 4, N.Y.—A,N,O,AE,AG
 Kedman Co., 233 S. 5th St., W. Salt Lake City 1, Utah—X
 Kelnor Mfg. Corp., 222 Kearny St., San Francisco 8, Calif.—AA
 Kemode Mfg. Co., 161 W. 18 St., New York 11, N.Y.—AA
KEYSTONE ELECTRONICS CORP., 423 Broome St., New York 11, N.Y.—A
 Kinetix Instrument Co., 902 Broadway, New York 10, N.Y.
KLEIN & SONS, MATHIAS, 3200 Belmont Ave., Chicago 18, Ill.—S,AG
 Kwikheat Mfg. Co., 3732 San Fernando Rd., Glendale 4, Calif.—AA,AB,AC
 Leuk Mfg., 30 Cummington St., Boston 15, Mass.—AA,AC
 Libbey-Owens-Ford Glass Co., Liberty Mirror Div., Brackenridge, Pa.—R
 Luffin Rule Co., 1730 Hess St., Saginaw, Mich.—E,L,X
 Luma Electric Equip. Co., 1112 Dorr St., Toledo, Ohio.—E,J,AA
 Metzger & Son, E. F., 2600 N. 5 St., Philadelphia 33, Pa.—A
MICO INSTRUMENT CO., 80 Trowbridge St., Cambridge 38, Mass.—C,J
 Microtran Co., 84-11 Rockaway Beach Blvd., Rockaway Beach 93, N.Y.—E
 Millers Falls Co., Greenfield, Mass.—B,C,G,J,Q,X
 Mitchell Industries, Box 17, Mineral Wells, Texas—AA,AB,AC
 Moody Machine Products Co., 42 Dudley St., Providence 5, R.I.—G,X
 Pacific Universal Products Corp., 168 Vista Ave., Pasadena 6, Calif.—R
 Phillips Mfg. Co., 2816 Aldrich Ave., S. Minneapolis, Minn.—AA,AB,AC,AI

91—TOOLS, HAND

Alignment tools	A
Blades, hacksaw	B
Cutters, hole	C
Cutters, slide	D
Demagnetizers	E
Drills, electric	F
Drills, hand	G
Drills, twist	H
Drivers, staple	I
Etchers, electric	J
Files	K
Gages	L
Hammers	M
Holders, Chassis	N
Knob pullers	O
Lenses, inspection	P
Micrometers	Q
Mirrors, inspection	R
Pliers	S
Punches	T
Ratchet wrenches	U
Scales & Tapes	V
Scissors	W
Screwdrivers	X
Socket wrenches	Y
Solder pots	Z
Soldering irons	AA
Soldering iron stands	AB
Soldering iron tips	AC
Splicing tools	AD
Staplers	AE
Tube pin straighteners	AF
Tube pullers	AG
Wire strippers	AH
Vises	AI

Acme Electric Heating Co., 1217 Washington St., Boston 18, Mass.—Z,AA
 Acme Industrial Co., 200 N. Leffin St., Chicago 7, Ill.—Q
 Aeromark Co., 601 Morrell St., Elizabeth 4, N.J.—J
 Acro Tool & Die Works, 4554 Broadway, Chicago 40, Ill.—D
 Aerolite Electronics Corp., 507 26 St., Union City, N.J.—A,AE,AF
 Airdraulics Eng'g. Inc., 30 Burtis Ave., New Canaan, Conn.—L,V,X
 Alina Corp., 401 Broadway, New York 13, N.Y.—Q
AMERICAN ELECTRICAL HEATER CO., 6110 Cass Ave., Detroit 2, Mich.—AA
 American Mercantile Co., 33 W. 42 St., New York 36, N.Y.—B,AA,AC
AMERICAN PHENOLIC CORP., 1830 S. 54 Ave., Chicago 60, Ill.—A
 American Radio Hardware Co., 152 MacQuesten Parkway S., Mount Vernon, N.Y.—A,X,Y
 Annis Co., R. B., 1101 N. Delaware St., Indianapolis 2, Ind.—E,J
 Bausch & Lomb Optical Co., 628 St. Paul St., Rochester, N.Y.—P,R

Pioneer Tool Co., 5008 W. Jefferson Blvd., Los Angeles 16, Calif.—C.T.Y
 Portable Electric Tools, 200 W. 83 St., Chicago 20, Ill.—F
 Porter, Inc., H. K., 74 Foley St., Somerville 43, Mass.—D.S.X.Y
 Precise Measurements Co., 942 Kings Highway, Brooklyn 23, N.Y.—C
 Precision Supply & Machine Co., 12 River Rd., Fair Lawn, N.J.—L.Q.X
 Preis Engraving Machine Co., H. P., 270 Industrial Br., Hillside, N.J.—J
 Production Tool & Fixture Co., 37 W. Main St., Rason Mfg., 3050 W. 21, Brooklyn, N.Y.—E
 SCHERR CO., 200 Lafayette St., N.Y.—C
 Shakeproof Co., Elgin, Ill.—X
 Small Motors Inc., 2076 Elston Ave., Chicago 14, Ill.—G
 Smith Heat Treating Co., 5865 Wilmington Ave., Los Angeles 1, Calif.—Y
 Smith, Inc., Herman H., 436 18 St., Brooklyn 15, N.Y.—A
 S.O.S. Cinema Supply Corp., 602 W. 52nd St., New York 19, N.Y.—AD, AI
 SpeedWay Mfg. Co., 1834 S. 52 Ave., Cicero 50, Ill.—F
 Stanley Works, 195 Lake St., New Britain, Conn.—C.F.G.M.T.X.AA.AC.AH
 Star Expansion Products Co., 147 Cedar St., New York 6, N.Y.—A.AE.AF
 Star Fuse Co., 235 Canal St., New York 13, N.Y.
 Sturtevant Co., P. A., Addison, Ill.—Y
 Sunrise Products Co., P. O. Box 173, Hawthorne, N.J.—Z.AA.AB
 Technical Products Co., 19 N. Dunlap, Memphis 1, Tenn.—F.J.K.L.Q.W.Z
 Technicraft Supply Co., 1156 Commonwealth Ave., Boston 34, Mass.—B.C.V.AA
 Thompson Clock Co., H. C., 38 Federal St., Bristol, Conn.—A. B. C. D. F. G. I. J. K. M. O. P. Q. R. S. T. U. V. W. X. Y. AA. AB. AC. AD. AE. AF. AG. AH. AI
 Tri-Kris Co., P.O. Box 631, Lansdale, Pa.—A.L.R.AE
 Ungar Electric Tools, P.O. Box 312, Venice, Calif.—AA.AC
 Utica Drop Forge & Tool Corp., 2415 Whitesboro St., Utica 4, N.Y.—S.W.X
 Vaco Products Co., 317 E. Ontario St., Chicago 11, Ill.—A.M.S.X.AG
 Vemaline Products Co., P.O. Box 222, Hawthorne 1, N.J.—E.J.Z.AA.AB.AC
 Vulcan Electric Co., 88 Holton St., Danvers, Mass.—Z.AA.AB.AC
 Waage Electric, Inc., 720 Colfax Ave., Kenilworth, N.J.—Z
 WALL MFG. CO., Grove City, Pa.—AA.AB.AC
 Walsco Electronics Corp., 3225 Exposition Pl., Los Angeles 18, Calif.—A.R.Y.AD.AE.AG.AI
 Wansco Electric Products Corp., 126 W. Cass St., Joliet, Ill.—AA.AC
 Wasserlein Mfg. Co., 126 W. Cass St., Joliet, Ill.—AA.AC
 Weller Electric Corp., 808 Packer St., Easton, Pa.—AA
 Wen Products, Inc., 5806 N. West Highway, Chicago 21, Ill.—AA
 Wenzel Projector Co., 2509 S. State St., Chicago 16, Ill.—M.T
 Western Mfg. Co., 1400 W. 22 St., Kearney, Nebr.—J
 WHITE DENTAL MFG. CO., S. S., 10 E. 40 St., New York 16, N.Y.—R
 Wilder Mfg. Co., Mechanic St. & Erie R.R., Port Jervis, N.Y.—AB
 Wyzenbeek & Staff, 223 N. California Ave., Chicago 12, Ill.—C
 Xcelite Inc., Thorne Ave. & Bank St., Orchard Park, N.Y.—A.S.X.Y

92—TRANSFORMERS

Transformers, audio broadcasting .A
Transformers, audio inputAK
Transformers, audio interstageAL
Transformers, audio outputAM
Transformers, audio receivingB
Transformers, autotransformerC
Transformers, biasD
Transformers, bridgeE
Transformers, currentF
Transformers, current limitingG
Transformers, filamentH
Transformers, flybackAF
Transformers, fluorescentI
Transformers, HV fenceJ
Transformers, instrumentK
Transformers, isolationL
Transformers, microphone cableN
Transformers, microwaveO
Transformers, miniatureAG
Transformers, modulationP
Transformers, phase shiftAN
Transformers, plateQ
Transformers, plug-inR
Transformers, powerS
Transformers, power receivingT

Transformers, power transmitting .U
Transformers, pulseV
Transformers, RF-IFW
Transformers, saturableX
Transformers, sub miniatureAH
Transformers, subsonicY
Transformers, toroidalZ
Transformers, transistorAI
Transformers, TV antenna matchingAA
Transformers, ultrasonicAB
Transformers, variableAC
Transformers, voltage, regulating .AD
Transformers, weldingAE
Transformers, X-rayAJ

Accurate Eng'g. Co., 2005 Blue Island Ave., Chicago 8, Ill.—C.H.L.Q.S
 Acme Coil & Transformer Corp., 1915 N. Clybourne Ave., Chicago 14, Ill., B.C.F.G. H.I.K.L.P.Q.S.T.V.X
 Acme Electric Corp., Cuba, N.Y.—A.C.D.H.I. J.K.L.P.Q.S.T.U.V.X.AD.AE.AG
 Acme Electronics Div., Aerovox Corp., 272 Peck Rd., Monrovia, Calif.—E.G.K.X.AD. AG
 Acorn Electronics Corp., Box 348 Gibson City, Ill.—B.C.H.J.Q.S.T.V
 Aero Products Co., 369 Shurs Lane, Philadelphia 28, Pa.—A.B.C.H.Q.S.X
 Aero Transformer & Mfg. Corp., 26-02 4 St., Long Island City 3, N.Y.—A.B.C.D.E.G.H.L. P.Q.R.S.T.U.X.AG.AH
 Aerolite Electronics, 507 26 St., Union City, N.J.—W.Z
 AEROVOX CORP., 740 Belleville Ave., New Bedford, Mass.—A.Z.AC.AD
 Air Associates, Teterboro, N.J.—W
 Aircraft Armaments, Inc., 4415 Reistertown Rd., Baltimore 15, Md.—V
 AIRCRAFT TRANSFORMER CORP., West & Willow Aves., Long Branch, N.J.—A.B.D.E. F.G.H.K.L.O.P.Q.R.S.T.U.V.X.Y.AB.AD
 AIRDESIGN, INC., 241 Fairfield Ave., Upper Darby, Pa.—A.B.C.D.F.G.H.J.K.L.P.Q.S.T. U.V.X.AD.AG.AH
 Airpax Products Co., P. O. Box 137, Baltimore 20, Md.—A. B. C. D. E. F. G. H. I. J. K. L. N. P. Q. R. S. T. U. V. X. Y. Z. AB. AC. AD. AE. AF. AG. AH. AI. AJ. AK. AL. AM. AN
 Aladdin Radio Industries, 703 Murfreesboro Rd., Nashville, Tenn.—W
 Allied Allegri Machine Co., 141 River Rd., Nutley 10, N.J.—W
 Anchor Electronics, Inc., 717 Sip St., Union City, N.J.—W
 Annis, R. B. Co., 1101 N. Delaware St., Indianapolis 2, Ind.—K
 Apex Coil & Transformer Corp., 1919 S. Fairfield Ave., Chicago 8, Ill.—B.C.H.Q.S. T.AI
 A. P. W. Co., 72 W. Main St., Rockaway, N.J.—AH
 Arco Transformer & Electric Corp., 1602 S. Hanna St., Ft. Wayne 5, Ind.—B.C.D.E.F. G.H.J.K.L.Q.R.S.T.AA.AC.AE
 Arma Corp., Roosevelt Field, Garden City, N.Y.—S
 Art Specialty Co., (Flexo Int. Corp. Sub.), 32 W. Lake St., Chicago 24, Ill.—I
 Arted Co., Inc., 367 Worthington St., Springfield 3, Mass.—W.AA
 Atlantic Transformer Corp., 30 Hynes Ave., Groton, Conn.—A.B.C.D.E.F.G.H.K.L.P.Q.R. S.T.U.V.X.Y.AB.AC.AH.AI.AN
 Atlas Coil Winders, Inc., 39 Manhattan St., Stamford, Conn.—C.D.E.F.G.H.K.S.T.U.V.W. X.Y.AB.AC.AD
 Atlas Engineering Co., 3 Edgewood St., Roxbury, Mass.—B.C.D.E.F.H.K.L.P.Q.S.T.U.V. W.Y.Z.AB.AE.AG.AH.AI.AN
 Audio Devel. Co., 2833 13 Ave., S., Minneapolis 7, Minn.—A. B. C. D. E. H. L. P. Q. R. S. T. U. V. Y. AB. AC. AH. AI. AN
 Automatic Mfg. Corp., 65 Gouverneur St., Newark 4, N.J.—W.AF
 Auto-Test, Inc., 600 S. Michigan Ave., Chicago 5, Ill.—H.L.S
 Barker & Williamson, Inc., 237 Fairfield Ave., Upper Darby, Pa.—W.Z.AC
 Basler Electric Co., 601 Fifth St., Highland, Ill.—A. B. C. D. E. F. G. H. J. K. L. N. O. P. Q. R. S. T. U. V. X. Y. Z. AA. AB. AC. AD. AE. AG. AH. AJ. AK. AL. AM. AN
 Bary Electronics Corp., 136 Liberty St., New York 6, N.Y.—E.H.T.U.AE
 Bayside Watch Tool Co., 20-02 Utopia, White-stone 57, L.I., N.Y.—K
 Beam Instruments Corp., 350 5 Ave., New York 1, N.Y.—H.S.T
 BERKSHIRE LABS, 586 Beaver Pond Rd., Lincoln, Mass.—R.V
 Best Mfg. Co., 1200 Grove St., Irvington 11, N.J.—B.H
 Birdsell Mfg. Co., 750 San Antonio Road, San Antonio, Texas—C.L.O.S.AE.AJ
 Rittermann Electric Co., Barlow & Grove Sts., Canaan, Conn.—C.K.S.Z.AG
 Blonder-Tongue Labs., Inc., 526 North Ave., Westfield, N.J.—AA
 Bogen Co., David, 29 9 Ave., New York 14, N.Y.—AC

Branson Instruments, Inc., 430 Fairfield Ave., Stamford, Conn.—AB
 British Electronic Sales Co., 23-03 45th Rd., Long Island City 1, N.Y.—B
 Brook Electronics, Inc., Box 491, Elizabeth, N.J.—A.V
 Burlington Instrument Co., Burlington, Iowa F.K
 BURNELL & CO., 45 Warburton Ave., Yonkers 2, N.Y.—Z
 BURROUGHS CORP., ELECTRONIC INSTRUMENTS DIV., 1209 Vine St., Philadelphia 7, Pa. V
 Caddell-Hurns Mfg. Co., 40 E. 2nd St., Mineola, N.Y.—W
 Calbest Eng'g & Electronics Co., 828 N. Highland Ave., Hollywood 38, Calif.—W.AA
 Caledonia Electronics & Transformer Corp., P. O. Drawer 298, Caledonia, N.Y.—A.B.C. H.L.P.Q.S.T.U.V.X.AG.AI
 Cambridge Thermionic Corp., 145 Concord Ave., Cambridge 38, Mass.—W.AC
 Campbell X-Ray Corp., 110 Cummington St., Boston 15, Mass.—H.Q.S.V.AJ
 Carad Corp., 2850 Bay Rd., Redwood City, Calif.—V.W.X.Z.AF.AI
 Carol Electronics Corp., 141 E. 25 St., New York 10, N.Y.—A.B.C.D.E.G.H.L.P.Q.S.T.X. AG.AH.AI.AJ.AK.AL.AM
 Central Coil Co., 1720 N. Luett St., Indianapolis 22, Ind.—W.AA
 Central Transformer Co., 908 W. Jackson Blvd., Chicago 7, Ill.—A.B.C.D.E.F.G.H.J.K. L. O. P. Q. S. T. U. X. Y. AB. AC. AE. AJ. AK. AL. AM. AN
 Centran, Inc., P.O. Box 168, Greensburg, Ind. Centronics Corp., 21-04 122 St., College Point, 56, N.Y.—AA
 C.G.S. Labs, Inc., 391 Ludlow St., Stamford, Conn.—W.X.AC
 Chicago Electronic Eng. Co., 3223 Armitage Ave., Chicago 47, Ill.—B.H.R.S.T.U.X.Z.AE. AG.AH.AI.AJ.AK.AL.AM.AN
 Chicago Magnetic Control, 1616 Damon Ave., Chicago, Ill.—B.G.L.Q.R.S.T.U.V.X.Z.AG.AH
 Chicago Standard Transformer Corp., Addison & Elston, Chicago 18, Ill.—A.B.C.D.H. L.P.Q.S.T.U.V.Z.AD.AF.AG.AH.AI
 Coast Coil Co., 5352 W. Wash. Blvd., Los Angeles 16, Calif.—Z
 Coilcraft, Inc., Jandus Rd., Cary, Ill.—W.AA. AF.AG
 Coil Eng'g & Mfg. Co., Roanoke, Ind.—B.C.H. J.L.Q.S.T
 Coil Winders Inc., 100 New York Ave., West-bury, L.I., N.Y.—W
 Columbus Process Co., State & Mapleton Sts., Columbus, Ind.—B. C. H. L. Q. S. T. V. X. AG. AH. AI
 Comar Electric Co., 3349 W. Addison St., Chicago 18, Ill.—S
 COMMUNICATION ACCESSORIES CO., Hickman Mills, Mo.—F.X.Z.AB.AG.AH.AN
 Communication Parts, 7466 W. Irving Park Rd., Chicago 34, Ill.—W.AA
 Component Manufacturers, 38-01 23rd Ave., Long Island City 5, N.Y.—Z.AF
 Consolidated Radio Products Co., 350 W. Erie St., Chicago 10, Ill.—B.H.Q
 Constantine Eng'g Labs. Co., P.O. Box 471, Mahwah, N. J.—C.H.K.L.S.V.X.Z.AF.AH.AI
 Crest Transformer Corp., 1834 W. North Ave., Chicago 22, Ill.—A.B.C.D.E.H.J.K.L.P. Q.R.S.T.U.V.W.X.AC.AD.AE.AF
 Cycle Electronic Labs., 356 Glenwood Ave., E. Orange, N.J.—A.B.C.D.E.F.G.H.J.K.L.Q. S.T.V.X.AE.AG.AH.AI
 Dane Electronic Labs. 316 Stuart St., Boston 16, Mass.—AA
 Delco Radio Div., General Motors Corp., Kokomo, Ind.—W
 Delta Electronics, 259 Green St., Brooklyn 22, N.Y.—W
 Delta Radio Co., 115 Worth St., New York 13, N.Y.—W.Z
 Demco Products, P.O. Box 5042, Philadelphia 11, Pa.—V.Z
 DeWitt Development Co., 3008 W. 127th St., Blue Island, Ill.—W.AI
 Dietz Design & Mfg. Co., Grandview, Mo.—A.B.H.L.Q.R.S.T.Z
 Dinion Coil Co., Caledonia, N.Y.—B.C.H.I.K. L.N.Q.S.T.V.X.AG.AH.AI
 DIT-MCO, Inc., 505 W. 9 St., Kansas City 5, Mo.—B.C.D.F.H.L.S.T
 Dormeyer Industries, 3418 Milwaukee Ave., Chicago 41, Ill.—A.B.H.J.K.R.S.T.U.AD.AE. AJ
 Dormitzer Electric & Mfg. Co., 5 Hadley St., Cambridge 40, Mass.—B.C.H.Q.S.T.U.V
 Douglas Microwave Co., 11 Beechwood Ave., New Rochelle, N.Y.—O
 D & R Ltd., 402 E. Gutierrez St., Santa Barbara, Calif.—X.Z
 Dressen-Barnes Corp., 250 N. Vinedo Ave., Pasadena 8, Calif.—AD
 Dresser Electric Co., 942 E. Larned St., Detroit 7, Mich.—F.L
 Dunkle Coil Co., 3257 W. 6 St., Los Angeles, Calif.—B.C.H.W.AF
 DX Radio Products Co., 2300 Armitage Ave., Chicago 47, Ill.—F.G.L.P.S.T.V.W.Z.AF
 Electron Mfg. Co., 1901 Clybourn Ave., Chicago 14, Ill.—A.B.C.E.F.G.H.K.L.P.Q.S.T.U. X.AE.AG
 Electrical Windings, Inc., 2015 N. Kolma Ave., Chicago 39, Ill.—A.B.C.D.E.F.G.H.J.K. L.P.Q.R.S.T.U.X.Y.AB.AF

Electrocoil Transformer Corp., Westerly Rd., Ossining, N.Y.—A,B,H,P,Q,S,U,V
Electro Assemblies Inc., 2935 W. Belmont Ave., Chicago 18, Ill.—W
Electro Engineering Works, 6021 College Ave., Oakland 18, Calif.—A,B,C,D,E,F,G,H,K,L,P,Q,R,S,T,U,V,X,Y,AB,AD,AE,AG,AH,AJ,AK,AL,AM,AN
Electrometric Inc., Woodstock, Ill.—V,W,AF
Electronic Components Corp., 835 N. Larrabee St., Chicago 10, Ill.—A,B,T,U
Electronic Computer Corp., 265 Butler St., Brooklyn 17, N.Y.—V
Electronic Heating Corp., 66 Needham St. Newton Highlands 61, Mass.—U,X,AE
Electronic Transformer Co., 209 W. 25 St., New York, N.Y.—A,B,C,D,E,F,H,P,Q,S,T,U,V,AG
Electro-Tech Equip. Co., 308 Canal St., New York, N.Y.—F,K,L,S,AC
Electro-Technics, Inc., 198 Albion Ave., Paterson, N.J.—A,B,C,D,E,F,G,H,I,K,L,P,Q,R,S,T,U,V,W,X,Y,Z,AB,AD
Electro-Voice, Inc., Buchanan, Mich.—N
El-Rad Mfg. Co., 2800 W. Cullum Ave., Chicago 18, Ill.—W,AA,AF
Empire Coil Co., 45 Beechwood Ave., New Rochelle, N.Y.—A,B,C,H,J,L,P,Q,S,T,U,V,W,X,AA,AD,AF,AG,AH,AK,AL,AM
Eng'g. Research Associates, Inc. Div. Remington Rand, Inc., 1902 W. Minnehaha Ave., St. Paul 4, Minn.—V
Epsco, Inc., 126 Mass Ave., Boston 15, Mass.—V,Z,AG,AH,AI
Epo Products, Inc., 2500 Atlantic Ave., Brooklyn 7, N.Y.—A,B,C,D,E,H,J,L,P,Q,S,T,U,V,X,Y,AE,AG,AH,AJ,AK,AL,AM
ERCA Tool Die & Stamping Co., 19 Ash St., Brooklyn 22, N.Y.—M
Espey Mfg. Co., 528 E. 72 St., New York 21, N.Y.—A,B,C,D,E,F,G,H,K,L,N,O,P,Q,R,S,T,U,V,W,X,Y,Z,AC,AD,AG,AH
Esterline-Angus Co., Inc., P. O. Box 596, Indianapolis 6, Ind.—K
FEDERAL TELEPHONE & RADIO CO., DIV. I.T.&T., 100 Kingsland Rd., Clifton, N.J.—H,L,P,S,V,Z,AG
Ferranti Electric Inc., 30 Rockefeller Plaza, New York 20, N.Y.—A,B,C,D,E,G,H,L,P,Q,S,T,U,X,Y,AB,AD,AG,AH
Flexaust Co., 100 Park Ave., New York 17, N.Y.—J
Forbes & Wagner Inc., 339 Central Ave., Silver Creek, N.Y.—V,W,AF,AH
Foster Transformer Co., 3820 Colerain Ave., Cincinnati 15, Ohio—B,C,H,L,P,Q,S,T,U,AG
France Mfg. Co., 10325 Berea Rd., Cleveland 2, Ohio—C,G,I,L,S,V,Z,AG
FREED TRANSFORMER CO., 1718 Weirfield St., Brooklyn 27, N.Y.—A,B,C,D,E,F,G,H,I,K,L,P,Q,R,S,T,U,V,W,X,Y,Z,AB,AG,AH,AI
F-R Machine Works, 44-14 Astoria Blvd., Long Island City 3, N.Y.—O
Frost & Co., L. H., 44 Ionia Ave., S.W. Grand Rapids 2, Mich.—A,B,S
FUGLE-MILLER LABS., 398 Main St. Metuchen, N.J.—W
GABRIEL ELECTRONICS DIV., GABRIEL CO., Endicott Street, Norwood, Mass.—AA
Gwertner Radio Co., 3612 Maple Ave., Los Angeles 11, Calif.—W
GALBRAITH & SON, 450 Sixth Ave., New York 11, N.Y.—A,B,C,D,H,I,L,Q,R,S,T,U,AG
Gardner Electric Mfg. Co., 4227 Hollis St., Emeryville 8, Calif.—I,S
Gates Electric Co., 65 W. Broadway New York, N.Y.—C,D,H,L,S,AC,AD
GENERAL ELECTRIC CO., APPARATUS DIV., 1 River Rd., Schenectady 5, N.Y.—G,L,O,P,Q,R,S,T,U,V,W,X,Y,Z,AB,AG,AJ
GENERAL ELECTRIC CO., Electronics Park, Syracuse, N.Y.—H,U,V,AF
General Electronics, Inc., 32 W. 22 St., New York 10, N.Y.—C,H,T,Z,AB
General Magnetics, Inc., 135 Bloomfield Ave., Bloomfield, N.J.—X
GENERAL RADIO CO., 275 Mass. Ave., Cambridge 39, Mass.—B,C,E,Z,AC,AD
General Transformer Co., 18240 Harwood Ave., Homewood, Ill.—A,B,C,H,J,K,L,P,Q,S,T,U
Geotronic Labs., Inc., 1314 Cedar Hill Ave., Dallas 11, Texas—K,S,AG,AH,AI
Gertach Products Inc., 11846 Mississippi Ave., Los Angeles 25, Calif.—C
Goslin Electric & Mfg. Co., 2921 W. Olive Ave., Burbank, Calif.—A,B,C,D,E,F,G,H,I,J,K,L,N,O,P,Q,R,S,T,U,V,W,X,Y,AA,AB,AD,AE,AF,AG,AJ,AK,AL,AM,AN
Gramer Transformer Corp., 2734 N. Pulaski Rd., Chicago 39, Ill.—A,B,C,D,H,J,K,L,M,N,O,P,Q,R,S,T,U,V,W,X,Z,AA,AC,AD,AE,AF,AG,AH,AJ,AK,AL,AM
HUEDEMAN CO., 9200 Exposition Blvd., Los Angeles 34, Calif.—V,AH,AI
HUTTMAN & CO., EDWIN I., 15 S. Throop St., Chicago 7, Ill.
H. W. Associates, P. O. Box 2263, El Segundo, Calif.—O
Iadley Co., Robert M., 5112 S. Hoover St., Los Angeles 37, Calif.—A,B,C,D,E,F,H,J,K,L,N,P,Q,R,S,T,U,V,W,X,Y,Z,AB
Ialldorson Transformer Co., 4500 N. Ravenswood Ave., Chicago 40, Ill.—A,B,C,D,E,H,L,P,Q,S,T,U,AD,AF
Iall Mfg. Co., 3901 Wesley Terr., Schiller Park, Ill.—X,Z

Hamilyn Electronics Corp., 32 Holman Blvd., Hicksville, N.Y.—A,B,P
Harder Co., Donald C., 3338 India St., San Diego 1, Calif.—K,Z
Harmon Electronics Co., 11431 Trumen Rd., Harnett Electric Co., 138 Haven Ave., Port Washington, N.Y.—
HD Electric Co., 760 Osterman Ave., Deerfield, Ill.—F
Heldor Mfg. Corp., 225 Belleville Ave., Bloomfield, N.J.—M
HEPPNER MFG. CO., P.O. Box 1207, Round Lake, Ill.—AF
Hevi Duty Electric Co., 4212 W. Highland Blvd., Milwaukee 1, Wis.—C,F,H,K,S,X,AC
Hickok Electrical Instrument Co., 10514 Dupont Ave., Cleveland 8, Ohio—F
Highland Eng'g. Co., Main & Urban Sts., Westbury, N.Y.—A,B,C,D,E,F,G,H,J,K,L,N,P,Q,R,S,T,U,V,W,X,Z,AE
Hillburn Electronic Products 55 Nassau Ave., Brooklyn 22, N.Y.—W,AF
Hindle Transformer Co., Woods Church Rd., Flemington, N.J.—B,C,H,K,L,P,Q,S,T,U,V,X,AE,AJ
HI-Q DIV., AEROVOX CORP., Olean, N.Y.—A,B,Z
Hollingsworth Corp. John R., Clifton Heights, Pa.—AF
Houlihan Co., T. J., 2508 W. Lawrence Ave., Chicago 25, Ill.—W,AA
Hufford Machine Works, 2201 Carmelina Ave., Los Angeles 64, Calif.—C,S,X,Z,AD,AG
Hycor Co., 11423 Vanowen St., N. Hollywood, Calif.—Z
Industrial Transformer Corp., Gouldboro, Pa.—A,B,C,F,H,K,L,P,Q,S,V,X
Islip Transformer & Metal Co., Beech St., Islip, N.Y.—A,B,C,D,E,H,L,P,Q,S,T,U,V,W
Jacobs Instrument Co., 4718 Bethesda Ave., Bethesda 14, Md.—V
Jefferson Electric Co., 910 S. 25 St., Bellwood, Ill.—S,V
Jeffries Transformer Co., 1710 E. 57 St., Los Angeles 58, Calif.—C,F,K,S,Z
Jerold Electronics Corp., 26th & Dickinson Sts., Philadelphia 46, Pa.—AA
JFD Mfg. Co., 6101 16 Ave., Brooklyn 4, N.Y.—AA
Jobbins Electronic Enterprises, 500 Hamilton Ave., Menlo Park, Calif.—A,C,D,G,H,L,P,Q,S,T,U,V,X
Johnson Electronics Inc., 521 Elwell St., Orlando, Fla.—W,Z,AF,AG
Johnson Labs., Div. of Aladdin Industries, Inc., Willard Rd., Norwalk, Conn.—W
KENYON TRANSFORMER CO., 840 Barry St., Bronx 59, N.Y.—A,B,C,D,E,G,H,K,L,P,Q,R,S,T,U,V,Y,Z,AB,AG,AH,AI,AN
Keystone Products Co., Union City 2, N.J.—S
Kinetix Instrument Co., Inc., 902 Broadway, New York 10, N.Y.—S
Kings Electronics Co., 40 Marbledale Rd., Tuckahoe, N.Y.—O
Korb Eng'g & Mfg. Co., 30 Ottawa Ave., Grandville, Mich.—O
K-V Transformer Corp., 20 E. Franklin St., Danbury, Conn.—A,B,C,D,H,I,M,O,P,Q,S,T,U,V
Lab. for Electronics, Inc., 75 Pitts St., Boston, Mass.—A,B,H,Q,R,S,V,Z,AG
Lane Electronics Co., 7254 Atoll Ave., N. Hollywood, Calif.—W
LANGVIN MFG. CORP., 37 W. 65 St., New York 23, N.Y.—A,B,C,D,E,H,P,Q,S,U,V,AG,AK,AL,AM
Lee Electric & Mfg. Co., 2806 Clearwater St., Los Angeles 39, Calif.—G
Leeds Eng'g. Co., 34-40 79 St., Jackson Heights 72, N.Y.—A,B,C,D,E,H,J,L,Q,S,T,U,X
Lenkurt Electric Co., 1105 County Rd., San Carlos, Calif.—W,Z,AG
Leonard Electric Products Co., Inc., 67 34 St., Brooklyn 32, N.Y.—A,B,C,D,E,F,G,H,I,J,K,L,N,O,P,Q,R,S,T,U,V,W,X,Y,Z,AA,AB,AC,AD,AE,AF,AG,AH,AJ,AK,AL,AM
LePee Mfg. Co., 75-19 64 St., Glendale 27, N.Y.—A,B,D,H,I,L,P,Q,R,S,T,U
Lynch Carrier Systems, 96 Jessie St., San Francisco 5, Calif.—Z
Mag Electric Products, Inc., 14405 Crenshaw Ave., Gardiner, Calif.—X,Z,AD
Magnatran Inc., 248 Schuyler Ave., Kearny, N.J.—A,H,P,Q,S,U
Magnavox Co., Ft. Wayne 4, Ind.—B,C,H,S,X,Z
Magnetic Amplifiers, Inc., 632 Tinton Ave., New York 55, N.Y.—C,D,F,H,P,X,Z,AI
Magnetic Instrument Co., 82 Main St., W. Orange, N.J.—B,C,D,E,F,G,H,L,P,Q,S,T,U,V,W,X,Y,Z,AB,AC,AD,AG,AH,AI
MAGNETIC RESEARCH CORP., 318 Kansas St., El Segundo, Calif.—AD
Magnetics Research Co., 142 King St., Chappaqua, N.Y.—R,V,Z
MAGNETICS, INC., Box 230-T, Butler, Pa.—Z
Magnex Corp., 90-28 Van Wyck Expressway, Jamaica 18, L.I., N.Y.—A,B,C,D,E,F,G,H,I,K,L,O,P,Q,R,S,T,U,V,W,X,Y,Z,AB
Marine View Electronics, 744 E. 138 St., New York 54, N.Y.—W
Mark Electronics, Inc., 86 Shipman St., Newark, N.J.—AF
Merit Coil & Transformer Corp., 4427 N. Clark St., Chicago 40, Ill.—B,C,H,J,L,P,Q,S,T,U,W,AA,AC,AE
MICO INSTRUMENT CO., 80 Trowbridge St., Cambridge 38, Mass.—Z

Microtran Co., 84-11 Rockaway Beach Blvd., Rockaway Beach 93, N.Y.—A,B,C,D,E,H,L,N,P,Q,R,S,T,U,Y,AB,AC,AG,AH,AI,AK,AL,AM
Mid-West Coil & Transformer Co., 1642 N. Halsted St., Chicago 14, Ill.—A,B,C,D,G,H,I,L,O,P,Q,S,T,U,V,X,AB,AG,AH,AI
Midwest Electric Products Mankato, Minn.—K
Millen Mfg. Co., James, 150 Exchange St., Malden, Mass.—W
Miller Co., J. W., 5917 S. Main St., Los Angeles 3, Calif.—W,AA,AC
MILLIVAC INSTRUMENT CORP., 444 2 St., Schenectady, N.Y.—Z
Milwaukee Transformer Co., 5231 N. Hopkins St., Milwaukee 9, Wis.—A,B,C,D,E,F,G,H,I,J,K,L,P,Q,R,S,T,U,V,W,X,Z,AA,AE,AF,AG,AH,AJ,AK,AL,AM,AN
Moloney Electric Co., 5390 Bircher Blvd., St. Louis 20, Mo.—C,H,P,Q,S,V,AF
Munston Mfg. & Service, Beech St., Islip, N.Y.—B,D,H,K,P,Q,S,T,U,W
Nassau Research Develop. Associates, 60 Main St., Mineola, N.Y.—O
National Coil Co., P.O. Box 1237, Sheridan, Wyo.—W
National Instrument Co., 23 E. 26 St., New York 10, N.Y.—O
National Union Radio Corp., 237 Jacksonville Rd., Hatboro, Pa.—AI
Natural Lighting Corp., 612 West Elk Ave., Glendale 4, Calif.—C
N. Y. Transformer Co., Alpha, N.J.
Noethlfer Winding Labs., 9 Albermarle Ave., Trenton 3, N.J.—S
OGDEN COIL & TRANSFORMER CO., 2124 W. Carroll Ave., Chicago 12, Ill.—A,B,C,F,H,I,J,L,Q,S,T,U,AD,AE,AJ
OMCO Test Equip., Box 196, N. Las Vegas, Nev.—K,AD
Ortho Filter Corp., 196 Albion Ave., Paterson 2, N. J.—A,B,C,D,E,F,G,H,K,L,Q,S,T,U,V,X,Z,AG
Osborne Transformer Corp., 948 E. Lafayette Ave., Detroit 7, Mich.—C,F,H,Q,S,U,X
Oxford Electric Corp., 3911 S. Michigan Ave., Chicago 15, Ill.—B,G,K,S,AD
Pacific Transducer Corp., 11921 W. Pico Blvd., Los Angeles 64, Calif.—A
Palo Alto Eng'g., 440 Olive Ave., Palo Alto, Calif.—A,B,C,H,K,L,N,P,Q,S,V,AG
Pantek Co., Box 212, El Segundo, Calif.—X
P C A Electronics Inc., 2180 Colo. Ave., Santa Monica, Calif.—V
Peerless Electrical Products, Div. of Alter Lansing Corp., 9356 Santa Monica Blvd., Beverly Hills, Calif.—A,B,C,D,E,G,H,L,N,P,Q,R,S,V,X,Y,AB,AG,AI
Pereny Equipment Co., 893 Chambers Rd., Columbus 12, Ohio—C
Perkin Eng'g Corp., 345 Kansas St., El Segundo, Calif.—S
Permoflux Corp., 4900 W. Grand Ave., Chicago 39, Ill.—B,H,K,N,AG,AH,AI
PHILCO CORP.—ACCESSORY DIV., "A" & Allegheny Ave., Philadelphia 34, Pa.—C,D,H,L,W,AF
Philmore Mfg. Co., 113 University Pl., New York 3, N.Y.—H
PHOTOCIRCUITS CORP., GLEN COVE, N.Y.—W,AA
Polyphase Instrument Co., 705 Haverford Rd., Bryn Mawr, Pa.—V,AG,AH,AI
POLYTECHNIC RESEARCH & DEVELOP. CO., 202 Tillary St., Brooklyn 11, N.Y.—X
Power Transformer Co., 532 Mulberry St., Newark 5, N. J.—C,D,E,G,H,L,P,Q,R,S,T,U,X,AD,AE,AJ,AK,AL,AM
Precise Measurements Co., 942 Kings Highway, Brooklyn 23, N.Y.—J
Q. L. C. Corp., 10 Aubrey St., Summit, N.J.—W
Radio Apparatus Corp., 55 N. New Jersey St., Indianapolis, Ind.—AD
Radio Music Corp., 84 So. Water St., Port Chester, N.Y.—A,B,C,H,L,S,T,U,V,X
RADIO CORP. OF AMERICA, TUBE DIV., 415 S. 5th St., Harrison, N.J.—A,B,C,D,E,F,G,H,I,L,O,P,Q,R,S,T,U,V,W,X,Y,AB,AC,AD,AE,AF,AG,AH,AI
RAM Electronics, Irvington-on-Hudson, N.Y.—V,AF
Radionic Controls, Box 237, Herrin, Ill.—A,B,C,D,E,F,G,H,J,K,L,P,Q,S,T,U,V,W,X,Y,AG,AH,AI
Radio Television Products Corp., 308 N. Lake St., Grass Lake, Mich.—W
Railway Communications, Smith Rd. & Glenwood, Raytown, Mo.—Z
Randall, Inc., Douglas, 102 High St., Westerly, R.I.—C,D,E,H,S,T,U
RAYPAR, INC., 7800 W. Addison St., Chicago 34, Ill.—H,V,W,Z,AD,AF,AI
RAYTHEON MFG. CO., Waltham 54, Mass.—F,G,H,K,L,Q,S,V,X,Z,AB,AD,AE,AG,AI
Redman Electronics Corp., 92 Prospect St., Thompsonville, Conn.—V,W
Rhode Island Electronics Inc., Mill St., Londsdale, R.I.—Z
R.K. Mfg. Co., P. O. Box 112, Marion, Ill.—A,C,D,E,F,G,H,K,L,N,P,Q,S,X,Y,AG,AI

Rola Co. 2530 Superior Ave., Cleveland 14, Ohio—BAF
 Rollins Corp., P.O. Box 213, Lewes, Del.—A, B, C, E, H, L, N, P, Q, R, S, T, U, V, X, AG, AH, AI
 Saratoga Industries, Ballston Ave. Saratoga Springs, N. Y.—A, B, C, D, E, F, G, H, K, L, P, Q, R, S, T, U, V, X, Z, AG, AH
 Schaevitz Eng'g., Crescent Blvd. & Drexel Ave., Camden 1, N.J.—AC
 Sciaky Bros., 4915 W. 67th St., Chicago 38, Ill.—AE
 Sealtron Co., 9701 Reading Rd., Cincinnati 15, Ohio—W
 Schutter Mfg. Co., Carl W., 80 E. Montauk Highway, Lindenhurst, N.Y.—O
 Sickles Div., F. W., General Instrument Corp., P. O. Box 330 Chicopee, Mass.—W, X, Z, AF, AI
 Sierra Electronic Corp., 1050 Brittan Ave., San Carlos, Calif.—EK
 Silver Bay Equip. Co., 5004 20th NW, Seattle 7 Wash.—V, W
 Skysweeper, Inc., Johnsburg, Ill.—AA
 Smith Mfg. Co., Nathan K., 105 Pasadena Ave., S. Pasadena, Calif.—I
 SNC Mfg. Co., P. O. Box 277, Oshkosh, Wis.—B, C, D, H, L, P, Q, S, T, U, X
 Sola Electric Co., 4633 W. 16 St., Chicago 50, Ill.—I, AD
 Sonotone Corp., Elmsford, N.Y.—BA, HA, I
 Southwestern Industrial Electronics Co., 2831 Post Oak Rd., Houston, Texas—E, K, R, X, Y, AB, AG
 Spartan Radio Television, 2400 E. Ganson St., Jackson, Mich.—B, C, H, J, L, P, Q, S, T, U, V, W
 Specialties, Inc., Skunks Misery Rd., Syosset, L.I., N.Y.—H, K, L, O, S, V, Y, Z, AB, AD
 Sperry Gyroscope Co., Great Neck, N.Y.—O
 SPRAGUE ELECTRIC CO., North Adams, Mass.—V
 Square Root Mfg. Corp., 391 Saw Mill River Rd., Yonkers, N.Y.—A, B, C, D, E, F, G, H, K, L, P, Q, R, S, T, U, V, W, X, Z, AA, AF, AG, AH
 Standard Coil Products Co., 2329 N. Pulaski Rd., Chicago 39, Ill.—X, Z
 Standard Electrical Products Co., 2240 E. 3 St., Dayton 3, Ohio—B, C, F, G, H, J, K, L, P, Q, S, T, U, X, Y, Z, AC, AD, AE, AG, AH, AI, AJ, AK, AL, AM, AN
 STANDARD ELECTRONICS CORP., 285 Emmet St., Newark 5, N.J.—Q, S, T, U, AD
 Standard Electronic Research Corp., 2 East End Ave., New York 21, N.Y.—Z
 STANDARD TRANSFORMER CORP., 3580 Elston Ave., Chicago 18, Ill.—A, B, C, D, F, G, H, J, K, L, N, P, Q, S, T, V, Z, AC, AD, AF
 Stanwyck Winding Co., 137 Walsh Ave., Newburgh, N.Y.—S, T, U, V, W, Z
 Sterling Transformer Corp., 297 N. 7 St., Brooklyn, N.Y.—A, B, C, D, E, F, H, K, L, P, Q, S, V, X, AG, AN
 Stolle Eng'g., 3970 S. Grand Ave., Los Angeles 37, Calif.—AF
 Stone City, P. O. Box 351, Bedford, Ind.—M
 Stromberg-Carlson, Sotelo Div., 3127 Holmes St., Dallas 15, Tex.—Z
 Strong Electric Corp., 87 City Park Ave., Toledo 2, Ohio—C, H, L, S
 Summit Coil Co., 4 Claremont Rd., Bernardsville, N.J.—W, AA
 Superior Electric Co., 83 Laurel St., Bristol, Conn.—AC
 SYLVANIA ELECTRIC PRODUCTS INC., 1740 Broadway, New York 19, N.Y.—S, W
 Syntronic Instruments, Inc., 100 Industrial Rd., Addison, Ill.—AF
 Tartak Electronics, 2979 N. Ontario St., Burbank, Calif.—A, B, C, D, G, H, K, L, N, P, Q, S, T, U, V, X, Y, AG, AH, AI
 Tech Labs., Inc., 120 Hillcrest Ave., Leonia, N.J.—K
 Technical Apparatus Builders, 109 Liberty St., New York 6, N.Y.—S
 Technitrol Eng'g. Co., 2751 N. 4 St., Philadelphia 33, Pa.—V
 Tele-Matic Industries Inc., 1 Joramemon St., Brooklyn 1, N.Y.—S, AA, AD
 Telescreen Corp., 36 Grove St., New Canaan, Conn.—X
 Television Labs., Inc., 5045 W. Lake St., Chicago 44, Ill.—B, H, T, Z
 Telex, Inc., 1633 Eustis St., St. Paul 1, Minn.—B, R, AH, AI
 Telkor, Inc., Telegraph Rd., Elyria, Ohio—AA
 Tensitron, Inc., Pin Hill, Harvard, Mass.—AC
 TEXAS INSTRUMENTS, INC., 6000 Lemmon Ave., Dallas 9, Tex.—A, B, C, D, F, G, H, L, P, S, V, W, X, Y, Z, AG, AH, AI
 Thormador Electrical Mfg. Co., Electronics Div., 2000 S. Camfield Ave., Los Angeles 22, Calif.—A, B, C, D, E, H, J, K, L, P, Q, R, S, T, U, V, AG, AL, AJ
 Thomas & Skinner, 1120 E. 23 St., Indianapolis 7, Ind.—M
 Thompson Clock Co., H. C., 38 Federal St., Bristol, Conn.—H, K, R
 Thor Transformer & Electronics, 750 San Antonio Road, Palo Alto, Calif.—C, F, G, H, K, L, O, Q, S, T, U, X, AC, AD, AE, AJ
 Todd Products Co., 156 Gramatan Ave., Mt. Vernon, N.Y.—A, B, C, H, I, K, P, Q, S, T
 Todd-Tran Corp., 156 Gramatan Ave., Mount Vernon, N.Y.—AF
 Torcooil, 1374 Mobile Ct., St. Louis 10, Mo.—Z
 Torwico Electronics, Inc., 967 Frelinghuysen Ave., Newark 5, N.J.—Z
 Transformer & Electronic Spec. Co., 3824 Terrace St., Philadelphia 28, Pa.—B, C, D, E, F, K, L, P, Q, R, S, T, U, V, Y, AG, AH, AI



Transformer Engineers, 161 E. California St., Pasadena 1, Calif.—A, B, C, D, E, F, G, H, K, L, P, Q, S, T, U, V, AA, AD, AG, AH, Y, Z, AB, AG, AH, AI, AN
 Transformer Manufacturers, 850 W. Weed St., Chicago 22, Ill.—B, C, H, L, S, T
 Transformer Technicians, 2608 N. Cicero Ave., Chicago 39, Ill.—A, B, C, D, E, F, G, H, J, K, L, P, Q, R, S, T, U, V, X, AD, AE, AG, AI, AJ, AN
 Transformers, Inc., 532 North St., Endicott, N.Y.—A, B, C, D, E, F, H, K, L, P, Q, R, S, T, U, V, X, Y, Z, AB, AG, AH, AI, AN
 Transvision, Inc., 460 North Ave., New Rochelle, N.Y.—B, C, H, T, W
 TRESCO, 3824 Terrace St., Philadelphia 28, Pa.—A, B, C, D, E, H, K, L, N, O, P, Q, R, S, T, U, V, X, Y, AG, AH, AI, AK, AL, AM, AN
 Translite Electronics, Corp., 5720 W. Armistage Ave., Chicago 39, Ill.—AF
 Trenton Transformer Corp., P.O. Box 568, Trenton, N.J.—C, F, H, J, K, L, P, Q, S, T, U, X, AC, AD, AE
 Triad Transformer Corp., 4055 Redwood Ave., Venice, Calif.—A, B, C, D, E, H, J, K, L, N, P, Q, R, S, T, U, V, Y, Z, AB, AF, AG, AH, AI
 Tri-Dex Co., P. O. Box 1207 Lindsay, Calif.—W
 Triwee Transformer Co., 3261 N. Milwaukee Ave., Chicago 18, Ill.
 T V Products Corp., 907 E. 23 St., Paterson 3, N.J.—B, C, H, Q, S, T
 Underwood Corp., Electronic Computer Div., 35-10 36 Ave., Long Island City 6, N.Y.—V
 Union Electric Products Co., 24 Edison Place, Newark 2, N.J.—B, C, G, H, I, L, N, Q, S, T, AD, AG, AH, AI
 Union Spring & Mfg. Co., 1057 Summit Ave., Jersey City 7, N.J.—A, B, C, D, E, F, G, H, I, J, K, L, N, P, Q, R, S, U, V, W, X, Y, Z, AB, AC, AD, AE, AF
 United Pressed Products Co., 741 W. Harrison St., Chicago 7, Ill.—W
 United Transformer Co., 150 Varick St., New York 13, N.Y.—A, B, C, D, E, F, G, H, J, K, L, N, O, P, Q, R, S, T, U, V, X, Y, Z, AB, AC, AD, AG, AH, AI, AJ, AK, AL, AM, AN
 Universal Mfg. Co., 410 Hillside Ave., Hillside, N.J.—Z
 Universal X-Ray Products, 1140 N. Western Ave., Chicago 22, Ill.—AJ
 Univox Corp., 102 Warren St., New York 7, N.Y.—L, S
 U. S. ELECTRONICS CORP., 275 Warren St., Lyndhurst, N.J.—B, D, F, G, H, I, J, K, L, P, Q, P, S, T, U, V, W, X, AA, AD, AE, AF, AG, AI, AN
 Utah Radio Products Co., 1123 E. Franklin St., Huntington, Ind.—B, C, H, L, T, V
 Vanguard Electronics Co., 3384 Motor Ave., Los Angeles 34, Calif.—W, AF
 Varo Mfg. Co., 1801 Walnut St., Garland, Tex.—C, H, S, X, AG
 Vacuum Tube Products, 506 So. Cleveland St., Oceanside, Calif.—AE
 VECTRON, INC., 400 Main St., Waltham 54, Mass.—O, Z
 Vickers Electric Div., Vickers, Inc., 1835 Locust St., St. Louis 3, Mo.—Z
 WAVELINE, Passaic Ave., Caldwell, N.J.—O
 Welch Electric Co., 1221 Wade St., Cincinnati 14, Ohio—B, C, H, Q, T, AB
 West Coast Electronics Co., 5873 W. Jefferson Blvd., Los Angeles 16, Calif.—W
 Westinghouse Electric Corp., Box 868, Pittsburgh 30, Pa.—C, F, G, H, K, L, P, Q, S, U, V, X
 WESTON ELECTRICAL INSTRUMENT CORP., 614 Frelinghuysen Ave., Newark 5, N.J.—F
 Weymouth Instrument Co., 1440 Commercial St., East Weymouth 89, Mass.—N, O
 Wheeler Insulated Wire Co., 150 E. Aurora St., Waterbury, Conn.—B, H, Q, S, V, AG, AH, AI
 White Industries, Inc., 421 W. 54 St., New York 19, N.Y.—W
 Wilcox Research Co., 11122 Aqua Vista St., N. Hollywood, Calif.—W
 Woodward-Schumacher Electric Corp., 1725 W. North Ave., Chicago 22, Ill.—B, C, G, H, I, L, P, Q, S, T, V, AG, AI
 Workman TV Inc., 309 Queen Anne Rd., Teaneck, N.J.—H, I

93—TRANSMITTERS

Code senders, automatic A
 Depth sounders B
 Radiosondes C
 Remote pickups D
 Transceivers, fixed E
 Transceivers, portable hand F
 Transceivers, portable lifboat G
 Transmission monitoring equipment H
 Transmitters, amateur I

Transmitters, aviation J
 Transmitters, broadcast AM K
 Transmitters, broadcast FM L
 Transmitters, broadcast UHF-TV M
 Transmitters, broadcast VHF-TV N
 Transmitters, citizens radio O
 Transmitters, code P
 Transmitters, color TV AD
 Transmitters, direction finding Q
 Transmitters, facsimile R
 Transmitters, Ioran S
 Transmitters, marine T
 Transmitters, microwave U
 Transmitters, mobile V
 Transmitters, radar W
 Transmitters, radio range X
 Transmitters, radioteletype Y
 Transmitters, single sideband AE
 Transmitters, sonar Z
 Transmitters, telemetering AA
 Transmitters, UHF AB
 Transmitters, VHF AC

Acme Electronix, Div., NEA Service 1200 W. 35th St., Cleveland 13, Ohio—R
 Aeronautical Communications Equip., Inc., 3090 Douglas Rd., Miami 33, Fla.—J, P, Q, AC
 Aeronautical Electronics, P.O. Box 6043 Raleigh, N.C.—J, AC
 Aeronautical Radio Mfg. Co., 155 1 St., Mineola, N.Y.—J, AC
 Air Associates, Teterboro, N.J.—B, C, F, G, J, Q, T, U, V, W, X, AB, AC
 Airborne Electronics Co., Metropolitan Airport, Van Nuys, Calif.—J, AC
 Aircraft Armaments Inc., 4415 Reisterstown Rd., Baltimore 15, Md.—A, C, H, W
 AIRCRAFT RADIO CORP., P.O. Box 150, Boonton, N.J.—F, J
 Allied Int'l Inc., 230 Park Ave., New York 17, N.Y.—T
 Allied Research & Eng'g. Inc., 1041 N. Las Palmas Ave., Hollywood 38, Calif.—U
 American Electroengineering Corp., 2040 Colorado Ave., Santa Monica, Calif.—Q, W, AC
 American Radio Co., 445 Park Ave., New York 22, N.Y.—A, B, C, J, K, L, U, W
 Amgo Corp., 2037 W. Division St., Chicago 22, Ill.—A
 Ansley Electronics, 85 Tremont St., Meriden, Conn.—C, S, Q, U, W, AB, AC
 Applied Electronics Co., 1246 Folsom St., San Francisco 3, Calif.—T, V
 Applied Science Corp., P.O. Box 44 Princeton, N.J.—AA
 Atlas Precision Products Co., 3801 Castor Ave., Philadelphia 24, Pa.—S, W
 Audio Products Corp., 2265 Westwood Blvd., Los Angeles 64, Calif.—C, J, W, AA, AB, AC
 Authorized Mfrs. Service, 919 Wyckoff Ave., Brooklyn 27, N.Y.—F
 Avionex Electronics Corp., 2838 N. Naomi St., Burbank, Calif.—E, I, J, P, Q, T, V, W
 Babcock Radio Eng'g., Inc., 7942 Woolley Ave., Van Nuys, Calif.—I
 Barber Labs., Alfred W., 32-44 Francis Lewis Blvd., Flushing 58, N.Y.—AF
 Barker & Williamson, 237 Fairfield Ave., Upper Darby, Pa.—I, V, Y, AD
 Basset, Inc., Box 1314 N. E. 17 Court, Fort Lauderdale, Fla.—E, F, G, I, J, T, V
 Beam Instruments Corp., 350 5th Ave., New York 1, N.Y.—C, J, Q, U, W, X, AB, AC
 BENDIX AVIATION CORP., PACIFIC DIV., 11600 Sherman Way, N. Hollywood, Calif.—T, W, Z, AA
 BENDIX RADIO DIV., BENDIX AVIATION CORP., Towson 4, Md.—F, J, T, V
 Berger Communications, 109-01 72 Rd., Forest Hills, L.I., N.Y.—E, J, V
 Boehme, Inc., H. O., 915 Broadway, New York 10, N.Y.—A
 Brelec Electronics Corp., 55 Vandam St., New York 13, N.Y.—A
 Budelman Radio Corp., 375 Fairfield Ave., Stamford, Conn.—D, O, U, Y, AB, AC
 Bunnell & Co., J. H., 81 Prospect St., Brooklyn 1, N.Y.—A, J, X, Y
 Canoga Corp., 5955 Sepulveda Blvd., Van Nuys, Calif.—W
 Central Electronics Inc., 1247 W. Belmont Ave., Chicago 13, Ill.—I, AE
 C.G.S. Labs., Inc., 391 Ludlow St., Stamford, Conn.—U
 Chatham Electronics Corp., 630 W. Mt. Pleasant Ave., Livingston, N.J.—Z
 Codetypers Laboratories, 550 5th Ave., New York 19, N.Y.—P
 COLLINS RADIO CO., 855 35 St., N.E., Cedar Rapids, Ia.—I, J, K, U, AB, AC
 Color Television Inc., 973 E. San Carlos Ave., San Carlos, Calif.—W
 Communication Devices Co., 2331 12 Ave., New York 27, N.Y.—E, F, G, J, K, Q, T, V, X, AB
 Communication Measurements Lab., 350 Leeland Ave., Plainfield, N.J.—I
 Communications Co., 300 Greco Ave., Coral Gables, Fla.—E, J, O, T, V, AB, AC
 Conn Marine Instrument Co., Essex, Conn.—O, Q, T, V, W, AB
 Conn. Telephone & Electric Co., 70 Britannia St., Meriden, Conn.—E, O, T, U, V, AA

Continental Electronics Mfg., Co., 4212 S. Ruckner Blvd., Dallas 10, Tex.—K.M
 Control Corp., 718 Central Ave., Minneapolis 14, Minn.—AA
 Crosby Laboratories, Inc., Box 233, Hicksville, N.Y.—AE
 Crown Eng'g., 3821 Commercial N.E., Albuquerque, N.M.—AA,AB
 CAGE ELECTRONICS CORP., 69 N. 2 St., Beech Grove, Ind.—O,U,AA
 Dayton Aviation Radio & Equip. Corp., RR 3, Troy, Ohio—J
 Electronic Co., 9010 Bellanca Ave., Los Angeles, Calif.—F
 Formit Electric & Mfg. Co., 5 Hadley St., Cambridge 40, Mass.—W
 G & R, Ltd., 402 E. Gutierrez St., Santa Barbara, Calif.—AB,AC
 GUMONT LABS., INC., ALLEN B. TV TRANSMITTER DEPT. MOBILE COMM. DEPT., 1500 Main St., Clifton, N.J.—E,F,M,N,U,V,AB,AC,AD
 Hedio of N.Y., Inc., 70-72 E. 2nd St. Mineola, L.I., N.Y.—A,E,I,J,K,Q,T,V,AA
 Electronic Control Systems, 2135 Westwood Blvd., Los Angeles 25, Calif.—W
 Electronic Measurements Co., Lewis St. & Maple Ave., Eatontown, N.J.—J,K,L,R
 Electro-Sound Corp., 115 Halleck St., Boston, Mass.—BC
 Electro-Technics, Inc., 198 Albion Ave., Paterson, N.J.—AD
 Electrotech Corp., 15601 Arrow Hwy., Azusa, Calif.—E,Q,W,AB,AC
 El-Tronics, Inc., 5 & Noble Sts., Philadelphia 23, Pa.—C,E,F,G,P,R,T,V,W,X,Y,AA,AB
 Eric Radio Labs., Stewart Ave., Garden City, N.Y.—E,Q,T,V,X,Y,AB,AC
 Espey Mfg. Co., 528 E. 72 St., New York 21, N.Y.—J,K,L,M,N,O,Q,R,V,W,AA,AB,AC
 FEDERAL TELECOMMUNICATION LABS., INC., 500 Washington Ave., Nutley, N.J.—M,N,U,V,AB,AD
 FEDERAL TELEPHONE & RADIO CO., DIV. I.T.&T., 100 Kingsland Rd., Clifton, N.J.—S,U,V,X,AC
 Feiler Eng'g. & Mfg. Co., 8026 N. Monticello Ave., Skokie, Ill.—F,O
 Fisher Research Lab., Inc., 1961 University Ave., Palo Alto, Calif.—T
 Freed Electronics & Controls Corp., 200 Hudson St., New York 13, N.Y.—C,E,F,G,S,T,U,V,W,X,Y,Z,AA,AB,AC
 Garod Radio Corp., 70 Washington St., Brooklyn 1, N.Y.—C
 GATES RADIO CO., Quincy, Ill.—K,L,M,N,P,V,Y,AB,AC
 GENERAL COMMUNICATION CO., 681 Beacon St., Boston 15, Mass.—W
 GENERAL ELECTRIC CO., ELECTRONICS DIV., COMM. EQUIP. DEPT., Electronics Park, Syracuse, N.Y.—E,F,O,T,U,V,AA,AC
 General Electronics, Inc., 32 W 22 St., New York 10, N.Y.—S,Z
 GENERAL PRECISION LABS., INC., 63 Bedford Rd., Pleasantville, N.Y.—AD
 GENERAL RADIO CO., 275 Mass. Ave., Cambridge 39, Mass.—H
 G & M Equipment Co., 7315 Varna Ave., North Hollywood, Calif.—E,F,J,K,T
 Gosset Co., 801 S. Main St., Burbank, Calif.—E,I,J,V,AC
 GRAYBAR ELECTRIC CO., Nat'l. Headquarters, 420 Lexington Ave., New York 17, N.Y.—K,M,N
 Gray Radio Co., 501 Forest Hill Blvd., W. Palm Beach, Fla.—T
 Gulton Mfg. Corp., 212 Durham Ave., Metuchen, N.J.—B,Z
 G. W. Assoc., Box 2263 El Segundo, Calif.—U
 Hallicrafters Co., 4401 W. 5 Ave., Chicago 24, Ill.—E,F,I,J
 Hamlyn Electronics Corp., 32 Holman Blvd., Hicksville, N.Y.—J,O,P,T,V
 HAMMARIUND MFG. CO., 460 W 34 St., New York 1, N.Y.—AA
 Harmon Electronics Co., 11431 Truman Rd., Independence, Mo.—V,AA
 Hastings Instrument Co., Superhighway at Pine Ave., Hampton, Va.—W
 Heath Co., 305 Territorial, Benton Harbor, Mich.—I
 Hegan Labs, Inc., 155 Perry St., New York 14, N.Y.—R
 Hudson American Corp., 25 W 43 St., New York, N.Y.—T
 Ieco Div., Dresser-Stacey Co., 875 Michigan Ave., Columbus 8, Ohio
 Industrial Radio Corp., 428 N. Parkside Ave., Chicago 44, Ill.—AB,AC
 I.R.L. Research Associates, 2221 Warwick Ave., Santa Monica, Calif.—H,F,AA
 Irviss Electronics Corp., 6058 Fullerton Ave., Chicago 39, Ill.—V
 Jefferson Ray, 40 E. Merrick Rd., Freeport, N.Y.—E,T
 JHNSON CO., E. F. Waseca, Minn.—I,V
 Jar Eng'g. Corp., 2995 Middlefield Rd., Palo Alto, Calif.—R,E,F,I,J,O,T,V,X,AB,AC
 John Research Laboratories, 22 Pine St., Freeport, N.Y.—AE
 Jones Electronics Co., 40 Marbledale Rd., Tuckahoe, N.Y.—C,U,W
 Cybernetics Corp., 1100 Raymond Blvd., Newark 5, N.J.—H
 Kavoie Labs Inc., Morganville, N.J.—E,V,W,AB,AC
 Korf, Inc., 11916 W. Pico Blvd., Los Angeles 64, Calif.—E,J,V,X,AB,AC

Lettine Radio Mfg. Co., 62 Berkley St., Valley Stream, N.Y.—I,P,V
 Link Radio Corp., 125 W. 17th St., New York 11, N.Y.—E,F,O,V,AB,AC
 Lysox Mfg. Co., 1401 Clinton St., Hoboken, N.J.—F,I,T,V,AB,AC
 Mackay Radio & Telegraph Co., 345 Hudson St., New York 14, N.Y.—E,F,G,Q,T
 MAGNAVOX, Fort Wayne 4, Ind.—J,W,AB,AC
 Magnex Corp., 90-28 Van Wyck Expressway, Jamaica 18, N.Y.—D,F,O,Q,U,W
 Marconi's Wireless Telegraph Co., 23 Beaver St., New York 4, N.Y.—A,E,F,G,H,J,K,L,N,Q,W,X,AC
 Maryland Electronic Mfg. Corp., 5009 Calvert Rd., College Park, Md.—X,AB,AC
 Mattson-Cowley, 1487 Lincoln Ave., Pasadena 3, Calif.—A,E,V,AA
 Maxson Corp., W. L., 460 W 34 St., New York 1, N.Y.—U,W
 MELPAR, INC., 452 Swann Ave., Alexandria, Va.—Q,W,Z,AA,AB,AC
 Mitchell Industries, Mineral Wells, Texas—J,Q
 Mohawk Electronic Research Labs., RD #4 Box 126A, Amsterdam, N.Y.—I,J,P,AC
 Multi-Products Co., 559 E. Ten Mile Rd., Hazel Park, Mich.—I
 Munston Mfg. & Service, Inc., Beech St., Islip, N.Y.—A,E,Q,T,X
 National Aeronautical Corp. (NARCO), 180 S. Main St., Ambler, Pa.—J
 Northern Radio Co., 314 Bell St., Seattle 1, Wash.—E,H,I
 Otis Elevator Co., Electronic Div., 35 Ryerson St., Brooklyn 5, N.Y.—J,Q,S,U,V,W,X,Y,Z,AA,AB,AC
 Pacific Mercury TV Mfg. Corp., 5955 Van Nuys Blvd., Van Nuys, Calif.—C,F,J,O,AA
 Packard-Bell Co., 12333 W. Olympic Blvd., W. Los Angeles, Calif.—W
 Parts Producing Corp., Manhattan Div., 1861 2 Ave., New York 28, N.Y.—V
 Pearce-Simpson, Inc., 3023 Coral Way, Miami 34, Fla.—E,F,T
 Petroff, Peter A., 127 Water St., New York 5, N.Y.—C
 Phebo, Inc., 900 Kingston Rd., Baltimore 12, Md.—CAA
 PHILCO CORP., Government & Industrial Div., 4700 Wissahickon Ave., Philadelphia 44, Penna.—U
 Philmore Mfg. Co., 113 University Pl., New York 3, N.Y.—I
 Plastics & Electronics Co., Inc., 272 Northland Ave., Buffalo 8, N.Y.—F
 Albert Pratt, 1939 N. 18 St., Milwaukee 5, Wis.—V
 Radio City Products Co., 101 W. 31st St., New York 1, N.Y.—C
 RADIO CORP. OF AMERICA, RCA VICTOR DIV. ENG'G. PRODUCTS DIV., Camden 2, N.J.—E,F,J,K,L,M,N,R,S,U,V,W,X,Z,AB,AC,AD
 RADIO ENGINEERING LABS., 36-40 37 St., Long Island City 1, N.Y.—D,I,U,AB,AC
 Radio Labs Inc., 1846 Westlake Ave. N. Seattle 9, Wash.—J,T
 Radio Mfg. Engineers, Inc., 300 1 Ave., Peoria 6, Ill.
 Railway Communications, Smith Rd & Glenwood, Raytown, Mo.—V
 RAYTHEON MFG. CO., 100 River St., Waltham 54, Mass.—B,T,W
 Remco Mfg. Co., 545 N. LaSalle St., Chicago 10, Ill.—C
 Remler Co., 2101 Bryant St., San Francisco 10, Calif.—J
 Resdel Eng'g., 2351 Riverside Dr., Los Angeles 39, Calif.—W,X
 Reynolds Radio & Equip. Lab., H. B., 219 Stone St., Oneida, N.Y.—F,V
 Rich Electronics, Inc., 212 N.W. 8 Ave., Miami 36, Fla.—T,AC
 Rosen Eng'g. Products, Inc., Raymond, 32 & Walnut Sts., Philadelphia 4, Pa.—AA
 Ryan Industries, Inc., 19159 John R St., Detroit 3, Mich.—W
 Sanders Associates, Inc., 137 Canal St., Nashua, N.H.—U,W,Z
 Scantlin Electronics, J.R., 145 W. Hazel St., Los Angeles 24, Calif.—N,O,AC
 Schaefer Custom Eng'g., 2279 Alessandro St., Los Angeles 39, Calif.—AA
 Schuttig & Co., 9th & Kearny Sts., N.E., Washington 17, D.C.—J,AC
 Sierra Electronic Corp., 1050 Brittan Ave., San Carlos, Calif.—H,R,U,Y,AB,AC
 Sightmaster Corp., 111 Cedar St., New Rochelle, N.Y.—O
 Silver Bay Equip. Co., 5004 20th NW Seattle 7, Wash.—T,V
 Slate & Assoc., Claude C., 11370 W. Olympic Blvd., Los Angeles 64, Calif.—J,T,U,AB,AC
 Sonar Radio Corp., 3050 W. 21 St., Brooklyn 24, N.Y.—C,I,J,V,AB,AC
 Spera Electronics Labs., 37-10 33 St., Long Island City, N.Y.—E,F,I,J,M,O,V,AB
 Standard Coil Products Co., 2329 N. Pulaski Rd., Chicago 39, Ill.—C,AA,AB,AC
 STANDARD ELECTRONICS CORP., 285 Emet St., Newark 5, N.J.—K,L,M,N,T
 Stelma, 389 Ludlow St., Stamford, Conn.—Y
 Stephens Mfg. Corp., 8538 Warner Dr., Culver City, Calif.—G
 Stone City Machine & Tool Co., 1206 7th St., Bedford, Ind.—N
 Technical Materiel Corp., 700 Fenimore Rd., Mamaroneck, N.Y.—I,J,K,Y

Telaugraph Corp., 16 W. 61st St., New York 23, N.Y.—A
 Tele-Broadcasters Inc., 158 E. 56th St., New York, N.Y.—A,C,D,E,F,I,J,K,L,O,U,V,AA,AB,AC
 TELECHROME, INC., 88 Merrick Rd., Amityville, L.I., N.Y.—AD
 Telemarine Communications Co., 3040 W. 21 St., Brooklyn 23, N.Y.—E,F,G,I,J,K,L,T,V,X,Y,AB,AC
 Telemetering Associates, 4940 Pine Forest Dr., Marietta, Ga.—C,AA,AC
 Telephonics Corp., Park Ave., Huntington, N.Y.—F,G
 Telescreen, 36 Grove, New Canaan, Conn.—U,W
 Television Utilities Corp., 1315 Jericho Turnpike, New Hyde Park, L.I., N.Y.—H
 TEL-INSTRUMENT CO., 50 Paterson Ave., E. Rutherford, N.J.—N
 TEXAS INSTRUMENTS INC., 6000 Lemmon Ave., Dallas, Texas—U,W,Z
 Times Facsimile Corp., 540 W. 58 St., New York 19, N.Y.—R
 Transatron, Inc., 154 Spring St., New York 12, N.Y.—I,T,V
 Transmitter Equipment Mfg. Co., 35 Ryerson St., Brooklyn 5, N.Y.—J,Q,S,U,V,W,X,Y,Z,AA,AB,AC
 Ultradyne Eng'g. Labs, Inc., P. O. Box 8007, Albuquerque, N. Mex.—A
 Ultrasonic Corp., 61 Rogers St., Cambridge, 42, Mass.—C,W,Z
 Union Spring & Mfg. Co., 1057 Summit Ave., Jersey City 7, N.J.—E,F,G
 Varian Associates, 611 Hansen Way, Palo Alto, Calif.—U,W
 VECTRON, INC., 400 Main St., Waltham 54, Mass.—U,AB
 Video Corp. of America, 229 W. 28 St., New York 1, N.Y.—U,W
 Videon Electronic Corp., 222 E. Ohio St., Indianapolis 4, Ind.—I,J
 WAVELINE INC., Passaic Ave., Caldwell, N.J.—U
 West Coast Electronics Co., 5873 W. Jefferson Blvd., Los Angeles 16, Calif.—V,AA,AC
 Western Mfg. Co., 1400 W. 22 St., Kearney, Nebr.—E,F,I,Q,U,V,AB,AC
 WESTINGHOUSE ELECTRIC CORP. 2519 Wilkens Ave., Baltimore 3, Md.—J,K,L,U,W
 Westinghouse Electric Corp., Box 868, Pittsburgh 30, Pa.—K,I,U,AA
 Westrex, 111 8 Ave., New York 11, N.Y.—Y
 Weymouth Instrument Co., 1440 Commercial St., E. Weymouth 89, Mass.—U
 White Industries, Inc., 421 54 St., New York 19, N.Y.—J
 White & Sons, Inc., Wilfrid O., 178 Atlantic Ave., Boston 10, Mass.—Z
 Wilcox Electric Co., 1400 Chestnut St., Kansas City 1, Mo.—J,W,X,Y,AC
 Williams Ship-Radio Co., 4366 Montone St., San Diego 7, Calif.—T
 Wilmar Mfg. Co., 2715 E. 14th St., Kansas City 27, Mo.—F,G
 Wunderlich Radio Co., 2 5th Ave., New York 11, N.Y.—C,D,E,F,G,R,V,AA,AB

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Blowers	A
Conrad alarms	I
Control consoles	B
Couplers	C
Diplexers	D
Keyers	E
Keys	F
Power Supplies	G
Power Supplies, auxiliary	H

Acme Electric Corp., Cuba, N.Y.—G
 Aeronautical Communications Equip., Inc., 3090 Douglas Rd., Miami 33, Fla.—E
 Allied Research & Eng'g., 1041 N. Las Palmas Ave., Hollywood 38, Calif.—C
 American Electroengineering Corp., 2040 Colo. Ave., Santa Monica, Calif.—B,G
 Anglo Corp., 2037 W. Division St., Chicago 22, Ill.—F
 Audio Products Corp., 2265 Westwood Blvd., Los Angeles 64, Calif.—B,G
 Barker & Williamson, 237 Fairfield Ave., Upper Darby, Pa.—C,E,G
 Bassett Inc., Rex, 1314 NE 17th Court, Ft. Lauderdale, Fla.—G
 BENDIX RADIO DIV., BENDIX AVIATION CORP., Baltimore 4, Md.—E
 Boehme, Inc., H. O., 915 Broadway, New York 10, N.Y.—E,F
 Bogue Electric Mfg. Co., 52 Iowa Ave., Paterson 3, N.J.—G,H
 Brisco Electronics Corp., 55 Vandam St., New York 13, N.Y.—E,F
 British Electronic Sales Co., 23-03 45th Rd., Long Island City 1, N.Y.—A
 Bunnell & Co., J. H., 81 Prospect St., Brooklyn 1, N.Y.—E,F

C.G.S. Labs, Inc., 391 Ludlow St., Stamford, Conn.—C
 Chatham Electronics Corp., 630 W. Mt. Pleasant Ave., Livingston, N.J.—G,H
 Clez Laboratories, Inc., 142 S. Livingston Ave., Livingston, N.J.—E,G
 Codetypers Labs., 560 5 Ave., New York 19, N.Y.—E
 Conn. Telephone & Electric Corp., 70 Britannia St., Meriden, Conn.—G
 Continental Electronic Mfg. Co., 4212 S. Buckner Blvd., Dallas 17, Texas.—D
 Corry-Jamestown Mfg. Corp., 44 N. Center St., Corry, Pa.—B
 Dow-Key Co., Warren, Minn.—F
 Drake Co., R. L., 18 E. Central Ave., Miamisburg, Ohio—C
 Dressen-Barnes Corp., 250 N. Vinedo Ave., Pasadena 8, Calif.—G,H
 DUMONT LABS., INC., ALLEN B. TV TRANSMITTER DEPT., MOBILE COMM. DEPT., 1500 Main St., Clifton, N.J.—B,D,G,H
 Eastern Air Devices Inc., 385 Central Ave., Dover, N.H.—A
 Eldico of N.Y., Inc., 70-72 E. 2nd St., Mineola, L.I., N.Y.—E,G,H
 Electronic Heating Corp., 66 Needham St., Newton Highlands 61, Mass.—G
 Electronic Measurements Co., Lewis St., & Maple Ave., Eatontown, N.J.—E,G
 Electrotech Corp., 15601 Arrow Hwy., Azusa, Calif.—G,H
 Erco Radio Laboratories, 637 Stewart Ave., Garden City, N.Y.—E
 Feiler Eng'g. & Mfg. Co., 8026 N. Monticello Ave., Skokie, Ill.—E
 Freed Electronics & Controls Corp., 200 Hudson St., New York 13, N.Y.—B,G,H,Q
 Gates Electric Co., 65 W. Broadway, New York, N.Y.—G,H
 GATES RADIO CO., 123 Hampshire St., Quincy, Ill.—B,C,G
 Gonsel Co., 801 Main St., Burbank, Calif.—G,H
 Hamlyn Electronics Corp., 32 Holman Blvd., Hicksville, N.Y.—B,E,G
 Heath Co., 305 Territorial, Benton Harbor, Mich.—C
 Hufford Machine Works, 2201 Carmelina Ave., Los Angeles 64, Calif.—G,H
 Ideco Div., Dresser-Stacey Co., 875 Michigan Ave., Columbus 8, Ohio
 Industrial Rectifier Co., 161 Washington St., New York 6, N.Y.—G
 Int'l Research Associates, 2221 Warwick Ave., Santa Monica, Calif.—N
 Jobbins Electronic Enterprises, 500 Hamilton Ave., Menlo Park, Calif.—G,H
 JOHNSON CO., E. F., Wasceca, Minn.—C,F,G
 Kepeo Labs., 131-38 Sanford Ave., Flushing 55, N.Y.—G,H
 King's Electronics Co., 40 Marbledale Rd., Tuckahoe, N.Y.—C,D
 Lear, Inc., 11916 W. Pico Blvd., Los Angeles 64, Calif.—F,G,H
 McLean Eng'g. Labs., 260 Nassau St., Princeton, N.J.—A
 Mackay Radio & Telegraph Co., 345 Hudson St., New York 14, N.Y.—E,F,G
 Magnex Corp., 90-28 Van Wyck Expressway, Jamaica 18, N.Y.—G
 MALLORY & CO., P. R., 3029 E. Washington St., Indianapolis 6, Ind.—G
 Marconi's Wireless Telegraph Co., 23 Beaver St., New York 4, N.Y.—D
 Marine View Electronics, 744 E. 138 St., New York 54, N.Y.—G
 Mattson-Cowley, 1487 Lincoln Ave., Pasadena 3, Calif.—E,G
 Mercury Mfg. Corp., Main Office, 45 Brown St., Buffalo 11, N.Y.—E
 Mission-Western Engineer, 132 W. Colorado St., Pasadena, Calif.—A
 Munston Mfg. & Service, Beech St., Islip, New York—G,H
 Neutronic Associates, 87-16 116 St., Richmond Hill, N.Y.—G
 Onan & Sons Inc., University Ave., W.E. at 25, Minneapolis 14, Minn.—H
 Opad-Green Co., 71 Warren St., New York 7, N.Y.—G,H
 Pearce-Simpson, Inc., 3023 Coral Way, Miami 34, Fla.—G
 Peschel Electronics, Inc., 13 Garden St., New Rochelle, N.Y.—G
 Press Wireless Labs., Inc., 25 Prospect Pl., W. Newton 65, Mass.—C,E,G
 RADIO CORP. OF AMERICA, RCA Victor Div., Camden 2, N.J.—B,D,G
 Redmond Co., Owosso, Mich.—A
 Rich Electronics, Inc., 212 N.W. 8 Ave., Miami 36, Fla.—G
 Ripley Co., 1 Factory, Middletown, Conn.—A
 RUST INDUSTRIAL CO., 608 Willow St., Manchester, N.H.—I
 Scantlin Electronics, J. R., 145 W. Hazel St., Los Angeles 24, Calif.—B
 Sierra Electronic Corp., 1050 Brittan Ave., San Carlos, Calif.—C
 Sonar Radio Corp., 3050 W. 21st St., Brooklyn 24, N.Y.—G
 Sorensen & Co., 375 Fairfield Ave., Stamford, Conn.—G
 Sparton Radio Television, 2400 E. Ganson St., Jackson, Mich.—G
 Spera Electronics Labs., 37-10 33 St., Long Island City, N.Y.—G,H

ELECTRONIC INDUSTRIES DIRECTORY

Stanat Tool & Machine Co., 47-28 37 St., Long Island City 1, N.Y.—A
 STANDARD ELECTRONICS CORP., 285 Emmet St., Newark 5, N.J.—B,D,G,H
 Stone City, P.O. Box 351, Bedford, Ind.—C
 Telemarine Communications Co., 3040 W. 21st St., Brooklyn 24, N.Y.—G,H
 Television Products Co., 1147 N. McCadden Pl., Hollywood 38, Calif.—B
 Time-O-Matic Co., 1106 Dahls St., Danville, Ill.—E
 Transformer Technicians, 2608 N. Cicero Ave., Chicago 39, Ill.—G
 Ultradyne Eng'g. Labs. Inc., P. O. Box 8007, Albuquerque, N. Mex.—E
 Ultrasonic Corp., 61 Rogers St., Cambridge 42, Mass.—B
 Union Spring & Mfg. Co., 1057 Summit Ave., Jersey City 7, N.J.—G
 Varo Mfg. Co., 1801 Walnut St., Garland, Tex.—G,H
 Vibroflex Co., 833 B'dway, New York, N.Y.—F

95—TUBES

Tubes, ATR	AD
Tubes, ballast	A
Tubes, battery charger	B
Tubes, cathode-ray	C
Tubes, color TV picture	AE
Tubes, electron multiplier	D
Tubes, gas	E
Tubes, geiger counter	F
Tubes, ignitron	G
Tubes, klystron	H
Tubes, magnetron	I
Tubes, miniature	J
Tubes, noise	K
Tubes, photo	L
Tubes, pirani	M
Tubes, projection	N
Tubes, receiving	O
Tubes, rectifying, industrial	P
Tubes, rectifying, receiving	Q
Tubes, rectifying, transmitting	R
Tubes, scintillation	S
Tubes, special purpose	T
Tubes, subminiature	U
Tubes, switching	AH
Tubes, thyatron	V
Tubes, TR	AF
Tubes, transmitting-receiving	W
Tubes, transducer	AI
Tubes, transmitting	X
Tubes, traveling wave	Y
Tubes, TV camera iconoscopes	Z
Tubes, TV camera image orthicons	AA
Tubes, TV picture	AG
Tubes, voltage regulators	AB
Tubes, X-Ray	AC

Accurate Eng'g. Co., 2005 Blue Island Ave., Chicago 8, Ill.—P
 Aerolux Light Corp., 653 11 Ave., New York 36, N.Y.—E,T,V,AB
 AIRTRON INC., 1103 W. Elizabeth Ave., Linden, N.J.—AD,AF
 American Elite, Inc., 1775 Broadway, New York 19, N.Y.—O
 American Radio Co., 445 Park Ave., New York 22, N.Y.—F,H,I,J,P,Q,R,T,U,Y,AD
 American Vacuum Products Co., 11779 Santa Monica Blvd., W. Los Angeles 25, Calif.—C,T,AG
 Anglo Corp., 2037 W. Division St., Chicago 22, Ill.—T
 AMPEREX ELECTRONIC CORP., 230 Duffy Ave., Hicksville, L.I., N.Y.—B,E,F,G,I,P,R,T,U,V,W,X,AB,AC
 AMPERITE CO., 561 Broadway, New York 12, New York.—A
 Atlantic Electronics Corp., 89 Jefferson St., Passaic, N.J.—AG
 Atomic Instrument Co., 81 Mass. Ave., Cambridge 39, Mass.—F,ST
 Barry Electronics Corp., 136 Liberty St., New York 6, N.Y.—C, D, G, H, I, J, L, O, P, Q, R, T, U, V, X, AB

Bayside Watch Tool Co., 20-02 Utopia Parkway, Whitestone 57, L.I., N.Y.—J
 Beam Instruments Corp., 350 5th Ave., New York 1, N.Y.—C
 BENDIX AVIATION CORP., Red Bank Div., Eatontown, N.J.—E,H,K,O,Q,T,V
 BOMAC LABS., INC., Salem Road, Mass.—AD
 British Electronic Sales Co., 23-03 45th Rd., Long Island City 1, N.Y.—J,U,AB
 BURROUGHS CORP., 1209 Vine St., Philadelphia 7, Pa.—AH
 Calvideo Tube Corp., 5232 W. 104 St., Los Angeles 46, Calif.—AG
 CBS-HYTRON, DIV. COLUMBIA BROADCASTING SYSTEM, 100 Endicott St., Danvers, Mass.—C,J,O,Q,R,T,W,X,AB,AG,AE
 Central Sales & Mfg. Corp., 1 Richmond Place, Denver, N.J.—M,T,X
 Chatham Electronics Corp., 630 W. Mt. Pleasant Ave., Livingston, N.J.—A,E,J,O,P,Q,R,T,V,X,AB
 Chromatic Television Labs., 703 37th Ave., Oakland, Calif.—C
 Claremont Tube Corp., N.Y. Ave. & Main St., Westbury, N.Y.—AG
 Continental Electric Co., 715 Hamilton St., Geneva, Ill.—C,L,Q,V
 Cyclotron Specialties Co., Moraga, Calif.—F
 Detectlab, Inc., 6544 Sheridan Rd., Chicago 26, Ill.—F,S
 Dressen-Barnes Corp., 250 N. Vinedo Ave., Pasadena 8, Calif.—AH
 DuMONT LABS., INC., ALLEN B., 750 Bloomfield Ave., Clifton, N.J.—C, AG
 DUMONT LABS., INC., INSTRUMENT DIV., 760 Bloomfield Ave., Clifton, N.J.—C,I
 ECLIPSE-PIONEER DIV., Bendix Aviation, Teterboro, N.J.—T
 Edgerton, Germeshausen & Grier, 160 Brookline Ave., Boston 15, Mass.—E,T,V
 Egan Lab., 107-56 113 St., Richmond Hill 19, N.Y.—F
 EITEL-McCULLOUGH, INC., 798 San Mateo Ave., San Bruno, Calif.—H,R,S,X,AE,AG
 Electrical Service Co., 1271 Mission St., San Francisco 3, Calif.—I
 Electronic Beam Corp., 923 Old Nepperhan Ave., Yonkers 3, N.Y.—C
 Electronic Products Co., 111 E. 3 St., Mount Vernon, N.Y.—E,F,T
 Electronic Products Co., 4755 Telegraph Rd., Los Angeles 22, Calif.—C,F,R,T
 ELECTRONIC TUBE CORP., 1200 E. Mermaid Lane, Philadelphia 18, Pa.—C,T,Y
 Electron Radar Products, 1041 N. Pulaski Rd., Chicago, Ill.—L,V
 Electrons, Inc., 127 Sussex Ave., Newark 4, N.J.—R,E,P,T,V
 Eureka TV & Tube Corp., 69 5 Ave., Hawthorne, N.J.—AC
 FEDERAL TELEPHONE & RADIO CO., DIV. I.T.&T., 100 Kingsland Rd., Clifton, N.J.—I,P,R,T,V,X
 Freeland Products Co., 700 Dryades St., New Orleans 12, La.—X,AG
 GENERAL ELECTRIC CO., Apparatus Div., 1 River Rd., Schenectady 5, N.Y.—B
 GENERAL ELECTRIC CO., Tube Dept., 1 River Rd., Schenectady 5, N.Y.—A, B, C, D, E, F, G, H, I, J, L, M, N, O, P, Q, R, T, U, V, W, X, Y, AB
 GENERAL ELECTRONICS, Div. Areturus Electronics, Inc., 101 Hazel St., Paterson, N.J.—C, E, O, P, Q, R, T, V, X
 General Vacuum Tube Corp., 45 Elm St., Ardsley, N.Y.—C
 GRAYBAR ELECTRIC CO., 420 Lexington Ave., New York 17, N.Y.—O,P,X
 Hanson-Gorrill-Brian, 1 Continental Hill, Glen Cove, N.Y.—J,T
 Haydu Bros., Box 1226, Plainfield, N.J.—C,O,W,X,AG
 Huggins Laboratories, 711 Hamilton Ave., Menlo Park, Calif.—Y
 Industrial Tubes, Inc., 321 Stevens St., Geneva, Ill.—V
 JFD Mfg. Co., 6101 16 Ave., Brooklyn 4, N.Y.—A
 Kip Electronics Corp., 155 Waverly Pl., New York 14, N.Y.—T,U,V
 Lectro Max, Inc., 15 S. 1st St., Geneva, Ill.—L
 Lewis & Kaufman, Ltd., P.O. Box 337 Los Gatos, Calif.—P,R,T,X
 Liton Industries, 336 N. Foothill Rd., Beverly Hills, Calif.—I
 MACHLETT LABS., INC., 1063 Hope St., Springfield, Conn.—P,R,T,V,X,AC
 Mackay Inc., A. D., 198 Broadway, New York 39, N.Y.—F
 MANUFACTURERS ENG'G & EQUIP. CORP., York & Mill Rds., Hattboro, Pa.—F
 Marconi's Wireless Telegraph Co., 23 Beaver St., New York 4, N.Y.—I, N, O, P, Q, R, V, W, X, AA
 Matchless Electric Co., 1700 Washington Blvd., Chicago 12, Ill.—A
 Menlo Research Lab., P.O. Box 522, Menlo Park, Calif.—E,T
 MICROVAVE ASSOCIATES, 22 Cummington St., Boston 15, Mass.—I,AD,AF
 Multi-Tron Lab., 4624 Washington Blvd., Chicago 44, Ill.—C,D,E,F,H,I,M,N,P,Q,R,S,T,AB, AC, AE, AG
 Naer Corp., 11777 Santa Monica Blvd., W. Los Angeles 26, Calif.—C,AC,AG
 National Electronics, Inc., 628 North St., Geneva, Ill.—E,G,P,V

National Union Radio Corp., Jacksonville Rd., Hatboro, Pa.—C,J,O,Q,R,T,X,AE
 National Video Corp., 4800 W. 47 St., Chicago 82, Ill.—C
 Neon Eng'g Labs., 172 Front St., Marietta, Ohio—E,AC
 Nuclear Development Lab., P.O. Box 7034, Kansas City, Mo.—F
 Nuclear Instrument & Chemical Corp., 223 W. Erie St., Chicago 10, Ill.—F,S
 Nucleonic Co. of America, 497 Union St., Brooklyn 31, N.Y.—F,S
 Orsyd Co., 6602 Walton Ave., Detroit 10, Mich.—C
 Penta Labs, Inc., 216 N. Milpas St., Santa Barbara, Calif.—R,T,V,X,Y
 PHILCO CORPORATION-ACCESSORY DIV., "A" & Allegheny Ave., Philadelphia 34, Pa. C,U,AB,AG
 Phoenix Precision Instr. Co., 3803 N. 5th St., Philadelphia 40, Pa.—L,T
 Pioneer Electronics Corp., 2235 S. Carmelina, W. Los Angeles 64, Calif.—B,T,Q,AG
 Precision Products, 719 7 St., N.W., Washington, D.C.—L
 Radiation Counter Labs., 5122 W. Grove St., Skokie, Ill.—F
 RADIO CORP. OF AMERICA, RCA TUBE Dept., 415 S. 5 St., Harrison, N.J.—C,D,E,F, G, H, I, J, L, M, N, O, P, Q, R, S, T, U, V, X, Z, AA, AB, AE, AG, AI
 Radio Research Labs., 172 Front St., Marietta, Ohio.—AC
 Itauland Corp., 4245 N. Knox Ave., Chicago 41, Ill.—C,E,N,T,V
 RAYTHEON MFG. CO., Receiving Tube Div., 55 Chapel St., Newton 58, Mass.—C,E,F, G, H, I, J, L, O, P, Q, R, T, U, V, W, X, AB, AE, AF, AG
 RAYTHEON MFG. CO., Waltham 54, Mass.—C,E,F,G,H,I,J,O,P,Q,R,T,U,V,W,X, AB, AF, AF,AG
 Rowe Industries, 1702 Wayne St., Toledo 9, Ohio—F
 Sanders Associates, 137 Canal St., Nashua, N.H.—I,T
 Sheldon Electric Co., 68 Coit St., Irvington 11, N.J.—C,O
 SIGNALITE INC., 37-41 Neptune Hwy., Neptune, N.J.—A,E,AB
 Sonotone Corp., Elmsford, N.Y.—O,T,U
 S.O.S. Cinema Supply Corp., 602 W. 52nd St., New York 19, N.Y.—AB
 Sperry Gyroscope Co., Great Neck, N.Y.—H,V, Steiner-Ives, Springfield Rd., Union, N.J.—C, H,I,J,T,V,Z,AA,AC,AG
 Stewart Eng'g Co., P.O. Box 277, Suquel, Calif.—V
 SYLVANIA ELECTRIC Products 1740 Broadway, New York 19, N.Y.—A,C,H,I,J,L,M,O, Q,T,U,V,W,AA,AB,AD,AE,AF,AG
 Taylor Tubes, Inc., 2312 Wabansia Ave., Chicago 47, Ill.—E,P,R,T,V,X
 Tel-O-Tube Corp. of America, 180 Van Riper Ave., E. Paterson, N.J.—C,AE
 Thomas Electronics, Inc., 118 9th St., Passaic, N.J.—C,AE,AG
 Thompson Clock Co., H. C., 88 Federal St., Bristol, Conn.—B,J,L,O,P,Q,R,U
 Tracerlab, Inc., 130 High St., Boston 10, Mass.—F
 Transatron, Inc., 154 Spring St., New York 12, N.Y.—P
 TUNG-SOL ELECTRIC INC., 95 8 Ave., Newark 4, N.J.—A,C,J,L,O,Q,T,U,W,AB,AE,AG
 United Electronics Co., 42 Spring St., Newark 4, N.J.—P,R,T,V,X
 United Specialties Co., 9705 Cottage Grove Ave., Chicago 28, Ill.—C
 Universal X-Ray Products, 1140 N. Western Ave., Chicago 22, Ill.—AC
 Vacuum Tube Products, 506 S. Cleveland St., Oceanside, Calif.—C,E,K,M,P,R,T,V,AG,AH
 Varian Associates, 611 Hansen Way, Palo Alto, Calif.—H,X
 VICTOREEN INSTRUMENT CO., 3800 Perkins Ave., Cleveland 14, Ohio—A,E,F,J,T,U, AB
 Valkirt Co., 145 W. Hazel St., Inglewood 3, Calif.—E
 VAREN PLASTICS CORP., Warren, Pa.—T
 WATERMAN PRODUCTS CO., 2445 Emerald St., Philadelphia 25, Pa.—C
 Western Electronic Enterprises, 3348 W. Compton Blvd., Gardena, Calif.—B,L,V
 Western Radiation Lab., 1107 W. 24 St., Los Angeles 7, Calif.—F
 VESTINGHOUSE ELECTRIC CORP., Electronic Tube Div., Box 254, Elmira, N.Y.—C,G,I,J,L,O,Q,V,AE
 Vestinghouse Electric Corp., Box 868, Pittsburgh 30, Pa.—G,I,J,L,M,O,P,Q,R,T,V,W,X,AC, AE,AG
 Wood Counter Lab., N., 5491 Blackstone Ave., Chicago 15, Ill.—F,S

96—TUBE PARTS

Adapters A
 Anodes, graphite B
 Anodes, metal C
 Bases D
 Base pins E
 Bulbs F

Caps G
 Cathode ray, deflection plates H
 Cathode ray, electrodes I
 Cathode ray, electron guns J
 Cathode ray, phosphors K
 Cathode ray, side contacts L
 Cathode ray, sleeves M
 Cathodes N
 Cavities O
 Ceramic parts AH
 Faceplates, CRT AI
 Fluorescent materials P
 Focusing magnets AE
 Fused quartz parts Q
 Getters R
 Grids S
 Heat dissipators AF
 Ion Traps T
 Meters U
 Mica parts V
 Picture tube masks W
 Picture tube rejuvenators AG
 Rare gases X
 Stamped parts Y
 Supports Z
 Tube repairing AA
 Tube seal leads AB
 Water jackets AC
 Wire parts AD

Adel Div., General Metals Corp., 10777 Van Owen St., Burbank, Calif.—Y,Z
 Allied Research & Eng'g. Inc., 1041 N. Las Palmas Ave., Hollywood 88, Calif.—C
 American Brass Co., 414 Meadow St., Waterbury 20, Conn.—C,E
 American Laubscher Corp., 333 W. 52 St., New York 19, N.Y.—E
 AMERICAN LAVA CORP., Cherokee Blvd. & Mrs. Rd., Chattanooga 5, Tenn.—D
 American Mica Insulation Co., Manasquan, N.J.—V,Y
 AMERICAN PHENOLIC CORP., 1830 S. 54th Ave., Chicago 50, Ill.—A
 American Wood Working Co., 1682 N. Lowell Ave., Chicago 39, Ill.
 Anchor Industrial Co., 36-36 36 St., Long Island City 6, N.Y.—M,Z
 ART WIRE & STAMPING CO., 227 High St., Newark 2, N.J.—C,E,I,L,M,N,R,S,Y,Z,AB,AD
 Associated Eng'g & Mfg. Corp., Glen Ridge, N.J.—D,P
 Auburn Mfg. Co., Stack St., Middletown, Conn.—V,Y
 Authorized Mfrs. Service, 919 Wyckoff Ave., Brooklyn 27, N.Y.—U
 Bram Chemical Co., 820 65 St., Philadelphia 26, Pa.—C,K,P,R,X,AD
 British Electronic Sales Co., 23-03 45th Rd., Long Island City 1, N.Y.—D,E
 Brunswick Div., Radio & TV, Inc., 119 W. 57 St., New York 19, N.Y.—M,N
 Cardwell Electronics Productions, Allen D., Plainville, Conn.—S
 Celomat Corp., 521 W. 23 St., New York, N.Y.—W
 CENTRALAB DIV., GLOBE-UNION, INC., 900 E. Keefe Ave., Milwaukee 1, Wisc.—D
 Ceramic Heater Cathode Resistor Co., 20 1 St., Keyport, N.J.—N
 Colorvision Plastics, Inc., 247 Atlantic Ave., Boston 10, Mass.—W
 Communication Measurements Lab., Inc., 350 Leland Ave., Plainfield, N.J.—A
 Continental-Diamond Fibre Co., Newark, Del.—V
 CORNING GLASS WORKS, P.O. Box 544, Corning, N.Y.—F
 Driver Co., Wilbur B., 150 Riverside Ave., Newark 4, N.J.—C,AD
 DuPont de Nemours & Co., E. I., Polychemicals Dept., Wilmington 98, Del.—K
 ELCO CORP., 190 W. Glenwood Ave., Philadelphia 19, Pa.—A,D
 Electronic Mechanics, Inc., 101 Clifton Blvd., Clifton, N.J.—D
 Electronic Parts Mfg. Co., 508 25 St., Union City, N.J.—I,N,R,S,AB,AD
 ERCA Tool Die & Stamping Co., 19 Ash St., Brooklyn 22, N.Y.—D,J,S,V,Y
 Fansteel Metallurgical Corp., 2200 Sheridan Rd., N. Chicago, Ill.—C,N,Y
 FEDERAL TELEPHONE & RADIO CO. DIV. I.T.&T., 100 Kingsland Rd., Clifton, N.J.—C,AC
 General Electrosonics, Inc., 32 W. 22 St., New York 10, N.Y.—A
 Haydu Bros., Box 1226, Plainfield, N.J.—J,S,X, Y
 HEPPNER MFG. CO., 60 E. 42 St., New York 17, N.Y.—T,AE
 Hermetite Corp., 702 Beacon St., Boston 15, Mass.—D
 Induction Heating Corp., 181 Wythe Ave., Brooklyn 11, N.Y.—AC
 Ippolito & Co., James, 401 Concord Ave., Bronx 54, N.Y.—Z
 Isolantite Mfg. Corp., Warren Ave., Stirling, N.J.—D,Z,AH

Insulating Fabricators of N.E., 69 Grove St., Carle Place, L.I., N.Y.—Y
 JAN Hardware Mfg. Co., 75 N. 11th St., Brooklyn 11, N.Y.—Z
 Javer, Box 646, Redlands, Calif.—E
 JFD Mfg. Co., 6101 16th Ave., Brooklyn 4, N.Y.—A,E,Q,W
 Johnson Eng'g Inc., 97 Summit Ave., Summit, N.J.—E
 Johnson & Hoffman, 31 E 2 St., Mineola, L.I., N.Y.—C,H,J,M,S,T,Y
 KAHLE ENG'G CO., 1313 7 St., N. Bergen, N.J.—Y,Z
 Kemet Co., P. O. Box 6087, Cleveland 1, Ohio—R
 Keystone Watch Case Div., Riverside Metal Co., 1 Pavilion Ave., Riverside, N.J.—Y
 Kimble Glass Co., P.O. Box 1035, Toledo 1, Ohio—F
 King Labs, Inc., 127 Solar St., Syracuse 4, N.Y.—R,Y,AD
 Kirchberger & Co., M., 1425 37 St., Brooklyn 18, N.Y.—D,G
 Kulite Tungsten Co., 723 Sip St., Union City, N.J.—I,N,S,AD
 Lancaster Lens Co., 220 W. Main St., Lancaster, Ohio—F
 Lapp Insulator Co., LeRoy, N.Y.—Z
 Lewis & Kaufman, Ltd., P.O. Box 337, Los Gatos, Calif.—C,S
 Linde Air Products Co., Div. Union Carbon & Carbide, 30 E. 42 St., New York 17, N.Y.—X
 Long Inc., Thomas J., 215 Stonehinge Lane, Carle Place, L.I., N.Y.—Y
 Machlett Labs., Inc., 1063 Hope St., Springfield, Conn.—Z,AC
 Mackay, Inc., A.D., 198 Broadway, New York 38, N.Y.—K,P,R,X
 Mackenzie Products Co., 141 Brewery St., New Haven, Conn.—O
 Malco Tool & Mfg. Co., 4025 W. Lake St., Chicago 24, Ill.—Y
 Metal Hydrides, Inc., Congress St., Beverly, Mass.—R
 Metal Textile Corp., 647 E. 1st Ave., Roselle, N.J.—S,AD
 Mica Fabricating Co., 53 Central Ave., Rochelle Park, N.J.—V
 Mica Insulator Co., 797 Broadway, Schenectady, N.Y.—V,Z
 Minerals & Insulation Co., 65 Central Ave., Rochelle Park, N.J.—V
 Moldink Corp. of America, 40 Church St., Pawtucket, R.I.
 Multi-Tron Lab., 4624 Washington Blvd., Chicago 44, Ill.—C,H,I,J,Y,AA
 Neon Eng'g Labs., Radio Research Div., 172 Front St., Marietta, Ohio—X,Z
 Newark Radio Labs., Bridge Rd., Eastham 3, Mass.—H,I,J,N,P,AD
 Norco Mfg. Co., 392 Bleecker St., New York 14, N.Y.—K,P
 North American Philips Co., Inc., Elmet Div., Lisbon Rd., Lewiston, Me.—K,P,R,X
 Owens-Illinois Glass Co., Madison & St. Clair Sts., Toledo 1, Ohio—D
 Pennsylvania Optical Co., 254 S. 8th St., Reading, Pa.—AI
 Pix Mfg. Co., 5 Oliver St., Newark 2, N.J.—C,I,L,T,Y,AB,AD
 Pomona Electronics Co., 524 W. 5th Ave., Pomona, Calif.—A
 Precision Plastic Products, 225 N. Racine Ave., Chicago 7, Ill.—W
 "Q" Glass Co., 470 Broad St., Bloomfield, N.J.—AA
 Radiation Counter Labs, Inc., 5122 W. Grove St., Skokie, Ill.—Q
 RADIO CORP. OF AMERICA, RCA Tube Dept., 415 S. 5 St., Harrison, N.J.—A,B,C, D, E, G, H, I, J, K, L, M, N, O, P, R, S, T, V, Y, Z, AC, AD, AE, AF
 SAMPSON CHEMICAL & PIGMENT CORP., 2830 W. Lake St., Chicago 12, Ill.—K,P
 Saxonyburg Ceramics, Saxonyburg, Pa.—AH
 Sonotone Corp., Elmsford, N.Y.—J
 Spaulding Fibre Co., 310 Wheeler St., Tonawanda, N.Y.—Y
 Spruce Pine Mica Co., P.O. Box 456, Spruce Pine, N.C.—V
 Standard Metals Corp., 262 Broad St., North Attleboro, Mass.—C,N
 Staver Co., 41-61 N. Saxon Ave., Bay Shore, L.I., N.Y.—C,S,Y,Z
 Stone City, P.O. Box 351, Bedford, Ind.—D,E,R,Y,AD
 Superior Eng'g., 2500 Germantown Ave., Norristown, Pa.—C,M,N
 Superior Tube Co., Box 191, Norristown, Pa.—C,M,N
 Swiss Jewel Co., Lafayette Bldg., Philadelphia 6, Pa.—E
 SYLVANIA ELECTRIC PRODUCTS, 1740 Broadway, New York 19, N.Y.—A,C,D,E,G, H, I, J, K, M, N, O, P, R, S, T, V, Y, AB, AD
 Syncor Products Co., 26 Irving Court, Malden 48, Mass.—Q
 Taylor Fibre Co., Norristown, Pa.—D
 Tele Plastics Co., 202 Broadway, Brooklyn 11, N.Y.—W
 Tensitron, Inc., Pin Hill, Harvard, Mass.—O
 Thomas Electronics, Inc., 118 9 St., Passaic, N. J.—J
 THOR CERAMICS, INC., 225 Belleville Ave., Bloomfield, N. J.—D
 TINNERMAN PRODUCTS, INC., P.O. Box 6685, Dept. 16, Cleveland 1, Ohio—Y

Tricon Mfg. Co., 8008 Wallace St., Chicago 20, Ill.—L
 Ultra-Violet Products, 145 Pasadena Ave., S. Pasadena, Calif.—P.Q
 United-Carr Fastener Corp., 31 Ames St., Cambridge 42, Mass.—F
 United Electronics Co., 42 Spring St., Newark 4, N.J.—J
 U.S. Gasket Co., 602 N. 10 St., Camden 1, N.J.—D
 U.S. Radium Corp., 535 Pearl St., New York 7, N.Y.—K
 Vacuum Metals Corp., Sub. of National Research Corp., 70 Memorial Drive, Cambridge 42, Mass.—R
 Vacuum Tube Products, 506 S. Cleveland St., Oceanside, Calif.—AA
 Varian Associates, 611 Hansen Way, Palo Alto, Calif.—S
VECTRON, INC., 400 Main St., Waltham 54, Mass.—O
 Volkert Metal Stampings, Inc., John, 223-34 96th Ave., Queens Village 29, N.Y.—C,G,H, L,S,T,V,W,Y,Z,AD
 Western Gold & Platinum Works, 589 Bryant St., San Francisco 7, Calif.—AH
 Whitehead Stamping Co., 1661 W. Lafayette Blvd., Detroit 16, Mich.—Y
 Woodhill Industries, 7569 E. McNichols Rd., Detroit 34, Mich.—W



Espey Mfg. Co., 528 E. 72 St., New York 21, N.Y.—B
 Feiler Eng'g & Mfg. Co., 8026 N. Monticello Ave., Skokie, Ill.—G
 Fisher Radio Corp., 21-21 44th Drive, Long Island City 1, N.Y.—A,B,C
 Forbes & Wagner, 339 Central Ave., Silver Creek, N.Y.—F
 F-R Machine Works, 44-14 Astoria Blvd., Long Island City 3, N.Y.—D,E
 Freed Electronics & Controls Corp., 200 Hudson St., New York 13, N.Y.—A,B,C,D,E,G,H
 Garrod Radio Co., 70 Washington St., Brooklyn 1, N.Y.—A,B
GENERAL ELECTRIC CO., Radio-TV Dept., Electronics Park, Syracuse, N.Y.—H
 General Instrument Corp., 829 Newark Ave., Elizabeth 2, N.J.—G,H
GENERAL PRECISION LAB. INC., 63 Bedford Rd., Pleasantville, N.Y.—G
 Gonset Co., 801 S. Main St., Burbank, Calif.—A,C
 Granco Products Inc., 35-17 20 Ave., Long Island City 5, N.Y.—H
GRAYBAR ELECTRIC CO., 420 Lexington Ave., New York 17, N.Y.—R
 Gries Reproducer Corp., 780 E. 133 St., New York 54, N.Y.
 G. W. Associates, Box 2263, El Segundo, Cal.—D,E
 Grigsby-Allison Co., 407 N. Salem Ave., Arlington Heights, Ill.—A,B,G,H
 Heath Co., 305 Territorial, Benton Harbor, Mich.—A,B
IDEA, Inc., Regency Div., 7900 Pendleton Pike, Indianapolis 26, Ind.—B,G
 I-T-E Circuit Breaker Co., Resistor Div., 1924 Hamilton St., Philadelphia 39, Pa.—F
 Johnson Labs., Div., Aladdin Industries, Willard Rd., Norwalk, Conn.—G,H
 King Electronics Co., 40 Marbledale Rd., Tuckahoe, N.Y.—E
 Kings Microwave Co., 719 Main St., New Rochelle, N.Y.—E
 Kingston Products Corp., 1412 N. Webster St., Kokomo, Ind.—A,E,G,H
 Korb Eng'g & Mfg. Co., 30 Ottawa Ave., Grandville, Mich.—E
 Lab. for Electronics, Inc., 75 Pitts St., Boston, Mass.—E
 Lavoie Labs. Inc., Morranville, N.J.
 Leonard Electric Products Co., 67 34 St., Brooklyn 32, N.Y.—A,G,H
 Lerner Instrument & Electronics, GPO Box 620, Brooklyn 1, N.Y.
 Lytle Engineering & Mfg. Co., 105 W. Monroe St., Chicago 3, Ill.—B,C,G
 McLaughlin, J. Box 529, La Jolla, Calif.—A
MALLORY & CO., P. R., 3029 E. Washington St., Indianapolis 6, Ind.—B,C,G,H
 Marine View Electronics, 744 E. 138 St., New York 54, N.Y.—A,B,C
 Microlab, Inc., 71 Okner Pkwy, Livingston, N.J.—D,E,H
 Microwave Associates, 22 Cummington St., Boston 15, Mass.—E
 Miller Co., J. W., 5917 S. Main St., Los Angeles 3, Calif.—A
 Nassau Research & Devel. Associates, 66 Main St., Mineola, N.Y.—E
 Newcomb Audio Products Co., 6824 Lexington Ave., Hollywood 38, Calif.—B
 Oak Mfg. Co., 1260 Clybourn Ave., Chicago 10, Ill.—G, H
 Parts Producing Corp., Manhattan Div., 1861 2 Ave., New York 28, N.Y.—E
 Pentron Corp., 221 E. Cullerton St., Chicago 16, Ill.—A,B
PHOTOCIRCUITS CORP., New St., Glen Cove, N.Y.—E,F
 Pilot Radio Corp., 37-06 36 St., Long Island City 1, N.Y.—B,C
POLARAD ELECTRONICS CORP., 100 Metropolitan Ave., Brooklyn 11, N.Y.—D,E
 Portchester Instrument Co., 114 Wilkins Ave., Portchester, N.Y.—E
 Precision Electronics, 7518 Melrose Ave., Los Angeles 46, Calif.—A,B,C
 QLC Corp., 10 Aubrey St., Summit, N.J.—F
 Radio Condenser Co., Davis & Copewood Sts., Camden 3, N.J.—A,B,C,E,G,H
RADIO CORP. OF AMERICA, ENG'G PRODUCTS DIV., Camden, N.J.—A,B,C,E,G,H
 Radio Craftsman Inc., 4401 N. Ravenswood Ave., Chicago 40, Ill.—H,C
RADIO ENG'G LABS., INC., 36-40 37 St., Long Island City 1, N.Y.—C
 Radio Industries, Inc., 5225 N. Ravenswood Ave., Chicago 40, Ill.—A,C,F
RADIO RECEPTOR CO., 251 W. 19th St., New York 11, N.Y.—H
 Radio & TV Inc., Brunswick Div., 119 W. 57 St., New York 19, N.Y.—B,C,G,H
 Rex Electronics Corp., 1351 E. De Los St., Indianapolis, Ind.—B,C,G,H
 Sargent-Rayment Co., 1401 Middle Harbor Rd., Oakland 20, Calif.—A,B,C

Schutter Mfg. Co., Carl W., 80 E. Montauk Highway, Lindenhurst, N.Y.—E
 Selector Industries, Inc., 3100 Ocean Parkway, Brooklyn 35, N.Y.—E
 Sickles Div., F. W., General Instrument Corp., P.O. Box 330, Chicopee, Mass.—F,G,H
 Silver Bay Equip Co., 5004 23rd NW, Seattle 7, Wash.—F
 Standard Coil Products Co., 2029 N. Pulaski Rd., Chicago 39, Ill.—A,B,F,G,H
 Stromberg-Carlson Co., Rochester 3, N.Y.—B,G
TARZIAN, INC., SARKES, 539 S. Walnut St., Bloomington, Ind.—G,H
 Technicraft Labs., Thomaston-Waterbury Rd., Thomaston, Conn.—E
 Tele-Matic Industries Inc., 1 Jorammon St., Brooklyn 1, N.Y.—H
 Tensitron, Inc., Pin Hill, Harvard, Mass.—E
 Thompson Products Inc., 2196 Clarkwood Rd., Cleveland 3, Ohio—H
 Universal Microwave Corp., 380 Hillside Ave., Hillside, N.J.—D,E
VECTRON, INC., 400 Main St., Waltham 54, Mass.—D,E
VICTOREEN INSTRUMENT CO., 3800 Perkins Ave., Cleveland 12, Ohio—G
 Voron & Co. George, 835 N. 19th St., Philadelphia 30, Pa.—A
 Weston Labs., Inc., Old Littleton Rd., Harvard, Mass.—K,D,E
 Weymouth Instrument Co., 1440 Commercial St., E. Weymouth 89, Mass.—E

97—TUNERS

- Tuners, AM A
- Tuners, AM-FM B
- Tuners, FM C
- Tuners, Klystron D
- Tuners, Microwave E
- Tuners, Permeability F
- Tuners, Television G
- Tuners, UHF H

Airtronic Devel. Corp., 20 W 22 St., New York 10, N.Y.—A
AIRTRON INC., 1103 W. Elizabeth Ave., Linden, N.J.—E
 Aladdin Radio Industries, 703 Murfreesboro Rd., Nashville, Tenn.—A,F
 Alco Electronics Mfg. Co., 9 Wolcott Ave., Lawrence, Mass.—C
 All Star Products Co., Defiance, Ohio—A,B,C
ALTEC LANSING CORP., 9356 Santa Monica Blvd., Beverly Hills, Calif.—B
 Anchor Radio Corp., 2215 S. St. Louis Ave., Chicago 23, Ill.—G,H
 Approved Electronic Instrument Corp., 928 Broadway, New York 10, N.Y.—A,B,C
 A.R.F. Products, Inc., 7627 Lake St., River Forest, Ill.—E
 Astatic Corp., P.O. Box 120, Conneaut, Ohio—H
 Atlas Metal Stamping Co., Castor & Kensington Aves., Philadelphia 24, Pa.—C,E,H
 Automatic Mfg. Corp., 65 Gouverneur St., Newark 4, N.J.—G,H
 Bell Sound Systems, 555 Marion Rd., Columbus 7, Ohio—B
 Blonder-Tongue Labs., Inc., 526 North Ave., Westfield, N.J.—H
BOGART MFG. CORP., 315 Seigel St., Brooklyn 6, N.Y.—E
 Bone Eng'g Corp., 701 W. Broadway, Glendale 4, Calif.—E
 Browne Electronics, 12450 W. Washington Blvd., Venice, Calif.—A,B
 Browning Labs., Inc., 750 Main St., Winchester, Mass.—B,C
 Budd-Stanley Co., 43-01 22nd St., Long Island City 1, N.Y.—E
 Calbest Eng'g & Electronics Co., 828 N. Highland Ave., Hollywood 38, Calif.—A,B,C,H
 Carad Corp., 93 Ieland Ave., San Francisco 28, Calif.—F
 Century Electronics, 14844 Oxnard St., Van Nuys, Calif.—E
 C.G.S. Labs., 391 Ludlow, Stamford, Conn.—A,B,F
 Coronet Radio & TV Corp., 1451 E. 27 St., Brooklyn 10, N.Y.—H
 Crown Eng'g, 3821 Commercial N.E., Albuquerque, N.M.—H
 Cubic Corp., 2841 Canon St., San Diego 6, Calif.—D,E
 Delco Radio Div., General Motors Corp., Kokomo, Ind.—A,F
 DeMornay-Bonardi, Inc., 780 S. Arroyo Pkwy, Pasadena, Calif.—D,E
 DeWald Radio & TV Corp., 35-15 37th Ave., Long Island City 1, N.Y.—A,B,C,G,H
 Douglas Microwave Co., 11 Beechwood Ave., New Rochelle, N.Y.—E
DUMONT LABS., INC., ALLEN B., 750 Bloomfield Ave., Clifton, N.J.—H
DX RADIO PRODUCTS, 2300 W. Armitage Ave., Chicago 47, Ill.—G,H
EITEL MC-CULLOUGH, INC., 798 San Mateo Ave., San Bruno, Calif.—D
 Electro Assemblies, Inc., 2935 W. Belmont Ave., Chicago 18, Ill.—A,F
ELECTRO-VOICE, INC., Cecil & Carroll Sts., Buchanan, Mich.—H
 Engineering Associates, 434 Patterson Rd., Dayton 9, Ohio—E

98—TUNING PARTS

- Gear units A
- Mechanical selectors B
- Motor operated units C
- Remote control D
- Trimmer capacitors E
- Trimmer inductances F

AEROVOX CORP., 740 Belleville Ave., New Bedford, Mass.—E
 Allied Int'l Inc., 230 Park Ave., New York 17, N.Y.—D
 All Star Products, Inc., Defiance, Ohio—E
 Anchor Electronics Inc., 717 Sip St., Union City, N.J.—F
 Atlas Metal Stamping Co., Castor & Kensington Aves., Philadelphia 24, Pa.—A,B,C
 Audio Products Corp., 2265 Westwood Blvd., Los Angeles 64, Calif.—D
 Bayside Watch Tool Co., 20-02 Utopia Parkway, Whitestone 57, N.Y.C.—A,B
 Bead Chain Mfg. Co., 88 Mountain Grove St., Bridgeport 5, Conn.—A
 Bowmar Instrument Corp., Smith Municipal Airport, Fort Wayne, Ind.—A,C
 Calbest Eng'g & Electronics Co., 828 N. Highland Ave., Hollywood 38, Calif.—D
 Cambridge Thermionic Corp., 445 Concord Ave., Cambridge 38, Mass.—E,F
CENTRALAB DIV., Globe-Union, Inc., 900 E. Keefe Ave., Milwaukee 1, Wisc.—E
 CGS Laboratories, Inc., 391 Ludlow St., Stamford, Conn.—D
 Coilcraft, Inc., Jandus Rd., Gary, Ill.—F
 DeltaRadio Co., 115 Worth St., New York 13, N.Y.—F
 Dietz Design & Mfg. Co., Grandview, Mo.—F
 Electrical Communications, 765 Clementina St., San Francisco 3, Calif.—B,D
 Electro Assemblies, Inc., 2935 W. Belmont Ave., Chicago 18, Ill.—F
 Elm Laboratories, 18 S. Broadway, Dobbs Ferry, N.Y.—A
 Erie Resistor, 644 W. 12 St., Erie 6, Pa.—E
 Forbes & Wagner Inc., 339 Central Ave., Silver Creek, N.Y.—C
 General Instrument Corp., 829 Newark Ave., Elizabeth 2, N.J.—E
 Globe Industries, Inc., 1784 Stanley Ave., Dayton 4, Ohio—C
 Gries Reproducer Corp., 5-2nd St., New Rochelle, N.Y.—A
 HI-Q Div., Aerovox Corp., Olean, N.Y.—E
 JFD Mfg. Co., 6101 16th Ave., Brooklyn 9, N.Y.—E
 Johanson Mfg. Corp., Rockaway Valley Rd., Boonton, N.J.—E
 Lavoie Labs., Inc., Morganville, N.J.—B,C,I
 Lindly & Co., 248 Herricks Rd., Mineola, L.I., N.Y.—A,H
MALLORY & CO., P. R., 3029 E. Washington St., Indianapolis 6, Ind.—E
 Metron Instrument Co., 432 Lincoln St., Denver, Colo.—A
 Mission-Western Engineers, Inc., 132 W. Colo., St. Pasadena 1, Calif.—A,B,C,D
 Mitronics, Inc., 232 13th Ave., Newark, N.J.—E
 North Hills Electric Co., 246-32 54th Ave., Douglaston, Queens, 62, N.Y.—F
 Pacific Mercury TV Mfg. Corp., 5955 Van Nuys Blvd., Van Nuys, Calif.—D
 Petroff, Peter A., 127 Water St., New York 11, N.Y.—A,D
POLARAD ELECTRONICS CORP., 100 Metropolitan Ave., Brooklyn 11, N.Y.—A
 Radio Condenser Corp., Copewood & Davis Sts., Camden, N.J.—A,E
 Radio Industries, Inc., 5225 N. Ravenswood Ave., Chicago 25, Ill.—E,F
 Research Development Mfrs. Inc., 429 E. Colton St., Philadelphia 44, Pa.—A

Research Instrument Co., 233 Broadway, New York 7, N.Y.—A,C
 Rich Electronics, Inc., 212 N. W. 8 Ave., Miami 36, Fla.—D
 Roesch Co., D. J., 2200 S. Figueroa St., Los Angeles 7, Calif.—D
 Ruckelshaus Labs., Inc., John G., 110 Pomeroy Rd., Madison, N.J.—D
 Ryan Industries, Inc., 19159 John R. St., Detroit 3, Mich.—D
 Schaefer Custom Eng'g., 2279 Allessandro St., Los Angeles 39, Calif.—D
 Sickles, F. W. Div., General Instrument Corp., P.O. Box 330, Chicopee, Mass.—E,F
 Silver Bay Equip. Co., 5004 20th N.W., Seattle 7, Wash.—F
 Square Root Mfg. Corp., 391 Saw Mill River Rd., Yonkers 2, N.Y.—F
 Standard Coil Products Co., 2329 N. Pulaski Rd., Chicago 39, Ill.—B,E,F
 STUPAKOFF CERAMIC & MFG CO., Latrobe, Pa.—E
 Tarzian Inc., Sarkes, E. Hillside Dr., Bloomington, Ind.—E
 Television Remote Control Co., 820 N. Fairfax Ave., Los Angeles 46, Calif.—D
 T.J. Mfg. Corp., 1020 S. Josephine St., Martinsville, Ind.—F
 U. S. ELECTRONICS CORP., 275 Warren St., Lyndhurst, N.J.—F
 VECTRON, INC., 400 Main St., Waltham 54, Mass.—A,C
 WHITE CO., S. S., 10 E. 40th St., New York 16, N.Y.—D

AIRTRON INC., 1103 W. Elizabeth Ave., Linden, N.J. AF,AM,AQ
 All Channel Antenna Corp., 70-07 Queens Blvd., Woodside 77, N.Y.—A,R
 Allegheny Ludlum Steel Corp., 2020 Oliver Bldg., Pittsburgh 22, Pa.—AA,AJ
 Allied Allegri Machine Co., 141 River Rd., Nutley 10, N.J.—C,L
 Allied Electronic Equip. Co., 425 Brannan St., San Francisco 7, Calif.—C,L
 Allied Research & Eng'g. Inc., 1041 N. Las Palmas Ave., Hollywood 38, Calif.—AN,AQ
 Alloy Metal Wire Co., 13 & Penna. Ave., Prospect Park, Pa.—AC, AG
 ALPHA WIRE CO., 430 Broadway, New York 13, N.Y.—A,B,C,D,E,F,G,H,I,J,K,L,Q,R,S,T,U,V,X,Y,AD,AE,AH,AO,AP,AT
 Aluminum Mfg. Co., 1629 Portland Ave., Louisville 3, Ky.—N
 American Brass Corp., 414 Meadow St., Waterbury 20, Conn.—Q
 American Electric Cable Co., 181 Appleton St., Holyoke, Mass.—F,H,I,K,L,M,R,U,W,Y,AE,AG,AH
 American Machine & Foundry Co., 1085 Commonwealth Ave., Boston 15, Mass.—C
 American Mercantile Co., 33 W. 42nd St., New York 36, N.Y.—Q,R,S,U,Z,AA,AL
 AMERICAN PHENOLIC CORP., 1830 S. 54 Ave., Chicago 50, Ill.—A,B,C,D,F,G,H,J,K,X,AO
 Amplifier Corp. of America, 398 Broadway, New York 13, N.Y.—AB
 Anaconda Wire & Cable Co., 25 Broadway, New York, N.Y.—A,B,D,F,H,I,K,M,N,O,Q,R,S,U,X,Y,AA,AE,AG,AH,AO
 ANDREW CORP., 363 E 75 St., Chicago 19, Ill.—A,B,D,K,AN,AO,AQ
 Ansonia Wire & Cable Co., 63 Main St., Ansonia, Conn.—D,F,G,J,X
 Antenna Specialists Co., 12435 Euclid Ave., Cleveland 6, Ohio—C
 Arey Machine Co., 38 Long Ave., Hillside 5, N.J.—L,M,AP
 Argyle Electronics Co., 8 W. 18 St., New York 11, N.Y.—A
 Associated Eng'g & Mfg. Corp., Glen Ridge, N.J.—AC,AL
 Atlantic Wire & Cable Corp., 119-14 14th Road, College Point 56, N.Y.—A,B,D,F,G,H,K,L,AE,AH,AO,AP
 ATLAS RESISTOR CO., 24 E. Coulter St., Philadelphia 44, Pa.—C
 Barlow Electrical Mfg. Co., 155 E. 128th St., New York 35, N.Y.—C,D,AN
 Baughman Co., E.J., 350 S. Central, Los Angeles 13, Calif.—A,D
 Beam Instruments Corp., 350 5th Ave., New York 1, N.Y.—D,F,G,H,I,J,K,O,R,X,AE,AH
 Belden Mfg. Co., 4647 W. Van Buren St., Chicago 44, Ill.—D,G,L,O,R,S,X,Y,AA,AD,AE,AG,AH,AO,AP
 Bishop & Co., J., King St., Malvern, Pa.—AF
 Blair Co. J.P., 89 Union St., Mineola, N.Y.—AN,AQ
 Bliss Electronic Corp., Box 23, Sussex, N.J.—C,W
 B & M Elec. Co., 838 4th Ave., Brooklyn 32, N.Y.—F,N,R,W,Y,AE
 Bogen Co., David, 29 9th St., New York 14, N.Y.—AO
 BOMAC LABS. INC., Salem Rd., Beverly, Mass.—AU
 Bone Eng'g Corp., 701 W. Broadway, Glendale 4, Calif.—AN,AQ
 Boston Insulated Wire & Cable Co., 65 Bay St., Dorchester 25, Mass.—D,G,H,I,J,K,O,R,U,X,Y,AE,AH
 Bram Chemical Co., 820 45th Ave., Philadelphia 26, Pa.—R,AC,AD,AF,AL,AK,AL
 BRAND & CO., WM., North & Valley Sts., Willimantic, Conn.—R,W,Y,AE,AH
 Bridgeport Brass Co., 30 Grand St., Bridgeport 2, Conn.—Q
 Buchen Co., R. J., P.O. Box 9, Bricelyn, Minn.—AO
 Budd-Stanley Co., 43-01 22nd St., Long Island City 1, N.Y.—B,C,D,AN,AP,AQ
 BURROUGHS CORP., Electronic Instruments DIV., 1209 Vine St., Philadelphia 7, Pa.—C,D
 Cadre Industries Corp., 19 Delaware Ave., Endicott, N.Y.—X,W
 Campbell X-Ray Corp., 110 Cummington St., Boston 15, Mass.—X
 Carol Cable Co., 190 Middle St., Pawtucket, R.I.—D,G,AO
 Carpenter Steel Co., 101 W. Bern St., Reading, Pa.—AJ
 CBC Electronics Co., 1310 Callowhill St., Philadelphia 23, Pa.—G
 Century Lighting Inc., 521 W. 43rd St., New York 25, N.Y.—F
 Chase Brass & Copper Co., 236 Grand St., Waterbury 20, Conn.—F,Q,R,U,X,AA,AD,AR
 CHESTER CABLE CORP., 1000 Hill St., Chester, N.Y.—A,D,E,F,G,H,I,J,K,L,O,Q,R,U,X,Y,Z,AE,AG,AH,AL,AP,AQ
 Chester-Morton Electronics Corp., 10 St. and Morton Ave., Chester, Pa.—C,L,W,AP
 COAXIAL CONNECTOR CO., 35 N. 2 Ave., Mount Vernon, N.Y.—C,AM
 Cohn Corp., Sigmund, 121 S. Columbus Ave., Mount Vernon, N.Y.—N,AF,AI
 Coleman & Sons, D., 4515 W. Addison St., Chicago 41, Ill.—A,B,C,E,F,G,H,K,L,O,Q,R,S,U,W,X,Y,Z,AA,AH

Color Television Inc., 973 E. San Carlos Ave., San Carlos, Calif.—C, AU
 Columbia Technical Corp., 5 E. 57 St., New York 22, N.Y.—D
 Columbia Wire & Supply, 2850 Irving Park Rd., Chicago, Ill.—A,B,C,D,E,F,G,H,I,K,L,M,N,O,Q,R,S,U,V,W,X,Y,AA,AE,AG,AH,AJ,AP,AT
 Conn-Cord, Inc., Progress Ave. & Monroe St., Union, N.J.—C,W
 Consolidated Wire & Associated Co.'s., 1635 S. Clinton St., Chicago 16, Ill.—A,B,D,E,F,G,H,I,J,K,L,M,O,Q,R,S,U,W,X,Y,Z,AA,AD,AE,AG,AH,AP,AT
 Co-operative Industries, Inc., 100 Oakdale Rd., Chester, N.J.—H,A,H,AM,AN,AU
 Copperweld Steel Co., Glassport, Pa.—A,B,Q,R,V,Y
 CORNISH WIRE CO., 50 Church St., New York 7, N.Y.—A,C,F,G,H,L,O,R,U,W,Y,AE,AH,AO,AP
 Dalmo Victor Co., 1414 ElCamino Real, San Carlos, Calif.—AN
 Danbury-Knudson, 15 Thorpe St., Danbury, Conn.—AN
 Decatur Electronic Industries Corp., 1620 Decatur St., Brooklyn 27, N.Y.—C,D,F,K,L,AP
 DeMornay-Bonardi, Inc., 780 S. Arroyo Pkwy., Pasadena, Calif.—AM,AN,AU
 Detectolab, Inc., 6544 Sheridan Rd., Chicago 26, Ill.—C
 Dielectric Materials Co., 5315 N. Ravenswood Ave., Chicago 40, Ill.—A,C,D,E,F,G,H,J,R,U,W,X,Y,AE,AH
 DIAMOND MFG. CORP., 7 North Ave., Wakefield, Mass.—C
 DIAMOND MICROWAVE CORP., 7 North Ave., Wakefield, Mass.—AU
 Diamond Wire & Cable Co., 445 Park Ave., Sycamore, Ill.—A,F,G,H,L,R,W,Y,AG,AH,AP
 Division Lead Co., 836 W. Kinzie St., Chicago 22, Ill.—F
 Driver Co., Wilbur R., Riverside Ave., Newark 4, N.J.—AG
 Driver-Harris Co., Harrison, N.J.—T,AC,AG
 DUDEK & ROCK, 2100 W. Fulton, Chicago, Ill.
 DUMONT LABS., INC., INSTRUMENT DIV., 760 Bloomfield Ave., Clifton, N.J.—X
 DUMONT LABS., INC., ALLEN B. TV TRANSMITTER DEPT., MOBILE COMM. DEPT., 1500 Main St., Clifton, N.J.—B,D,AO
 Eagle Electric Mfg. Co., 23-10 Bridge Plaza S., Long Island City, N.Y.—L
 EBY, HUGH H., 4700 Stenton Ave., Philadelphia 44, Pa.—C
 Elcon Mfg. Co., 436 E. Manchester Ave., Los Angeles 3, Calif.—C
 Eldi Electronic Devices, 204 W. Houston St., New York 14, N.Y.—C,AP
 Electrometric Inc., Box 107, Woodstock, Ill.—W
 Electro Precision Products Inc., 139-30 34th Rd., Flushing 54, N.Y.—AU
 Electro-Sound Corp., 115 Halleck St., Boston, Mass.—G,H
 Empire Electronics Co., 166 River St., Paterson 1, N.J.—C,D,L,M,X,AP
 Ericsen Mfg. Co., 5209 Euclid Ave., Cleveland 3, Ohio—L
 Essex Wire Corp., 1601 Wall St., Fort Wayne 6, Ind.—C,E,F,G,H,I,L,N,Q,R,S,U,V,W,X,Y,AA,AE
 Everlast Wire & Cable Co., 12 Maple Ave., Haverstraw, N.Y.—F,K,R
 FACTORIES ENTERPRISES INC., P.O. Box 4025, Pittsburgh 1, Pa.
 Fansteel Metallurgical Corp., 2200 Sheridan Rd., N. Chicago, Ill.—AK,AL
 Federal Electric Corp., 6446 Santa Monica Blvd., Los Angeles 38, Calif.—A,B,D,H,J,K
 FEDERAL TELECOMMUNICATION LABS. INC., 500 Washington Pl., Nutley, N.J.—AQ
 FEDERAL TELEPHONE & RADIO CO., DIV. INTERNATIONAL TELEPHONE & TELEGRAPH CORP., 100 Kingsland Rd., Clifton, N.J.—D,G,H,J,K,Y,AA,HA
 Fenton Co., 15 Moore St., New York 4, N.Y.—D,F,G,H,K,N,O,R,Y,AE,AH,AJ
 Ferris Instrument Co., 110 Correlia St., Boonton, N.J.—AQ
 Ferro Electric Prod., Kirkland, Ill.—A,K,N
 Fidelitone, Inc., 1616 Devon Ave., Chicago 26, Ill.—AB
 F-R Machine Works, 44-14 Astoria Blvd., Long Island City 3, N.Y.—AN,AQ
 Fretco Inc., 406 N. Craig St., Pittsburgh 13, Pa.—A,B,K
 Gavitt Mfg. Co., Brookfield, Mass.—C,F,H,L,M,R,AE,AH
 General Cable Corp., 420 Lexington Ave., New York 17, N.Y.—N,O,Q,R,S,U,Y,AA,AE,AH
 General Cement Mfg. Co., 919 Taylor Ave., Rockford, Ill.—L,AD
 GENERAL ELECTRIC CO., CONSTRUCTION MATERIALS DIV., 1285 Boston Ave., Bridgeport 2, Conn.—F,L,O,R,U,X,Y,AA
 GENERAL ELECTRIC CO., MONOWATT DEPT., 95 Hathaway St., Providence 7, R.I.—C
 General Hermetic Sealing Corp., 99 E. Hawthorne Ave., Valley Stream N.Y.—C
 General Insulated Wire Works, 69 Gordon Ave., Providence, R.I.—D,F,G,H,L,O,R,Y,AE,AG
 GENERAL RADIO CO., 275 Mass. Ave., Cambridge 39, Mass.—D,AQ
 GERLYN ENGINEERING CO., 2151 N. Damen Ave., Chicago 47, Ill.—C,X

99—WIRE, CABLE & WAVEGUIDE

Bus bar	AR
Cable, antenna transmission, receiving	A
Cable, antenna transmission, transmitting	B
Cable, assemblies	C
Cable, coaxial	D
Cable, flat woven	E
Cable, insulated	F
Cable, microphone	G
Cable, shielded	H
Cable, ignition	I
Cable, solid dielectric	J
Cable, UHF	K
Cords, attachment	L
Cords, resistance	M
Microwave assemblies	AT
Slotted Lines	AQ
Test Leads	AP
Transmission line	AO
Wire, aluminum	N
Wire, asbestos insulated	O
Wire, ceramic insulated	P
Wire, copper, bare	Q
Wire, copper, insulated	R
Wire, enameled	S
Wire, filament	T
Wire, glass insulated	U
Wire, guy	V
Wire, harnesses	W
Wire, high voltage	X
Wire, hookup	Y
Wire, litz	Z
Wire, magnet	AA
Wire, magnetic recording	AB
Wire, nickel-clad copper	AC
Wire, phosphor bronze	AD
Wire, plastic insulated	AE
Wire, platinum	AF
Wire Reels	AS
Wire, resistance	AG
Wire, shielded	AH
Wire, silver plated	AI
Wire, steel	AJ
Wire, tantalum	AK
Wire, tungsten	AL
Waveguide components	AU
Waveguides, flexible	AM
Waveguides, rigid	AN

Accurate Insulated Wire Corp., 25 Fox St., New Haven 13, Conn.—A,D,F,G,H,L,R,U,Y,AE,AH
 Advance Insulated Wire & Cable, P. O. Box 1026, Plainfield, N.J.—A,D,F,G,H,I,J,K,L,R,U,X,Y,AE,AH,AO
 Aerolite Electronics, 507 26th St., Union City, N.J.—C,L,W,AP

Goldsmith Bros. Smelting & Ref. Co., 111 N. Wabash Ave., Chicago 2, Ill.—AF
 Good, Inc., 1014 Fair Oaks Ave., S. Pasadena, Calif.—A,F,I,J,K,Q,R,X,AE,AO,AP
 GRAYBAR ELECTRIC CO., 420 Lexington Ave., New York 17, N.Y.—GAO
 G. W. Assoc., Box 2263, El Segundo, Calif.—AM,AN,AQ,AU
 Hackensack Cable Corp., 110 Orchard St., Hackensack, N.J.—A,B
 Haft & Sons, 950 Kent, Brooklyn 5, N.Y.—Y
 HEMINWAY & BARTLETT, 500 E Ave., New York 36, N.Y.—E
 Hitemp Wires Inc., 126 Windsor Ave., Mineola, L.I., N.Y.—D,F,H,K,R,S,Y,Z,AA,AE,AAI
 Houlihan Co., T. J., 2508 W. Lawrence Ave., Chicago 25, Ill.—C
 Hudson Wire Co., Ossining, N.Y.—N,Q,R,S,U,Z,AA,AD,AI
 Imperial Radar & Wire Corp., 820 E. 233rd St., New York 66, N.Y.—A,B,C,D,E,F,G,H,I,J,K,L,N,O,P,Q,R,S,U,V,W,X,Y,Z,AA,AC,AE,AI,AL,AP
 Improved Seamless Wire Co., 775 Eddy St., Providence 5, R.I.—AC
 INCA Mfg. Div., Phelps Dodge Copper Prods., Ft. Wayne, Ind.—S,U,AA
 Industrial Wire Products, 1106 Carnegie Ave., Cleveland 15, Ohio—C,L,M
 Instrument Wire Co., 158 Church St., Guilford, Conn.
 Insuline Corp. of America, 186 Granite St., Manchester, N.H.—M,AP
 Jelliff Mfg., Southport, Conn.—S,U,A,G,AH
 Jersey Specialty Co., Little Falls, N.J.—F,AE,AO,AQ
 Jiffy Clip Mfg. Co., 128 Clinton Ave., Huntington, N.Y.—AP
 JFD Mfg. Co., 6101 16 Ave., Brooklyn 4, N.Y.—A,D,E,F,H,M,AP
 JOHNSON CO., E. F., Waseca, Minn.—D
 Kaywolf Products Co., Overton, Nebr.—AE
 KELLOGG SWITCHBOARD & SUPPLY CO., 79 W. Monroe St., Chicago 3, Ill.—Q,R
 Kerrigan Lewis Mfg. Co., 4421 W. Rice St., Chicago 51, Ill.—Z,AA
 KEYSTONE ELECTRONICS CORP., 423 Broome St., New York 12, N.Y.—AP
 Keystone Watch Case Div., Riverside Metal Co., 1 Pavilion Ave., Riverside, N.J.—AD
 Kings Electronics Co., 40 Marbledale Rd., Tuckahoe, N.Y.—C,AP,AQ
 Kings Microwave Co., 719 Main St., New Rochelle, N.Y.—AN,AQ
 Kinney Co., Rosslyn Rd., Carnegie, Pa.—AN
 Kolton Electric Mfg. Co., 125 N.J. Railroad Ave., Newark 5, N.J.—AR
 Korb Engr. & Mfg. Co., 30 Ottawa Ave., Grandville, Mich.—AN
 Kulite Tungsten Co., 723 Sip St., Union City, N.J.—AK
 Kulka Electric Mfg. Co., 633 S. Fulton Ave., Mount Vernon, N.Y.—L
 Kupfrian Mfg. Co., 367 State St., Binghamton, N.Y.—W
 LENZ ELECTRIC MFG. CO., 1751 N. Western Ave., Chicago 47, Ill.—C,D,E,F,G,H,L,R,U,X,Y,AAH
 Lieco, Inc., 147 Ocean Ave., Lynbrook, N.Y.—A,B,C,D,N,AM,AN,AQ,AU
 Lerner Instrument & Electronics Mfg. Corp., GPO Box 620, Brooklyn 1, N.Y.—AN,AO,AQ
 Lewis Eng'g Co., Naugatuck, Conn.—AG
 Lynch Carrier Systems, Inc., 96 Jessie St., San Francisco 5, Calif.—AO
 Mackenzie Products Co., 141 Brewery St., New Haven 11, Conn.—AN
 Makepeace Co., D. E., Div. Union Plate & Wire Co., Attleboro, Mass.—AN,AR
 Marconi's Wireless Telegraph Co., 23 Beaver St., New York 4, N.Y.—AO
 MENDELSON SPEEDGUN CO., 4th Ave., Haskell, N.J.—AN
 Mercury Eng'g Corp., 399 E. Cottage Pl., York, Pa.—C,D
 Meridian Metal Craft, Inc., 213 W. Whittier Blvd., Whittier, Calif.—AN
 Microdot Div., Felts Corp., 1826 Fremont Ave., S. Pasadena, Calif.—D,H,J,K
 MICROWAVE ASSOCIATES, 22 Cummington St., Boston 15, Mass.—AQ
 Microwave Devel. Labs, Inc., 22D Grove St., Waltham 54, Mass.—AN
 Miller Electric Co., 120 Main St., Pawtucket, R.I.—F,L,R,U,W
 Modelectric Products Co., 1500 Bangs Ave., Asbury Park, N.J.—L
 Modern-Aire Mfg. Corp., 4436 W. Roosevelt Rd., Chicago 24, Ill.—N,V
 Modern Wire Co., 39-30 Review Ave., Long Island City 1, N.Y.—N,Q,R,V,AJ
 Monotuck Mfg., Water St., Holyoke, Mass.—Q
 Moore Tool Works, 1311 Riverside Dr., Los Angeles 31, Calif.—L
 Nassau Research & Development Associates, 66 Main St., Mineola, N.Y.—AN
 National Electrical Machine Shops, 919 Jesup Blair Dr., Silver Spring, Md.—C
 National Electric Products Corp., 140 Stanwix St., Pittsburgh 22, Pa.—K,R,Y
 Neosil Products Div., Rubber Associates, 850 Metropolitan Ave., Brooklyn 11, N.Y.—C,L
 New England Electrical Works 365 Main St., Lisbon, N.H.—E,F,H,R,S,Z,AA
 Nichols Products Co., 325 W. Main St., Moorestown, N.J.—AN

ELECTRONIC INDUSTRIES DIRECTORY

Nichols Wire & Aluminum Co., 1728 Rockingham Rd., Davenport, Iowa—V
 North American Phillips Co., Inc., Elmet Div., Lisbon Rd., Lewiston, Me.—N,Q,S,T,AA,AL
 N.R.K. MFG. & ENGG CO., 4601 W. Addison St., Chicago 41, Ill.—AN,AU
 Okonite Co., Passaic St., Passaic, N.J.—D,F,G,H,I,J,X,AE,AH
 Pacific Electricord Co., 3217 Exposition Pl., Los Angeles 18, Calif.—C,D,L,M
 Pacific Mercury Research Center, 1500 Mission Canyon Rd., Santa Barbara, Calif.—C,W
 Peirce Wire Recorder Corp., 5900 N. Northwest Hwy., Chicago 31, Ill.—AB
 Peschel Electronics, Inc., 13 Garden St., New Rochelle, N.Y.—C,W
 Petroff, Peter A., 127 Water St., New York 5, N.Y.—A,B,D,K,AL,AM,AN
 PHALO PLASTICS CORP., 25 Foster St., Worcester 8, Mass.—A,C,D,F,G,H,K,L,R,W,X,Y,AE,AH,AO
 PHAOSTRON CO., 151 Pasadena Ave., S. Pasadena, Calif.—L,AP
 PHELPS DODGE COPPER PRODUCTS, 40 Wall St., New York 5, N.Y.—A,B,D,F,H,I,J,K,Q,R,S,T,U,X,AA,AE,AO,AR
 Philadelphia Electronics Inc., 24 E. Goulter St., Philadelphia 44, Pa.—C
 Philmore Mfg. Co., 113 University Pl., New York 3, N.Y.—G,M
 Photon Research Products, 421 N. Foothill Blvd., Pasadena 8, Calif.—CAN
 Plastic Wire & Cable Corp., E. Main St., Jewett City, Conn.—D,F,G,H,I,L,R,W,Y,AAH,AP
 Plastoid Corp., 42-61 24 St., Long Island City 1, N.Y.—A,D,E,F,H,K,R,U,Y,AE,AH
 Plymouth Electronics Corp., 50 Kingsbury St., Worcester 3, Mass.—V
 POLYTECHNIC RESEARCH & DEVELOPMENT CO., 202 Tillary St., Brooklyn 1, N.Y.—AQ,AU
 Portchester Instrument Corp., 114 Wilkins Ave., Portchester, N.Y.—AN,AR
 Precision Resistor Co., 108 US Highway 22, Hillside 5, N.J.—AG
 Precision Tube Co., N. Wales, Pa.—AH
 Premier Instrument Corp., 52 W. Houston St., New York 12, N.Y.—AR,AU
 PRODELIN, INC., 307 Bergen Ave., Kearny, N.J.—D,K,AN,AU
 Quincy Speaker Mfg. Corp., 221-5 Oak St., Quincy, Ill.—C,L,W
 Radiophone Co., 600 E. Evergreen Ave., Monrovia, Calif.—L,W
 Radio City Products Co., 101 W. 31st St., New York 1, N.Y.—C,L,M,AP
 Radio Kits, 120 Cedar, New York 6, N.Y.—AP
 Radio Sonic Corp., 111 Bleeker St., New York 12, N.Y.—C,W
 REA Magnet Wire Co., Inc., 3610 E. Pontiac St., Fort Wayne 4, Ind.—AA
 Rego Insulated Wire Co., 830 Monroe St., Hoboken, N.J.—D,G,R,X,Y
 Remco Mfg., 545 N. LaSalle, Chicago, Ill.—C
 Revere Corp. of America, 845 N. Colony Rd., Wallingford, Conn.—F,H,R,U,W,Y,AE,AH,AI
 Rex Corp., Hayward Rd., W. Acton, Mass.—A,D,F,G,H,K,R,X,Y,AE,AH
 Reynolds Metals Co., 2500 S. 3rd St., Louisville 1, Ky.—N
 Rhode Island Insulated Wire Co., 50 Burnham Ave., Cranston, R.I.—A,C,D,F,G,H,I,J,K,L,O,R,W,X,Y,AAH
 Roanwell Corp., 662 Pacific St., Brooklyn 17, N.Y.—L
 Rockbestos Products Corp., 285 Nicoll St., New Haven 4, Conn.—D,F,H,K,O,R,X,Y,AC,AE,AH
 Rodale Mfg. Co., Emmaus, Pa.—L,M
 Roesch Co., D.J., 2800 S. Figueroa St., Los Angeles 7, Calif.—C
 Roffan Co., Topsfield, Mass.—AN
 Rollins Corp., P.O. Box 213, Mulberry St., Lewes, Dela.—C,D,G,H,I,L,W
 Rome Cable Corp., Rome, N.Y.—D,F,G,H,N,Q,R,U,Y,AA,AE,AO
 Runzel Cord & Wire Co., 4727 Montruse Ave., Chicago 41, Ill.—F,H,R,U,W,Y,AE,AH
 Rupp's Assembling & Mfg., 2341 N. Seminary Ave., Chicago 14, Ill.—C,F,G,L,O,R,Y
 Sanders Associates, Inc., 137 Canal St., Nashua, N.H.—AN,AQ,AU
 Saxton Products, 2101 Grand Concourse, New York 53, N.Y.—AO
 Schutter Mfg. Co., Carl W., 80 E. Montauk Highway, Lindenhurst, N.Y.—AM,AN
 Scientific Assembly Co., 65 Hope St., Brooklyn 11, N.Y.—C
 Scientific Associates Inc., 580 Virginia Ave., N.E., Atlanta, Ga.—AU
 Sears Co., M. J., Roxbury, N.Y.—G
 Secon Metals Corp., 7 Intervale St., White Plains, N.Y.—N,Q,R,S,T,AD,AF,AG,AI,AJ

Selectar Industries, Inc., 3100 Ocean Parkway, Brooklyn 35, N.Y.—CAN,AP,AQ
 Sequoia Process Corp., 871 Willow St., Redwood City, Calif.—F,G,H,R,X,Y,AE,AH
 Sightmaster of California Co., Gillespie Airport, Santee, Calif.—AM,AN
 Sightmaster Corp., 111 Cedar St., New Rochelle, N.Y.—AM,AN
 Sittler Corp., 18 N. Ada St., Chicago 7, Ill.—C,Q,R,U,W,AP
 Slepian & Co., Arthur, 22 Burroughs St., Bridgeport, Conn.—R,Z,AA
 Smith Mfg. Co., F. H., 3047 W. Carroll Ave., Chicago 12, Ill.—L
 Smith Inc., H., 436—18 St., B'klyn., N.Y.—X,AP
 South River Metal Prod. Co., 377-379 Turnpike, South River, N.J.—V
 SPRAGUE ELECTRIC CO., 233 Marshall St., North Adams, Mass.—AA
 Square Root Mfg. Corp., 391 Saw Mill River Rd., Yonkers 2, N.Y.—C
 Star-A Electric Mfg. Co., 269 Meseroles St., Brooklyn 6, N.Y.—L
 Star Stainless Screw Co., 190 Union Ave., Paterson 1, N.J.—AJ
 Suprenant Mfg. Co., 199 Washington St., Boston 8, Mass.—D,F,G,H,N,R,T,U,Y,AE,AH,AI
 Switchcraft Inc., 1334 N. Halsted St., Chicago 22, Ill.—C
 SYLVANIA ELECTRIC PRODUCTS INC., 1740 Broadway, N.Y. 19, N.Y.—AC,AI,AL
 Taylurel Corp., 3-33 Rutter St., Rochester 6, N.Y.—AB
 Technicraft Laboratories, 1200 Main St., Thomaston, Conn.—N,AM,AN,AQ
 Telerad Mfg. Corp., 1440 Broadway, New York 18, N.Y.—AO
 Teletronic Laboratories Inc., 1835 W. Rosecrans Ave., Gardena, Calif.—C,W
 Tensitron, Inc., Pin Hill, Harvard, Mass.—AN,AU
 TENSOLITE INSULATED WIRE CO., 198 Main St., Tarrytown, N.Y.—D,F,H,R,U,W,Y,AE,AH
 Thompson Clock, Bristol, Conn.—L,V,AR
 Titeflex, Inc., 500 Frelinghuysen Ave., Newark 5, N.J.—AM,AN
 T. J. Mfg. Corp., 1020 S. Josephine St., Martinsville, Ind.—C
 Tricon Mfg., 8008 Wallace St., Chicago, Ill.—AF
 Tri-Dex Co., P.O. Box 1207 Lindsay, Calif.—C
 Trisch Co., John D., 1310 McKinney Ave., Houston, Texas—D,AM,AN,AO
 Tru-Connector Corp., 416 Union St., Lynn, Mass.—A,B,C,D,K,AAO
 T.V. Development Corp., 2024 McDonald Ave., Brooklyn 23, N.Y.—AO
 Ultra Electroforming & Mfg. Co., 110 Cedar Ave., Pitman 15, N.J.—AM,AN
 Union Plastics Corp., 1710 Paterson Plankroad, Secaucus, N.J.—A,D,F,G,H,K,L,R,U,X,Y,AE,AH,AAO
 United Mfg. & Service Co., 405 S. 6th St., Milwaukee 2, Wis.—W
 Universal Microwave Corp., 380 Hillside Ave., Hillside, N.J.—AN,AQ
 Univox Corp., 102 Warren St., New York 7, N.Y.—A,C,D,K,W,AAO
 U. S. ELECTRONICS CORP., 275 Warren St., Lyndhurst, N.J.—C
 U.S. Tower Co., 219 Union Trust Bldg., Petersburg, Va.—V,AAO
 U.S. Wire & Cable, Progress & Monroe Sts., Union, N.J.—A,B,D,F,G,H,I,K,L,M,X,AE,AH,AP,AQ
 Victor Electric Wire & Cable Corp., 64 Ackerman Ave., Clifton, N.J.—A,B,C,F,G,H,K,L,Q,R,Y,AAO
 Walsco Electronics Corp., 3225 Exposition Pl., Los Angeles 18, Calif.—N,Y,AD
 Ward Products Corp., Div. Gabriel Co., 1148 Euclid Ave., Cleveland 15, Ohio.—K,AAO
 Warren Wire Co., Pownal, Vt.—D,E,H,Q,R,S,Y,AA,AAH
 WAVELINE INC., Passaic Ave., Caldwell, N.J.—AN,AQ,AU
 Webster-Chicago Corp., 5610 W. Bloomingdale Ave., Chicago 39, Ill.—AB
 Western Electronic Enterprises, 3348 W. Compton Blvd., Gardena, Calif.—D,AN
 Western International Co., 45 Vesey St., New York 7, N.Y.—D,G,H,K,AAH,AN,AP
 Western Mfg. Co., 1400 W. 22 St., Kearny, Nebr.—A,D,K,AAO
 Weston Labs., Inc., Old Littleton Rd., Harvard, Mass.—AQ
 Weymouth Instrument Co., 1440 Commercial St., East Weymouth 89, Mass.—D
 Wheeler Insulated Wire Co., 150 E. Aurora St., Waterbury 20, Conn.—Q,R,S,W,Z,AA
 Whitaker Cable Corp., 1301 Burlington Ave., N. Kansas City 16, Mo.—H,I,L,R,U,W,Y,AA
 White Industries, Inc., 421 W. 54th St., New York 19, N.Y.—CI
 WHITE & SONS, JAMES L., 374 Verona Ave., Newark 4, N.J.—AN
 Whitney Blake Co., 1565 Dixwell Ave., New Haven 14, Conn.—C,D,F,G,H,J,K,L,R,W,AE,AO,AP
 Wilmar Mfg. Co., 2715 E. 14th St., Kansas City 27, Mo.—W
 Wind Turbine Co., E. Market St. & Penna. R.R., West Chester, Pa.—V
 Winsted Div., Hudson Wire Co., Main St., Winsted, Conn.—S,Z,AA
 Wirtron Electronic Div., Roberts Mfg. Co., 426 E. Shaffer, Cleburne, Texas—C,W
 Wright Steel & Wire Co., G. F., 243 Stafford St., Worcester, Mass.—V

BRAND and TRADE NAME INDEX

Concert-Line—Shura Bros.
 Concerto—Symphonie Radio
 Conceritone—Berliant
 Confidencer—Roanwell
 Conflex—Metals & Controls
 Conical-V-Beam—Telrex
 Conqueror—Neal Electronic
 Constrict-O-Grip—Technology Instr.
 Contact—Telecomputing
 Contactene—Walco
 Contactron—Bracke-Selb
 Contenna—Conn. Telephone & Elec.
 Continental—Dejar-Amsco
 Contra-Torque—Electric Controller
 Controlite—Ward Leonard Elec.
 Control Master—Kilgen Organ
 Convoltr—Automatic Elec.
 Con-Yagi—Tennalab
 Copperclad—American Phenolic
 Copperoxide—Bradley Labs.
 Coprox—Bradley Labs.
 Copyflex—Charles Brenning
 Coral Designs—H. G. Dietz
 Cor-Lac—Cornish Wire
 Cornet—Camburn
 Corohm—Aerovox
 Coronaseal—Square Root Mfg.
 Coronol—General Electric
 Corophene—Cornish Wire
 Coroprex—Cornish Wire
 Corrie—Ohmite Mfg.
 Corsair—JFD Mfg.
 Corralite—Farnam Prods.
 Corwico—Cornish Wire
 Cosmogonite—Radion
 Count Master—Mfrs. Eng'g & Equip.
 Cooplato—Centralab
 Crabloks—Burndy Eng'g
 Craftsman—Radio Craftsmen
 Crecohm—Howard Ind.
 Crestran—Crest Transformer
 Crestrol—Crest Transformer
 Crestwood—Daystrom Electric
 CRL—Centralab
 Croliite—H. L. Crowley
 Croloy—H. L. Crowley
 Cronam—Waldom Electronics
 Crow—Universal Scientific
 CRU—National
 Crusader—Hudson Amer.
 Crystalar—Brush Electronics
 Crystal-Seal—Gits Molding
 Crystograph—Offner Electronics
 'C-Tema' Sealed—Amer. Radionic
 CTS—Chicago Telephone Supply
 Cytalite—Cascade Research
 Cab Garder—Ectro
 Cue Tape—Rangerone
 Cunningham—Radio Corp. of Amer.
 Cunningham Crossbar—J. Cunningham Son
 Capron—Wilbur B. Driver
 Custom 400—Stromberg-Carlson
 Catrode—Electric Welding Alloys
 CV—Oregon Corvex
 Cyclo—Counter and Control
 Cyclohm—Howard Inds.
 Cycle-Trol—Cyclotron Spec.

Dabs—Downing Crystal
 Dag Dispersion—Acheson Colloids
 Dalohm—Dale Prods.
 Dandee—Aerovox
 Dandux—C. R. Daniels
 Dason—J. W. Davis
 Davenoil—Daven
 DeArmons—Rowe Ind.
 Decacenter—Decade Instr.
 Decaliter—Decade Instr.
 Decalator—Decade Instr.
 Deca-Sweep—Decade Instr.
 Decalider—Decade Instr.
 Deco—Damont Electric
 Decohm—Davis Elec.
 Decor-Tenna—Midwest Naturalite
 DeRance—All Star Prods.
 DeForest—Radio Corp. of Amer.
 Dekepts—Electro-measurements
 Dekastats—Electro-measurements
 Dekatron—Atomic Instr.
 Dehavidors—Electro-measurements
 Del Peo—Centralab
 Delta Beam—K-G Electronics
 Deltadyne—Arnold Bailey
 Delta Glo—K-G Electronics
 Deltamax—Arnold Eng'g
 Deluxe—K. H. Huppert
 Demco—Dormitzer Electric
 Densichron—W. M. Welch
 Dependable—Trim
 Deoxidin—American Chemical
 Derbylite—Luminous Resins
 Desco—Dietz Design
 Detect-A-Fire—Fenwal
 Detectrodes—Detectolab
 Determohm—Ohmite Mfg.
 Dew Pointer—Illinois Testing Labs.
 DFS—Valgey Crystal
 Diacon—Altec Lansing
 Di-Acro—O'Neil-Irwin
 Diagonometer—Supreme
 Diagnoscope—Supreme
 Dialight
 Dialite—Ackerman Engravers
 Diamatral—Standard Electronic
 Diamond—Continental-Diamond Fibre
 Diamond—Royal Diamond Tool
 'Diamond W'—Hart Mfg.
 Diamond 'K'—Kenyon Trans.
 Diamond Weave—F. W. Sickles
 Diaphlex—Cook Electric
 Diasonic—National Sound Equip.
 Diatherm—American Diathermy

Diatron—Consolidated Eng'g
 Dico—Diamond Mfg.
 Dietafilm—Miles Reproducer
 Dieflex—Insulation Mfrs.
 Dietz Photo—H. G. Dietz
 Differential—Electro-Voice
 Diffracton—Bracke-Selb
 Diffusicon—University Loudspeakers
 Digi-Tester—Telecomputing
 Digi-Verter—Electronic Assoc.
 Dilectoid—Cont. Diamond Fibre
 Diliteco—Continental-Diamond Fibre
 Dimensitono—Crawford Dimensitono
 Diminette—Permoflux
 Dimolite—Transistor Prods.
 Diploite—Dielectric Materials
 Dipmaster—Lyssa Mfg.
 Direct-Drive—Shura Bros.
 Directric—Electro-Physics
 Directron—Barry Electronics
 Directron—Sanford Miller
 Directronic—Snyder Mfg.
 Diron—Fink Electronics
 Discabinet—Wallach Assoc.
 Discaps—Radio Materials
 Discohm—Ward Leonard
 Dispatcher—Shure
 Dit-Meo—Drive-In-Theatre Mfg.
 Divco—Division Lead
 Dividohm—Ohmite Mfg.
 Dixie—C. F. Cannon
 Dixie—Dixie Controls
 D-K—Western Electronic
 Dobar—Dobackman
 Dot—United-Carr
 Douglas—British Ind.
 Dvohm—Daven
 Dreadnaught—P. Wall
 Dri-Film—General Electric
 Drop-Lock—South River Metal Prod.
 Dualdrum—Gorrell & Gorrell
 Dual-Match—Mosley Electronics
 Duette—Jensen Mfg.
 Dufelt—Filters
 Dumiter—Allen B. DuMont
 Dumonitor—Allen B. DuMont
 Duno—Strathers-Dunn
 Duo-Band—Telrex
 Duocarb—Wilbur B. Driver
 Duo-Diamond—JFD Mfg.
 Duo Mount—S. River Metal
 Duo Seal—W. M. Welch
 Duo-Volt—Carter Motor
 Duplex—Altec Lansing
 Dupy-Inet
 Durac—Mole-Richardson
 Duracrad—Joseph Kinney
 Duraflex—Co-operative Ind.
 Duramarker—Duramark
 Duramec—Sprague Electric
 Duramic—Aerovox
 Duramold—Damont-Airplane & Marine
 Duranite—Aerovox
 Durapower—Carol Cable
 Duratex—Stromberg-Carlson
 Duravin—Whitaker Cable
 Dustronic—R-dex
 Dutch—Van Cleef
 Duxseal—Johns-Manville
 D&W—Dolinko & Wilkens
 D-Ker—JFD Mfg.
 DX Miller—Babcock Radio
 Dykanol—Cornell-Dubilier
 Dymon-Vane—Ward Prods.
 Dynagraph—Offner Electronics
 Dynamaster—Bristol
 Dyna-Motor—Industrial Electronics
 Dynamic—Jackson Electrical
 Dyna-Miko—Ind. Electr.
 Dynam—British Inds.
 Dynaprene—Whitney Blake
 Dynarc—Eutectic Welding Alloys
 Dynascopy—Century Electronics
 Dynaset—Telrex
 Dynatherm—American Diathermy Prods.
 Dynatracer—Century Electronics
 Dynatrade—Eutectic Welding Alloys
 Dynatrol—North America Model Prods.
 Dynaural—H. M. Scott
 Dynograph—R. B. Annis
 Dynograph—Offner Electronics

EAD—Eastern Air Devices
 Easy-Flo—Nandy & Harman
 Earset—Telax
 Ebeco—Electronic Beam
 Ebony—Johns-Manville
 Ecd—Filters
 Echophone—Hallcrafters
 Eckco—Eckstein Radio TV
 Econo-Switch—Centralab
 ECS—Electronic Control Systems
 Ectrotherm—Electronic Processes
 Eddy Mag—Electric Controller
 Edgeshm—Ward Leonard Elec.
 EDI—Electronic Devices
 Ediswan—British Electronic Sales
 Editall—Tech Labs.
 Ecco—Electronic Eng'g Co. of Calif.
 Efeon—Electronic Fabricators
 Efo—Electronic Instr.
 E-Ball—Ward Prods.
 Elflex—Electro Impulse
 Elmag—Elitel-McCallough
 Elotage—Webster Elec.
 El—Electrons
 Eldec—Electro Devel
 Elecram—Underwood
 Electow Tower—Electro Supply

Electracer—Special Products
 Electro-Cal—Industrial Electronics
 Electrofax—Nays Mfg.
 Electro-Graphic Recorders—Precise Measurements
 Electro-Quartz—Leds & Northrup
 Electro-Mite—Nays Mfg.
 Electron Beam—Valtronics
 Electronomic—Precision Apparatus
 Electronik—Minn-Moneywell
 Electroplopper—Benson-Lehner
 Electropress—Black & Webster
 Electropunch—Black & Webster
 Electroscope—Feller Eng'g
 Electroshield—Joseph Kinney
 Electroshock—Black & Webster
 Electro-Touch—Automatic Radio
 Electrotape—Benson-Lehner
 Electrowriter—Pioneer Electric
 Electro-X—Schaer Mfg.
 Elektran—Ward Prods.
 Elephant—Phosphor Bronze
 Elm-A-Trace—Vidair Electronics
 Elenco—Electric Indicator
 Elincor—Delta Electronics
 Elite—Camburn
 Elite—El Products
 Elmenco—Electro Motive
 Elmat—Electromatic
 Elmet—N. American Phillips
 Elphico—Electro-Physics
 Eltran—Eltran
 EMC—Electronic Measurements
 EMC—Howard Ind.
 Emcor—Elgin Metalformers
 EMII—Eastern Metals Inds.
 Empiro—C. F. Cannon
 Empiro—Burdall & Ward Russell
 Empiro—Mica Insulator
 Emso—Trilch Co.
 Enamel—Lacquer & Chem.
 End-Shab—Newark Wire Cloth
 Ene-Volt—Gorrell & Gorrell
 Enrayograph—New Hermes
 Entoceno—Enthoven Solders
 Envoy—Arthur Ansley
 Epoxy—Eteched Products
 EPIC—Electro Precision Prods.
 EPIC—Electrical and Physical Instr.
 EPM—Electronic Parts Mfg.
 Epe—Berkeley Scientific
 Equipmobile—Eco Mfg.
 Era—Eng'g Research
 Erla—Sentinel Radio
 Ersin Multicores—British Industries
 Ersin—Multicores Sales
 Escoc—Electric Specialty
 Escoc—Electro Switch
 E.S.I.—Electro Measurements
 Esna—Elastic Stop Nut
 Essar—Universal Match
 Etalon—Alina
 E-Therm—Saugama Elec.
 Etecor—Eutectic Welding Alloys
 Etecor—Eutectic Welding Alloys
 Eteutrode—Eutectic Welding Alloys
 Ev—Electro-Voice
 Evahrille—Semon Bache
 Eva Last—Semon Bache
 Evanhm—Wilbur B. Driver
 Everlock—Thompson-Bremer
 Eveready—Union Carbide and Carbon
 Exaktions—Electrosonic Spec.
 Exclter—Central Electronics
 Exgnmet—British Inds.
 Expandite—Telo-Ex-Pand
 Explainette—DuKane
 Explorformer—Geotronic Labs.
 Express—Centralab
 Eye Witness—Radio Corp. of Amer.
 E-Z-Box—Spiraling Prods.
 EZC—Kleer-Vue Mfg.
 E-Z-Code—Western Litho.
 E-Z Strippers—Ideal Ind.

Farm-A-Larm—Lord-Taber
 Farnamica—Farnam Mfg.
 Farnsworth—Cagehart-Farnsworth
 Fastech—Centralab
 Fathometers—Raytheon
 Faxfilm—Brush Electronics
 Faximile—Hogan Labs.
 Faxpaper—Hogan Labs.
 FB-7—National
 FC—General Riveters
 F-C—Film Capacitors
 Featherlite—Webster Elec.
 Featherlite—Brush Electronics
 Featherlite—Century Lighting
 Featherweight—Clifford Mfg.
 Featherweight—Trim
 Fel-Pro—Felt Products
 Femco—Farmers Eng'g
 Fen-Tone—Fenton
 Fenwiro—Fenton
 Ferrimo—General Ceramics
 Ferry—Superox Electronics
 Fiberglas—Rentley, Harris
 Fibrolid—Johns-Manville
 Fibron—Irvington Varnish
 Fidelity—Permo
 Fidelity—Fidelity Chemical Prods.
 Field-Fone—Industrial Radio
 50 Line—Walco Electronics
 Filmgraph—Miles Reproducer
 Filmosand—Bell & Howell
 Filmito—Sprague Electric
 Filnet—Centralab Div.
 Filplate—Centralab
 Fil-A-Cor—Magnetic Core
 Filterol—Sprague Electric
 Fil-Test—Vidair Electronics Mfg.
 Fil-Trans—Vidair Electronics Mfg.
 Finco—Finney

Finnflex—T. R. Finn
 Fire Detective—Dictograph Prods.
 Fireguard—F. H. Smith
 Firetron—Photoswitch
 Fireye—Photoswitch
 Fischerquartz—R. M. Fischer
 Fischersino—Fischer
 Fischersound—Fischer
 Fischertherm—Fischer
 Fivor—Crosley
 STV4—Workman TV
 Fixed Vitrohm—Ward Leonard
 Fixtohm—Campbell Inds.
 Flamenol—General Electric
 Flash—A P Electro Lab.
 Flash—Phillips Mfg.
 Flatohm—Centralab
 Flawmaster—C. H. Biggs
 Fleetcom—Communications
 Fleet Control—Hammarlund
 Fleetway—Conn. Telephone & Elec.
 Fleetwood—Conrac
 Flexarm—Art Specialty
 Flexbyte—Flexibio Tubing
 Flex-Focus—Holland Research
 Flexi—Gering Prods.
 Flexlab—Standard Electric Time
 Flexitone—DuKane
 Flexitube—Walco
 Flexloc—Standard Pressed Steel
 Flexo—Art Specialty
 Flexohm—Clorstat
 Flexolite—Inter-Comm. Corp.
 Flexo Mikester—Art Specialty
 Flexshield—Amer. Electric Cable
 Flightcom—Communications
 Floating Jewel—Crosley
 Floating Point—Permo
 Floatass—B/W Controller
 Flosol—Amer. Chemical
 Flowrater—Fischer & Porter
 Flowtron—Vibro Corp.
 Fluid Sound—Lindberg Instr.
 Fluor-Film—E. I. Du Pont de Nemours
 Fluor-O-Chek—Ultra-Violet Prods.
 Fluoroflex—ResistoHex
 Fluorohm—Dilectrix
 Fluorolam—U. S. Gasket
 Fluorimeter—R-C Scientific
 Fluorite—Draco Mfg.
 Flux Gate—Eclipse-Pioneer
 Fluxol—Standard Metals
 Flux-Silk—Lake Chemical
 Foculizer—Quam-Nichols
 Fold-A-Flex—Angle Genesee
 Fonex—Transelectric Mfg.
 Form-A-Jig—Eutectic Welding Alloys
 Formex—General Elec.
 Formflex—Aircraft Transformer
 Formula 50—Constat Labs.
 Formvar—Phelps Dodge Copper
 Fortissimo—PermoHex
 4-Star—Johns-Manville
 "4" Resin Core—Kester Solder
 Frahm—J. G. Biddle
 Franceformer—France Mfg.
 Franklin Drive—Franklin Control
 Fraternity—Symphonie Radio
 Frawley—Hotel Radio Mfrs.
 Free-Vano—Bristol
 Frenselite—Century Lighting
 Fretaway—Fretco
 Fretline—Fretco
 Fretower—Fretco
 Friction Free—Cosino
 Frigidarc—Eutectic Welding Alloys
 Fringe Beam—Neal Electronic
 Fringeloder—Radio Merchandise Sales
 FSK—National
 FSL—National
 FSN—National
 FTL—Federal Telecomm. Labs.
 FTB—Federal Electric
 FTR—Federal Telo. & Radio
 Fuse-Life—Alden Products
 Fuse-tron—Bussmann Mfg.
 Fuse-O-Let—HILo TV Antenna
 Futarobold—Westinghouse
 Fuz-Lox—D & M Prods.
 FXR—F-R Machine Works
 Fiberoid—Wilmington Fibre
 Fiberglass—Eraser

GA & F—Antara Chemicals
 Galvo-Protector—Audio Instr.
 Gamuter—Const. Eng'g
 Gamma—Brinkmann Instruments
 Gangpot—Giannini & Co.
 Garceau—Electro-Medical Lab.
 Gardecan—Yaco West
 Garrard—British Industries
 Geacote—General Electronics
 Gated—Central Electronics
 G-C—General Cement Mfg.
 Gemco—Great Eastern Mfg.
 Gemtonna—Tennalab
 Genecote—General Plastics
 Genemotor—Carter Motor
 Gen-Ral—Mater
 Geohmter—Georator
 Gene-Mito—Allied Int'l
 Geocable—Georator
 Geom—B. F. Goodrich Chem.
 Georel—Georator
 Georlian—Electro-Voice
 Geotrode—Georator
 Geovolt Motor—Georator
 Ger-Pak—Gering Prods.
 G-H—Girard-Hopkins
 GI—General Inds.
 Giant Six—Bargess Battery
 Gibsloys—Gibson Electric
 Gits-Mifo—Gits Molding

Glamor-Tone—Crosley
 Glaston—Clorstat Mfg.
 Glass-H-G—Glass
 Glassal—Pyramic Electric
 Glanite—Gullton Mfg.
 Gilder—Shure
 Globalto—Luminous Resins
 Globar—Carborandum
 Globe Trotter—Radio Corp. of Amer.
 Glo-Craft—Switzer Bros.
 Glo-Melt—Wassco Elec. Prods.
 Glo-Silk—TopRight Tape
 Glo-Tenna—National Electronics
 Glydag—Acheson Colloids
 Glyptal—General Electric
 G Meter—Bounton Radio
 Gold Cap—Carboranum Ind.
 Golden Rig—JFD Mfg.
 Golden Throat—Radio Corp. of Amer.
 Golden Wand—Peerless Prods. Inds.
 Gold-O-Matic—Luxor Lighting Prods.
 Gold Shield—JFD Mfg.
 Goodell—Minn. Electronics
 Goodline—Don Good
 Good-Rite—B. F. Goodrich Chem
 Gordos—Mark Electronics
 GP—Erie Resistor
 GPL—General Precision Labs.
 GR—General Radio
 Gracoil—Kramer Transformer
 Gradient—Shure Bros.
 Gradtemp—Assembly Prods.
 Grafoil—Brush Electronics
 Gra-Lab—Dimeo-Gray
 Grandine—American Chemical
 Graphalloy—Graphite Metallizing
 Graphlon—Graphite Metallizing
 Gravelite—Natural Lighting
 Gravelche—Ess Instr.
 Gravigage—Ess Instr.
 GRC—Gries Reproducer
 Greelbit—Equipment & Service
 Greenband—Todd-Tran
 Green Bullet—Shura Bros.
 Greenohm—Clorstat Mfg.
 Grip—A P Electro Lab.
 Grip-Size Control
 Gripkote—C. W. Haynes Labs.
 Grip-Spintile—Stevens Walden
 Grip Tip—Jiffy Clip Mfg.
 Groundometer—Borden Eng'g
 Groverlites—Natural Lighting
 Gudalace—Gudebrod Bros.
 Gude-Nylace—Gudebrod Bros. Silk
 GXCB—General Crystal
 Gyro-Servo—Summers Gyroscopic

Habirshaw—Phelps Dodge Copper
 Hallmark—British Radio Electronics Ltd.
 Hall-Ohm—Hamilton-Hall Mfg.
 Hallowell—Standard Pressed Steel
 Hallalight—Sylvania Electric Prods.
 Hamtenna—Tennalab
 Handi Talk—Rayovox Mfg.
 Handie-Talkie—Motorola
 Handibulb—W. K. Porter
 Hand-D-Ohm—Cima
 Hand-O-Matic—Eutectic Welding Alloys
 Hansard—T-Bar-U Productions
 Harmlco—P. Wall Mfg.
 Harmon Colors—B. F. Goodrich Chem.
 Harmonic—Kilgen Organ
 Nawille—Hawley Products
 Hayren—Haydon Products
 Hays-Penn—Penn Ind. Instr.
 Hazegage—Ess Instrument
 H & D—Hinde & Dauch
 H-A-Switch—Clorstat Mfg.
 Heard Everywhere—Lowell Mfg.
 Healthkit—Health
 Heavy Duty—Ebert Electronics
 Heco—Harmon Electronics
 Heco—Hopkins Eng'g
 Hecome—Hill Electronic Eng'g
 Heilmecore—Crosley
 Helix—Carl H. Briggs
 Hercules—Acromark
 Hercules—Shura Bros.
 Hermico—Hermetic Seal Prods.
 HermoHex—Kearfoot
 Hex Seal—Automatic & Precision
 Heyco—Heyran Mfg.
 HNB—H. M. Buggie
 HFS—National
 HI—Holab Industries
 HI-A-Cel—Diehl Mfg.
 HI-Bulb—Radiart
 HI-Caps—Centralab
 HI-D—Penberthy Instr.
 HI-Drive—JFD Mfg.
 HI-Parad—Aerovox
 High Ho Output—Minn. Mining & Mfg.
 High-Kaps—Centralab
 High Output—Minn. Mining & Mfg.
 HI-K Ceramic—Erie Resistor
 Nikon—Radio Ceramics
 Niho—Wilbur B. Driver
 HI-10—Radiart
 Hindview—Whitehead Stamping
 Hignover—Hignover Corp.
 Hi-B—E. F. Johnson
 His Master's Voice—Radio Corp. of Amer.
 HI-Stub—Erie Resistor
 HI-Temp—Cons. Wire & Assoc.
 HI-Temp—K. H. Huppert
 Hitco—H. I. Thompson
 HI-Top—Telo-Ex-Pand

BRAND and TRADE NAME INDEX

Hiconic—Bills Electronic
 Hi-Valco—Johns-Manville
 Hi-Vo—Kaps—Centralab
 HKP—H. K. Porter
 Hobby-Tim—Western Coll & Electrical
 Hoistphone—Mine Safety Appl. Note—Phoenix—Note
 Holo—Don Good
 Holtzman—Transformer Engrs.
 Hom-A-Larm—Lord-Taber
 Hornet—M. Y. Transformer
 Horton—Becker Electronics Mfg.
 Hot-Rod—Nall Electronics
 House of Resistors—ClaroStat Mfg.
 Howdy Duddy—Shura-Tone Prods.
 HP Ceramics—Aerovox
 HQ—Hammarlund Mfg.
 HRD—National
 Hubbellock—Harvey Hubbell
 Hucass—Burdny Eng'g
 Hudco—Hudson Wire
 Hudson—Oxford Electric
 Hug-A-Plug—Moore Tool
 Hug-A-Plug—Page-Fogwell
 Humdingler—ClaroStat Mfg.
 Humidigraph—Bristol
 Humidifier—Sangamo Electric
 Hurlertron—Electric Eye Equip.
 Hushatone—Brush Electronics
 Hycar—B. F. Goodrich Chem.
 Hycor—Clifford Mfg.
 Hydax—Indiana Steel Prods.
 Hylinks—Burdny Eng'g
 Hy-Low—Stevens Prods.
 Hylogs—Burdny Eng'g
 Hy-Met—Astron
 Hypass—Sprague Electric
 Hypersonic—Brush Electronics
 Hypex—Jensen Mfg.
 Hypot—Associated Research
 Hypowax—H. K. Porter
 Hysol—Houghton Labs.
 Hysteret—Ward Leonard Elec.
 Hy-Taf—Houghton Labs.
 Hysol—Aerovox

IBM—Int'l Business Machines
 ICA—Insuline Corp. of Amer.
 Iconic—AlteX Lansing
 IDA—Computer Corp. of Amer.
 IDEA—Ind. Devel. Eng'g
 Ideas—Melody Master Mfg.
 Idealton—Autom. Elec.
 IEP—Industrial Eng'g Prods.
 IHC—Illinois Condenser
 IHT—Illinois Condenser
 IJH—Hycap—Illinois Condenser
 IMA—Industrial Mica
 IMC—Insulation Mfrs.
 Imcor—Insulation Mfrs.
 Immanco—Insulation Mfrs.
 IMP—Carter Parts
 IMP—Pyramid Elec.
 Imperial—Jensen Mfg.
 Imperial—Waisco Electronics
 IMS Record Spray—Silicone Spray Prods.
 Imbedded Circuits—Vacumet
 Inceold—American Products
 INCO—International Nickel
 Incord—Western Gold & Platinum Works
 Incosil—Western Gold & Platinum Works
 Incredator—C.G.S. Labs.
 Indalloy—Indiana Steel Prods.
 Indeo Oil—Industrial Condenser
 Indoor Tenna—Spriting Prods.
 Indox—Indiana Steel Prods.
 Inductronics—Edwin J. Cathman
 Inductube—R. L. Drake
 Industravox—Electronic Eng'g
 Ind-X-Matic—Brush Electronics
 Inline—American Phenolic
 Inmo—Instrument Motors
 Ingutener—Allen B. DuMont Labs.
 Inspecray—Bracke-Seib
 In-Sta-Con—Marine View Electronics
 Instant solder—Cole Radio
 Insulcon—Staubhoff Ceramic
 Insul-Film—Electrofilm
 Insulinks—Burdny Eng'g
 Insulite—Extruders
 Insulok—Burdny Eng'g
 Insulok—Richardson
 Intelec—Federal Tele. & Radio
 Intellin—Federal Tele. & Radio
 Intellink—Federal Tele. & Radio
 Interlock—Harvey Hubbell
 Interlocking—Federal Tele. & Radio
 Inter-Matic—International Register
 Ionotron—U. S. Radium
 IPC—Western Electronic
 IRC—Int'l Resistance
 Irish—Orradio Industries
 IRN—C. K. Williams
 Irv-D-Volt—Irvington Varnish
 Isomode—M. B. Mfg.
 Isomica—Mica Insulator
 Isatron—Consolidated Eng'g
 Isotron—Nuclear Instrument
 Isocon—Indiana Steel Prods. Co.
 It's The Cats Whiskers—T-V Prods.

Jefferson—Atlantic Electronics
 Jefferson—Travis—Emerson Radio
 Jetenna—JFD Mfg.
 Jetline—Carbonaceous Industries
 Jetonic—JFD Mfg.
 Jetrol—Allied Int'l
 Jewel—Swiss Jewel
 JM Capacitor—Speer Carbon
 Jomanco—Johns-Manville
 JP Capacitor—Speer Carbon
 J.S.C.—Jersey Specialty
 JK—James Knights
 J-Trans—Automatic Mfg.
 Jumbo—JFD Mfg.
 J-W—Johnson-Williams

Kalwood—Keller Products
 Kantark—Trico Faso Mfg.
 Kantlink—American Bolt & Nut
 Kapok—Unitorb—Filters
 Karadio—Eckstein Radio & TV
 Kardon—Premier Instrument
 Karopak—Felt Products
 Kasil—Phila. Quartz
 Kay-Lab—Kalbfell Labs.
 K-Cap—Automatic Mfg.
 KEI—Kurman Elec.
 Kehaboxes—Electro-measurements
 Kel-F—M. W. Kellogg
 Kel-J—Electronic Mechanics
 Kemetal—Radio Inds.
 Kenco—Kenwood Eng'g
 Keys—Shakproof
 Kern-Pallards—Pallard Prods.
 K&N—Kreuger & Hudepohl
 Kilo—Kay Electric
 Kimo—Kline Iron & Metal
 Kine-Lite—Vidaira Electronics
 Kine-Test—Vidaira Electronics
 Kinetix—Ketaf Mfg.
 Kin-Ex—Vidaira Electronics Mfg.
 Kieer-It—Supere Electronics
 Kileglight—Kileg Bros.
 Klip—South River Metal Prod.
 Kliplok—Trico Faso Mfg.
 Klipschorn—Klipsch & Asso.
 Klipzon—United Technical Labs.
 K-Lok—Erie Resistor
 Kloss—Sterling Electric Motors
 Knight—Allied Radio
 Knight—Espey Mfg.
 Kodak—Eastman Kodak
 Koll Kradle—Benchmark Mfg.
 Kool-Klamp—Birther
 Koolhom—Sprague Electric
 Koronak—Aerovox
 Koron—Gandlach Mfg.
 Kovar Metal—Staubhoff Ceramic
 Kraftone—Kraft Bros.
 Krank-Up Waxes—Jontz Mfg.
 Kromekot—General Cement
 Krystal Coat—General Cement
 K-Trans—Automatic Mfg.
 Kum-Kleen—Avery Adhesive
 Kurmelco—Kurman Elec.
 Kwick Climb Towers—Jontz Mfg.
 Kwik—South River Metal
 Kwik-Kall Jr.—J. M. Loge Sound Engrs.

Labaco—Berkshire Labs.
 Labcheck—Berkshire Labs.
 Labbete Enamels—C. W. Hayne Labs.
 Labmarker—Berkshire Labs.
 Labohm—Berkshire Labs.
 Labrobs—Berkshire Labs.
 Labrains—Berkshire Labs.
 Lab Unit—G. W. Gates
 Labvolt—Berkshire Labs.
 La-Co Filkes—Lake Chemical
 Lady Tycoon—SoundScriber
 Lafayette—Espey Mfg.
 Lamleoid—Mico Insulator
 Lansing—AlteX Lansing
 Lager Stik—Lako Chemical
 Lazy-X—Radiart
 LB—Lelman Bros.
 LCChecker—Aerovox
 Leab—British Industries
 Leab—Lab. Equip.
 Lectern—J. M. Loge Sound Engrs.
 Lectrodryer—Pittsburgh Lectrodryer
 Lectrofilter—Pittsburgh Lectrodryer
 Lectroformed—Bart Labs.
 Leosona—Universal Winding
 Lexex—G. H. Leland
 LegarThmic—G. M. Giannini
 Lebolite—Century Lighting
 Lebron—Electronic Rectifiers
 LeLab Counters—Mfrs. Eng'g & Equip.
 L.E.M.—JFD Mfg.
 Lemco—Lyle Eng'g & Mfg.
 Lero—Lynn Electronic
 Lesco—Hoffman Radio
 Levelimeter—Fischer & Porter
 Lev-R—Switchcraft
 Lexel—Dobackm
 LFE—Lab. for Electronics
 LF-Jax—Switchcraft
 Lier—Lerner Instrument
 Lifetime—Reeves Soundcraft
 Life-Tone—Allen B. DuMont Labs.
 Light Guard—Elec. Storage Battery
 Lightning—JFD Mfg.
 Lightning—Vaco Prods.
 Lightwatchman—Ripley
 Line-Arc—Electric Controller
 Lineator—Airborne Accessories
 Line-O-Life—Carter Motor
 Liqui-Tape—Ramsey Mfg.
 Litzmaster—Arm Specialty
 Little Jax—Switchcraft
 Little—Switchcraft

Little-Devil—Switchcraft
 Little-Devil—Ohmite Mfg.
 Little Gem—Eglight
 Little Giant—JFD Mfg.
 Little Jewel—Danforth Mfg.
 Little Nipper—Radio Corp. of Amer.
 Little Six—Burgess Battery
 Little Wonder—Philmore Mfg.
 L300—R. J. Buchen Co.
 L450—R. J. Buchen Co.
 Lloyd's—Johnson Mfg.
 LN—Illinois Condenser
 Loadalarm—Brinnell
 Loaded-X—Radiart
 LO-C—Linear Equip.
 Lock-Tite—Thomas & Betts
 Logaten—Kalbfell Labs.
 Logger—Audio Instrument
 Logo—Westinghouse Electric
 Logrine—Logistics Research
 Lokets—Shakproof
 Lemco—London Chemical
 Longlife—Gorrell & Gorrell
 Long Life—Permo
 Loophole—Ward Leonard
 Lo-Pass—Micamold Radio
 Lorax—Haller, Raymond & Brown
 Los Gatos—Lewis & Kaufman
 Lossy Dielectric—Electro Impulse
 Lovinstraments—Lovins Eng'g
 Lowamp—Eutech Welding Alloys
 Lowtemp—Eutech Welding Alloys
 Lube-Lok—Electrofilm
 Lubri-Bond—Electrofilm
 Lubri-Lo—Permo
 Lullaby—Mitchell Mfg.
 Lumatrol—Micro Balancing
 Lumetron—Photovolt
 Lumina—Holland Research
 Lumnetto—Holland Research
 Lusterized—Amer. Electric Cable
 Lusterlab—Amer. Electric Cable
 Luxolene—Delux Coils
 Lustron—Bradley Labs.
 Lynn—Vaco Products
 Lytecap—Planet Mfg.
 Lyt-L Tuner—Lytie Eng'g

Maadac—British Industries
 Mac West—TV Co. of Amer.
 Magic Circle—A.R.F. Products
 Magic Eye—Radio Corp. of Amer.
 Magic Monitor—Radio Corp. of Am.
 Magic Polity—Allen B. DuMont
 Magic-Tac—Plymouth Electronics
 Magmotor—Carter Motor
 Magnabond—Fischer & Porter
 Magnadyne—Kenneth Richardson
 Magna—Magnaflux
 Magnatex—Magnaflux
 Magna-Tone—Hansen Mfg.
 Magnecord—Magnecord
 Magnecordette—Magnecord
 Magnepalnt—Micro-Circuits
 Magnepatron—Ruckelshaus Labs.
 Magnetix—Magnetics
 Magna-Strip—Reeves Soundcraft
 Magneson—Egliss-Planner
 Magnetone—Brush Electronics
 Magnetronic—Teleregister
 Magnetron—Helmenann Electric
 Magniharj—J. C. Doagan
 Magnivolt—Inet. J. C.
 Mail-A-Voice—Brush Electronics
 Major—Allied Int'l
 Major—T. J. Valentino
 Majorette—Major Electronics
 Majorie—Wilbur B. Driver
 Mariners Pathfinder—Raytheon Mfg.
 Marks—Kay Electric
 Marker-Pulser—Brabaker Mfg.
 Marker-Sweeper—Brabaker Mfg.
 Marklad—Markite
 Mark-N-Count—May Eng'g
 Mark-Tone—M. H. Rhodes
 Mark Twain—Raytheon Mfg.
 Warsa—Fidelity Amplifier
 Warrel—Wars Eng'g
 Warren—Melody-Fidelity Amplifier
 Marlette—CBC Electronics
 Masco—Mark Simpson Mfg.
 Master—C. F. Cannon
 Master—Gorrell & Gorrell
 Mastercraft—F & W Sales
 Master Mariner—Hudson American
 Mastertape—Audio Master
 Master-Tenna—Radio Corp. of Amer.

Mastorworks—Columbia Records
 Mast-Lok—Arylo Electronics
 Matched Point—Permo
 Max-I-Toner—HD Electric
 Max-I-Trans—HD Electric
 Max-Mixer—Special Products
 Mayeco—May Eng'g
 McMillon—McCoy Electronics
 M. E.—Marathon Electric
 Meatron—Torgren, C. W.
 Mechanophase—Electro-Voice
 Meeco—Mfrs. Eng'g
 Meek—Kay Electric Co.
 Megaliner—Kay Electric
 Megalizer—Kay Electric
 Mega-Match—Kay Electric
 Mega-Node—Kay Electric
 Mega-Pix—Kay Electric
 Mega-Pulser—Kay Electric
 Mega-Sweep—Kay Electric
 Megger—J. G. Bidlo
 Meg-Marker—Kay Electric
 Meg-O-Max—Sprague Electric
 Meisner—Thordarson-Weissner
 Mico—McCoy Electronics
 Mictore—Molpar
 Mithaphone—Electronic Rectifier

Melotone—Electron Enterprises
 Melodisc—Howe Recording
 Melody Mike—Audio Equip.
 Mel-O-Tone—Automatic Radio
 Melpro—Mercury Electro Prods.
 Memco—Maryland Electronic
 Memolage—Electrosonic Spec.
 Mero-Tape—Product Assoc.
 Mero-O-Seal—Mercury Contacts
 Mercury—Electro-Voice
 Mercury—Valcan Electric
 Merit—Emmett Machine
 Meritone—Autocrat Electronics
 Meritron—Polytech Devices
 Merl—Miller Electro-Research Labs.
 Merlin—Mohawk Electronic
 Merry-Maker—Crosley
 Message Repeater—Mohawk Bus. Machines
 Mesarfo—Hays Mfg.
 Metallite—Astron
 Metal-Clad—Burgess Battery
 Metallized—Int'l Resistance
 Metasol—Brush Electronics
 Metameter—Bristol
 Meta Phone—Bristol
 Meta Vane—Bristol
 Meteor—Astron
 Metermax—Leeds & Northrup
 Metex—Metal Textile
 Met-Can—Pyramid Electric
 Met-L-Fix—Robinson Aviation
 Metabom—Liton Inds.
 Metrafault—Metrotype
 M.G.S.—Mica Coated Prods. Co.
 Metropolitan—Radion
 Micabond—Cont. Diamond Fibre
 Micanite—Cosa
 Micanite—Mica Insulator
 Mic—Molded Insulation
 Mico—Mica Insulator
 Micro—N. H. Ball Bearings
 Microcore—Magnetic Metals
 Microact—Bristol
 Micro Circle—Precise Measurements
 Microdial—George Borg Equip.
 Microdot—Felts
 Microfyne—Joseph Dixon Crucible
 Micro—Kay Elec.
 Microlator—Kay Electric
 Microlite—Glass Fibers
 Microlytic—Micamold Radio
 Micromatch—M. C. Jones Electronics
 Micromax—Leeds & Northrup
 Micrometer—Lamphin Labs.
 Micromotor—Redmond
 Micro-Namio—Micro Balancing
 Micropaint—Micro-Circuits
 Microport—George Borg Equip.
 Micro Power—U. S. Motors
 Micro-Pulser—Kay Electric
 Microsensor—Vilro Corp.
 Microtherm—Raytheon Mfg.
 Microspect—Permo
 Microtorque—G. M. Giannini
 Microtran—Crest Labs.
 Micro-Vox—Mercury Electro
 Microtron—Fischer & Porter
 Microwall—Box
 Midget—Alrax Prods.
 Middlesex—David Bogen
 Midget—Sprague Electric
 Mighty Midget—K. H. Huppert
 Mighty Midget—Industrial Condenser
 Mighty Midget—JFD Mfg.
 Mighty Mite—Mechanical Industries
 Mijabon—John E. Fast
 Mijassab—John E. Fast
 Mijcaps—DuMont-Airplane & Marine
 Mijlimg—Transistor Prods.
 Mijlisc—Stevens-Arnold
 Milwaukee—Wrought Washer Mfg.
 Mine-A-Phone—Stromberg-Carlson
 Minephone—Mine Safety Appl.
 Mineralight—Ultra-Violet Prods.
 Mingang—G. M. Giannini
 Miniaturized S-Band—CGS Labs.
 Mini-Cor—JFD Mfg.
 Minicube—Sanders Assoc.
 Mini-Lite—Balfour Water
 Mini-Lion Carbide & Carbon
 Minimite—Astron
 Mini-Mix—Switchcraft
 Minigak—Radio Specialty Mfg.
 Mini-Plate—Javox
 Miniscaler—Atomie Instr.
 Minisoi—Electronic Devices
 Mini-Shield—Staver
 Mini-Socket—Javox
 Minispot—O'Neil-Irwin
 Mini-Spring—Staver
 Ministrat—Crosley
 Mini-Switch—R. F. Electronics
 Minitorque—G. M. Giannini
 Mini-Nurse—Felts
 Minute to Month—Gorrell & Gorrell
 Miragraph—Techno Instr.
 Mirascope—Techno Instr.
 Mirrortone—Electrosonic Spec.
 Mission Bell—Hoffman Radio
 Mitchell-Hughes—Hoffman Radio
 Mi-Yee-Ray—Fratco
 M-Jax—Switchcraft
 Noble-Mikes—Electro-Voice
 Modelpack—Model Rectifier
 Modified Hilo—Wilbur B. Driver
 Modulite—Berndt-Bach
 Modutronics—Bill Jack Scientific Instr.

Mojo Wave—Schaky Bros.
 Molare—Molo-Richardson
 Mold-Eso—Per—Wark Chem.
 Molds—Mould Prods.
 Moldite—National Moldite
 Moldite—United Condenser
 Mold-X—American Badinco

Monarch—Automatic Radio
 Monarch—British Electronic
 Mondram—Gorrell & Gorrell
 Monofradio—Radio Apparatus
 Monobloc—Winchester Electronics
 Monometer—Redmond
 Monoplex—Shure Bros.
 Monoset—Telux
 Monowall—General Electric
 Monboard—Howard J. Moore
 Monbond—Howard J. Moore
 Monco—Howard J. Moore
 Monoclene—Howard J. Moore
 Moncon—Howard J. Moore
 Moncoate—Howard J. Moore
 Moncewedge—Howard J. Moore
 Monflex—Howard J. Moore
 Monfon—Howard J. Moore
 Monprene—Howard J. Moore
 Monrice—Jordan Mfg.
 Monrex—Howard J. Moore
 Monro—Howard J. Moore
 Monro-Mag—Keystone Products
 Monro-Mite—Globe Inds.
 Motorlite—Ward Leonard
 Motorlytics—Micamold Radio
 Motron—W. C. Robinette
 Moulleties—Moulie Specialties
 Moulite—Danforth Mfg.
 Movie-Clear—Sylvania Elec. Prods.
 Movie-Mite—Calvin
 Movie Sound—Calvin
 M-Scope—Fisher Research
 MT—Illinois Condenser
 Mucgaw—Radio Merchandise Sales
 Multibooster—Industrial TV
 Multi-Cell—Shielding
 Multicoe—British Industries
 Multi-Gate—Hammarlund
 Multi-Master—Precision Apparatus
 Multimeters—Rawson Elec. Instr.
 Multi-Mode—Tele-Beam Inds.
 Multiphase—Central Electronics
 Multiple-Shot—Gits Molding
 Multiplexer—Gray Research
 Multiport—Ford Eng'g
 Multiscaler—Atomie Instr.
 Multisource—Applied Research Labs.
 Multi-Speed—Pentron
 Multitape—Rawdon Smith
 Multitester—Barrett Electronics
 Multivolt—Ohmite Mfg.
 Multi-Z—Haldorson Transformer
 Waltron—Avion Instr.
 Mu-Net—F. W. Sicles
 Mustang—Macon Electronics
 Mustang—Apex Coated Fabrics
 Mated Styles—Shure Bros.
 Mycon—Southern Electronics
 Mykaplast—United Condenser
 Myke-A-Trol—Industrial Electronics
 Mykroy—Electronic Mechanics
 Mylar—Dobackman

Na-Aid—Alden Products
 Nahton—Sorenson
 Narco—National Aeronautical
 Narda—Nassau Research & Devel.
 Narohm—Ohmite
 Natio—National
 Navarre—Vidicon Electronic
 Neck Band—J. M. Loge Sound Engrs.
 Newco-Matic—National Electronics
 Neo-Flash—Auto Test
 Ne-O-Lite—General Cement
 Neoprene—Bishop Mfg.
 Neo-Timo—Electric Controller
 Nepco—National Electric Prods.
 Nepeolm—National Electric Prods.
 Nestler—Dugko Mfg.
 Nevamar—National Plastic Prods.
 Nevatite—Radio Merchandise Sales
 Never-Stain—Nichols Wire & Aluminum
 Newassy—H. K. Porter
 New Life—A. P. Electro Lab.
 New-Cro—J. M. Ney
 Nibbed—Nord Int'l.
 Nibead—Nickel Cadmium Battery
 Nicoro—Western Gold & Platinum
 Nifer—Metals & Controls
 Nistalun—Wilbur B. Driver
 Nine Lives—Union Carbide and Carbon
 99—Blonder-Tongue Labs.
 99 Line—Waisco Electronics
 Nipors—Western Gold & Platinum
 Nipar—Radio Corp. of America
 Ni-Spanic—H. A. Wilson
 Nobility—Continental Carbon
 No Brush—Generator
 Nordral—Johns-Manville
 Noflame-Cor—Cornish Wire
 Noiseraser—Minn. Electronics
 No-9x—Waisco Electronics
 Norcoco—W. American Phillips
 Norplac—Norwotum Plastics
 Norwood Controls—Control Eng'g
 No-Strip—JFD Mfg.
 Nubrazo—American Silver
 Numbographs—Mutarator
 Numechron—Pennwood Numechron
 Nut—JFD Mfg.
 Nu-Way—John Marshall Assoc.
 NVCO—National Video
 NYCO—N. Y. Coil
 Nyplast—Polymer
 Nyplast—Polymer
 Nyatron—Polymer

OACO—Ohio Aerial
 Oakwood—Osborn Products
 Octal—Consolidated Vacoam

BRAND and TRADE NAME INDEX

- Speeddrills—Speedway Mfg.
 Speed-Dee—Peck & Harvey
 Speedex—General Cement Mfg.
 Speedgrinders—Speedway Mfg.
 Speed Grip—Tinnerman
 Speed Nut—Tinnerman
 Speed-Mounts—Phoenix Electronics
 Speedomax—Leeds & Northrup
 Speed Sort—Associated Research
 Speed-Trol—Sterling Electric
 Speed-X—E. F. Johnson
 Speedy-Cat—North Shore Name-plate
 Speedy-Mark—North Shore Name-plate
 Speedy Shift—Winchberger
 Spenerex—Electro-Voice
 Spico Super Phantom—Spiraling Prods
 Spino—Specialized Instr.
 Spinlab—Special Instr.
 Spin-Lock—Russell, Burdall & Ward
 Spintite—Stevens Walden
 Spiralon—Surprenant Mfg.
 Spiraplot—G. M. Giannini
 Spiral-Tenna—Hilo TV Antenna
 Spirashield—Mater
 Spiratube—Flexible Tubing
 Spilac—Western Litho.
 Spilco Cap—Buchanan Electr.
 Spongeo—Imperial Radar & Wire
 Spoteck—Magnaflux
 Spot-O-Graph—Audio Master
 Sprag-Shield—Ramsell Mfg.
 Spray Booth Shield—Ramsell Mfg.
 Spray-Koat—General Cement
 Sprayway—Tro-Pine
 SP Systems—Service Parts
 Spring-O-Matic—Ind. Electr.
 Spring-Action—Sheldon Electric
 SRX—Pioneer Electric
 Stablex—Industrial Condenser
 Stabiline—Superior Electric
 Stacked Diamonds—TV Co. of Amer.
 Staco—Standard Electr.
 Sta-Kon—Thomas & Betts
 Standard—Chi. Std. Transformer
 Standard—Ebert Electronics
 Standco—Clorostat
 Stan-Gard—JFD Mfg.
 Sta-Pat—Cons. Wire
 Statle-Eraser—Allen B. DuMont
 Stationer—General Precision
 Statilux—Magnaflux
 Statue of Liberty—American Comm.
 Stavolt—McCollin-Christie
 STC—Sterling Transformer
 Steacaps—Micamold Radio
 Steadbeam—Allen B. DuMont
 Steel-Ago—Corry-Jamestown
 Steeltelec—Eutectic Welding
 Stemaq—Arnold Ceramics
 Stemo—Stevens Mfg.
 Stenafax—Times Facsimile
 Steno—Crescent Industries
 Stenotape—Electronic Spec.
 Stenilite—Fred Stein
 Stethoscope—Faller Eng'g
 Stop Ark—A. P. Elster
 Storm Master—Winchberger
 STR—St. Regis Paper
 Strain-Ez—Wagpler
 Strate-Lite—Radiart
 Stratoliner—Shurs Bros., Inc.
 Strato—Spiraling Prods
 Strat-O-Lite—Stratosal Mfg.
 Strat-O-Lite—Stratosal Mfg.
 Strato Rays—Froteo
 Strato Towers—Pilestone Sales
 Stratovision—Westinhouse Electr.
 Stress Coat—Magnaflux
 String-A-Lite—Joy Mfg. Co.
 Stripline—Albairon Instr.
 Stripmaster—Ideal Industries
 Striphom—Ward Leonard
 Strobatac—General Radio
 Strobeacon—Kamlite
 Strobo-Lite—Wilcox Research
 Strobolux—General Radio
 Stroboban—Holland Research
 Strobobac—General Radio
 Studite—Symphonie Radio
 Steaphith—Stapahoff Ceramic
 Stycast—Emerson & Cuming
 Styroflex—Phelps Dodge Copper
 Styrosheet—Goring Prods
 SunFlash—Kamlite
 Sub-Mini-Shields—Staver Co.
 Suburban—Radion
 Sunswitch—Ripley
 Super—Union Spring
 Super-Beam—JFD Mfg.
 Super Boom-Lite—O'Neil-Irwin
 Superbulbseye—Radion
 Super Cap—United Electronic
 Super-Cor—Cornish Wire
 Super-Dvohm—Daven
 Super Edgelight—TV Specialty
 Superior—Brach Mfg.
 Superior—P. Wall Mfg.
 Superior—Radiart
 Superjet—JFD Mfg.
 Superlite—Projection Optics
 Super Luxar—Par Products
 Supermalloy—Arnold Eng'g
 Super Katy—Ray-Townes
 Super Marker—Seals Radio
 Superior—Leader Electronics
 Super Phantom—Spiraling Prods
 Super-Pro—Hammarlund
 Super Q—E. I. Githman
 Super Reg-U-Volts—Gramer Transformer
 Super Sniffer—Nuclear Instr.
 Superspeed—Enthoven Solders
 Super-Structure—Radiart
 Supertone—Philmore
 Supersurge—Condenser Mfrs.
 Supertenna—Tennalab
 Supertester—Color TV
 Super-Vee—Radiart
 Super-X—Camburn
 Surco—Surprenant
 Surf—G. M. Labs.
 Surface—Analyzer—Brush Electr.
 Surfene—Kel-F—Surprenant
 Surfene—Surprenant Mfg.
 Sarfon—Surprenant Mfg.
 Sylvatoy—Wilbur B. Driver
 Sweepmaster—Mfrs. Eng'g & Equip.
 Swiftol—Southwest Prods
 Swing Current—Borden Eng'g
 Switar—Paillard Prods
 Switchalds—Mich. Electronics
 Switchmat—Recora
 Switch-D-Lite—Hoffman Eng'g
 Swivelbeam—Radio Mech. Sales
 Switlog—Moody Machine Prods
 S-X—Esser Wire
 Symb-O-Stamp—John Grimm
 Symphonette—Medco Mfg.
 Synchromite—Holland Research
 Synchromount—M. G. Giannini
 Synchrovar—Holland Research
 Synchro—Hansen Mfg.
 Synchroplotter—Anelex
 Synchroprinter—Anelex
 Synchros—Ford Instrument
 Synchrotone—Magnetic Recording
 Synchromag—Amplicron
 Synchro—Fairchild Recording
 Synchromount—G. M. Giannini
 Synero—Nude-Crosley
 Synero-Valve—Bristol
 Synthetics—Lacquer & Chem.
 Syncoverter—Bristol
 Synectron—Dormitzer Electric
 Synkote—Plastoid
 Syntholite—Cons. Wire
 Syntholvar—Varflex
 Tabtron—Tech. Apparatus
 Tab-Weld—Electric Controller
 Taco—Technical Appliance
 Tacoplex—Technical Appliance
 Tan—Weston Electrical Instr.
 Talking Tapes—Talking Devices
 Talking Table—Magnetic Recording
 Tanco—Alliance Mfg.
 Tapek—Broadcast Equip. Spec.
 Tapecester—Electronic Spec.
 Tapeco—Trotone Electronic
 Targetron—Brinnell
 T&B—Thomas & Betts
 TDC—Bell & Howell
 TEC—Translite Electronics
 Tech-Niloy—Technic
 Techni-Timer—Technic
 Tech-Tin—Technic
 Telex—Boston Insulated Wire
 Telecap—Sprague Electric
 Telecaster—Packard-Bell
 Tel-A-Col—Magnetic Core
 Tel-A-Col—Magnetic Core
 Tel-Aid—Tele-Beam Ind.
 Tel-A-Pipe—Western Litho
 Tel-Atton—Vidairo Electronics
 Tel Autograph—Tel Autograph
 Telco—General Cement
 Telodad—Don Good
 Telecap—Sprague Electric
 Telechief—Sangamo Electric
 Telecord—Whitney Blake
 Telecorder—Telecomputing
 Telecordex—Telecomputing
 Tele-Couple—Vidairo Electronics
 Telecraze—Mine Safety Appl.
 Telecraze—Allen B. DuMont Labs.
 Telecraze—Telecomputing
 Telecraze—Whitney Blake
 Telefontek—American Elite
 Telemagnet—Mohawk Bus. Machines
 Tele-Match—Vidairo Electronics
 Telemike—Miles Reproducer
 Telemix—Hamilton Electronics
 Tele-Mobile—Tele-Ex-Prod
 Telemotic—Crawford Dimension
 Telephoto—Aero Telextron
 Tele-Plex—JFD Mfg.
 Telexplex—Prodelin
 Teletelotter—Telecomputing
 Telegene—Whitney Blake
 Telegreader—Telecomputing
 Telegreadex—Telecomputing
 Telegregister—Telegregister
 Teleging—Telkor
 Telesceno—Enthoven Solders
 Telesite—Allen B. DuMont Labs.
 Teleswitch—Hamilton Electronics
 Telesyn—Ford Instrument
 Teletalk—Webster Electric
 Teletenna—Packard-Bell
 Teletest—Anko Mfg.
 Tele-Thermometer—Yellow Springs Instr.
 Teletranscription—Allen B. DuMont
 Tele-Trol—Teletronic Labs
 Teletrol—Allen B. DuMont Labs.
 Teletone—Ward Products
 Teletone—Switchcraft
 Teletender—Electro-Voice
 Teletorator—Jackson Electrical Instr.
 Tel-O-Mike—Sprague Electric
 Teletector—Gray Research
 Temco—Bils Elevator
 Temco—Thermo Electric Mfg.
 Temco—Transmitter Equip.
 Temcometer—Thermo Electric Mfg.
 Temp-Alarm—Tempil
 Tempil—Tempil
 Tempil-Pellets—Tempil
 Tempilites—Tempil
 Temp-R-Tape—Conn. Hard Rubber
 Tenite—Eastman Chemical
 Ten Spot—Fenton
 Tenna-Clamp—Mueller Electric
 Tenna-Clip—Industrial TV
 Tenna-Master—Spiraling Products
 Tenna-Match—Vidairo Electronics
 Tenna Rotor—Alliance Mfg.
 Tenna Scope—Alliance Mfg.
 Tenna-Shield—Jaxev
 Tenna-Switch—Leader Electronics
 Tenna-Tok—Radio Merchandise
 Tenna-Tube—Radio Merchandise
 Tenna-Tube—Jaxev
 Tennatube—National Electric Prods
 Tenneyzhere—Tenney Eng'g
 Tensite—Wilbur B. Driver
 Tensolux—Tensolite Insul. Wire
 Tensolite—Tensolite Insul. Wire
 Tensolon—Tensolite Insul. Wire
 Telpox—Technical Prods.
 Termond—Buchanan Electrical
 Tesco—Eastern Specialty
 Tescon—T.V. Products
 Test-Aid—Auto-Test
 Test-Glo—Ideal Industries
 Testilite—Electronic Devices
 Test Master—Precision Apparatus
 Test-O-Lite—Brach Mfg.
 Testolite—Mfrs. Eng'g & Equip.
 Textolite—General Electric
 TFC—Tretlon Transformer
 Theratron—Bracke-Seib
 Thermo—Diatron
 Thermo—LaRose & Assoc.
 Thermoalloys—Micamold Radio
 Thermoatool—N. Rochelle Tool
 Thermo—Girdler
 Therm-Flex—Radio Ceramics
 Thermindex—Tempil
 Thermo—Ideal Industries
 Thermo-Alarm—Match Electric Dev.
 Thermochem—Radio Eng'g
 Thermoconk—Conk Ceramic
 Thermo-switch—Fenwal, Inc.
 Thermotrode—Eutectic Welding
 Thermovertor—Bristol
 Thesaurus—Radio Corp. of Amer.
 3100 Dist. JFD Mfg.
 3-In-One—JFD Mfg.
 Thommsongene—Whitney Blake
 Thor—Forsberg Mfg.
 Three-Phase—Sciaky Bros.
 Thrupass—Sprague Electric
 Ticon—Titanium Alloy
 Ticonography—Technology Instr.
 Ticondoga—Joseph Dixon
 TI-Match—Camburn
 Timefax—Times Facsimile
 Times Records—Cook Labs
 Tinox—Amer. Solder & Flux
 Tloga—Sheldon Electric
 Tlolektrix—Amer. Lava
 Tipwrench—Smith Heat Treating
 Tite—A. P. Electric Lab
 Titagrip—Dante Electric
 Titemaster—Flett Lab.
 Titone—Sonotone
 Titrling—Consolidated Eng'g
 T-Jax—Switchcraft
 Tobe—Tobe Deutchmann
 Tokvux—Cooper Electronic
 Tomahawk—Stevens Walden
 Tom Boy—Automatic Radio
 Tom Thumb—Automatic Radio
 Tom Thumb—Spiraling Prods
 Tone-Alarm—Mitchell Mfg.
 Tonetex—Electro-Voice
 Tong Test—Columbia Electric
 Top Mat—Times Facsimile
 Topper—Wilbur B. Driver
 Topper—Camburn
 Top-Lay—Metals & Controls
 Torchmaster—Industrial Eng'g
 Torcrite—Cleveland Container
 Torque-Drive—Electro-Voice
 Totalume—Universal Match
 Touch-B-Matic—Automatic Radio
 Tracemeter—Hickok Electrical Instr.
 Trac-Tape—Tape Recording Appar.
 Tradio—Trad TV
 Tradivision—Trad TV
 Transir—Hoffman Radio
 Transell—Johns-Manville
 Tran-Cor—Armo Steel
 Transelox—Johns-Manville
 Transcrip-Tone—Permo
 Transalyzer—Kay Electric
 Transamp—Electronic Research
 Transfilter—Brush Electronics
 Transite—Johns-Manville
 Transkote—Panero-Mirrors
 Transmaster—Lysco Mfg.
 Transpac—Electronic Research
 Transpat—Standard Electronics
 Transverter—Hertner Electric
 Trans-Vac—Jackson Industries
 Trav-Electric—Terado
 Trav Tapes—Broadcast Equip. Spec.
 Treeco—Transformer & Elect. Spec.
 Triaxial—Jensen Mfg.
 Tribel—Nelson Vacuum Pump
 Trienco—Enthoven Solders
 Tri-Cor—Alpha Metals
 Tri-Flex—Redmond Co.
 Tri-R-Heat—P. Wall Mfg.
 Tri-Towers—Rostan
 Trim Trol—Albairon Accessories
 Trionized Air—Trion
 Trionode—Walkirt
 Tri-Plax—Sta-Warm Electric
 Trip-Lett—Triplet Electrical Instr.
 Tri-Plex—Jensen Mfg.
 Tri-Trans—Triplex Transformer
 Tropcaps—Micamold Radio
 Tropi-Tile—Tropicraft
 Trilogic—Pyle-National
 Trombone—Ward Products
 Tronox—T. C. Whenton Co.
 Trarac—Waldos Kohinor
 Tra-Brand—Carbonneau Ind
 Traecraft—Ed-Berl Prods
 Trae-Flange—American Brass
 Traflex—Metals & Controls
 Tra-Match—Quam-Nichols
 Trashade—Technic
 Tra-Ohm—Model Eng'g & Mfg.
 Tra-Rip—Whitney Blake
 Tra-Sonic—Stephens Mfg.
 Tratorq—Airdraulics Eng'r.
 Trylon—Wind Turbine
 T-35 Super-Sonax—Electro-Voice
 Tube Master—Precision Apparatus
 Tuck-Away—JFD Mfg.
 Tuf-On—Brooklyn Paint
 Tune-A-Scope—JFF Mfg.
 Tuneraster—Superex Electronics
 Tune-O-Matic—Electro-Voice
 Turbo—William Brand
 Turbolux—Wm. Brand
 Turbolene—Wm. Brand
 Turbolox—Wm. Brand
 Turbosil—Wm. Brand
 Turbotherm—Wm. Brand
 Turbothots—Wm. Brand
 Turbotaf—Wm. Brand
 Turbozone—Wm. Brand
 Turner-Reich—Gundlach Mfg.
 TV Servisat—Leo Electronic
 TV Tele-Clear—Meritz Chemical
 Tweezer-Weld—Federal Tool
 23-Clipper—Contralab
 Twilt—Electro-Voice
 Twinstar—Sound Apparatus
 Twist-Mount—Pyramid Elec.
 Twinstel—Telex
 Twin-Tilt—Electro-Voice
 Twistube—Fenton
 Twist-Lock—Harvey Habbell
 Twist-Lok—Sprague Electric
 Two-Timer—Vocaline Co. of Amer.
 U-Ask-It—Electronic Eng'g
 Uee-D-X—LaPointe Electronics
 Uti-Mite—Aladdin Radio Inds.
 Ultra—Kay Elec
 Ultra-Beam—Camburn
 Ultradrapt—Radio Merchandise Sales
 Ultra-Gen—Acar Instruments
 Ultrakote—C. W. Hayne Labs.
 Ultra-Linear—Aero Prods.
 Ultra-Matic—Radiart
 Ultrasonic—Panoramic Radio Prods.
 Ultra Stigmat—Gundlach Mfg.
 Ultratone—Audio Industries
 Ultratube—Plastoid
 Ultraverter—Blonder-Tongue Labs.
 UMG—Illinois Condenser
 UMP—Illinois Condenser
 UMS—Illinois Condenser
 UMT—Illinois Condenser
 Unbrako—Standard Pressed Steel
 Undark—U. S. Radlam
 Une Cap—United Electronic Mfg.
 Unesco—Western Mfg.
 Unibelt—Walisco
 Unibridge—Industrial Electronics
 Uni-Cast—Redmond
 Unicorn—United Condenser
 Uni-Core—Alpha Metals
 Uni-Crimp—H. B. Sherman Mfg.
 Unidyne—Shure Brothers
 Uni-Globe—Mikell Infra-Red
 Uniline—Cascade Research
 Uni-Lock Mevon Industries
 Unimatco—Calbest Eng'g & Electronics
 Unimatic—Unitek
 Unimax—W. L. Maxson
 Uniplug—C. J. Applegate
 Unipoint—Shure Bros.
 Uni-Rack—Alden Products
 Unirag—Universal Electronics
 Unisorb—Filters Co.
 Unit Breaker—Cutler-Hammer
 Unitrol—Cutler-Hammer
 Universal—Brush Electronics
 Universal—G. M. Giannini
 Universal—Mueller Electric
 Universal—Universal Microphone
 Universal Cap Nuts—Atlas E-E
 Universal Telegreader—Telecomputing
 Univerter—Boonton Radio
 Urbanette—Vidairo Electronic
 Usalite—Stapahoff Ceramic
 Usec—U. S. Eng'g
 UTC—United Transformer
 Utilicon—Diamond Power Spec.
 Utiliscope—Diamond Power Spec.
 Utone—Utah Radio Prods.
 VA—Varian Assoc.
 Vacorder—F. J. Stokes Mach.
 Vac-Trac—Washington Institute of Technology
 Vacuum Plate—Vacumet
 Valimitor—Electric Controller & Mfg.
 Valvesal—Richardson
 VAM—Video Accessory Mfg.
 Vamistore—Ruchelsass Labs.
 Vapormaster—Mfrs. Eng'g & Equip.
 Varc—Vapor Recovery Sys.
 Varfo—Varflex
 Varglas—Varflex
 Vari—Superex Electronics
 Variac—General Radio
 Variell—General Radio
 Variell—Superior Electric
 Varicon—Elco
 Varispeed—Audio Master
 Varitar—Par Products
 Variplotter—Electronic Assoc.
 Varitron—Photographic Prods.
 Vari-Tenna—Superex Electronics
 Varsity—Symphonie Radio
 Vascos—Mitchell Industries
 Variovit—Halliderson Transformer
 Vaw Meter—John Fluke Mfg.
 Veco—Victory Eng'g
 Vectolyzer—Advance Electronics
 Vectorline—Vectron
 Vee-D-X—La Pointe Electronics
 Vecco—Vacuum Electronic
 Vego—Victory Eng'g
 Veltetron—Packard-Bell
 Velometer—Illinois Testing Labs.
 Ventisel—Electronic Devices
 Vericor—Remington-Rand
 Vericon—Remington-Rand
 Vermiculite—Mica Fabricating
 Versacon—Radio Merchandise Sales
 Versatex—Shure Bros.
 Versa-Tool—Phillips Mfg.
 Versi-Mount—Radio Merchandise Sales
 Vertar—Par Products
 Vertical Drive—Shure Bros.
 Vibracals—Glass Fibers
 Vibralyzer—Kay Electric
 Vibracord—Motorola
 Vibrashock—Robinson Aviation
 Vibro Ground—Asoc. Research
 Vibromite—Brush Electronics
 Vibrotel—Asoc. Research
 Vico—Video Inds.
 Victor—Radio Corp. of Amer.
 Vitrolite—T-Bar-V Productions
 Video-Beam—Camburn
 Videofilm—General Precision Lab
 Videometer—Hickok Electrical Instr.
 Videoptics—Burke & James
 Videostigmat—Burke & James
 Videotron—National Union Radio
 Vidigage—Branson Instruments
 Viking—Forsberg Co., Jensen Mfg. E. F. Johnson
 Vinagex—Apex Coated Fabrics
 Vinex—Union Plastics
 Vpover—Radiart
 Visi-Wax—Magnaflux
 Visual Cast—Victorite Industries
 Visitrone—Randall
 Visulite—Kystone Electronics
 Vitamin Q—Sprague Electric
 Vitavox—British Industries
 Vitrohm—Ward Leonard Elec.
 Vitrotex—Anacoanda Wire & Cable
 Vitron—Glass Fibers
 Viz—Molded Insulation
 V-King—Walisco
 Vocal-Aire—Dilks
 Vocatron—Vocaline Co. of Amer.
 Vogellite—Ultra-Violet Prods.
 Vo-Glo—Ultra-Violet Prods.
 Voice Master—Magnetic Recording Ind.
 Volcano—Industrial Eng'g Prods.
 Voltage—Sittler Corp.
 Volt-A-Test—Sittler Corp.
 Voltbox—Sagerul Elec.
 Voltohmyst—Radio Corp. of America RCA Tube Dept.
 Voltostat—Industrial Transformer
 Voyager—Fidelity Amplifier
 Voyager—Magnecord, Inc.
 VSWR—M. C. Jones Electronics
 V-Test-It—Mercury Electro Prods
 V-2—Froteo
 VTP—Vacuum Tube Products
 Vu-Cyte—Charles Besler Co.
 Vu-Cranb—Charles Besler Co.
 Vulcoloc—Continental-Diamond Fibre Co.
 Vul-Cot—National Vulcanized Fibre Corp.
 Vu-Lyte—Besler
 Vu-Yer—Eidico of New York, Inc.
 Vyco—Corning Glass Works
 Walkie-Recordall—Miles Reproducer
 Wall-O-Matic—J.P. Seeburg Corp.
 Wall-Thru—Mosley Electronics, Inc.
 Walscolab—Walisco
 Wally—P. Wall
 Watchmaster—American Time Prods.
 Waterseal—Rubber Assoc.
 Watterson—J. W. Davis
 Waveflex—Titelux
 Wavometer—Micrometrical Mfg.
 Weather Master—Jensen Mfg.
 Webcor—Webster-Chicago
 Wedco—Wicks Eng'g & Const.
 Wedglo—Insulation Mfrs.
 Wee-Pee-Wee Clip—Mueller Elec.
 Weldpower—Raytheon Mfg.
 Weldrawn—Superior Tube
 Weldmaster—Unitek
 Weldwood—U. S. Plywood
 Wempy—Westfield Metal Prods.
 Westco—West Coast Elec.
 West-Cap—San Fernando Elec.
 Westco—Western Gold & Platinum

BRAND and TRADE NAME INDEX

Westach—Westberg Mfg. Westbooster—Western Mfg. Westenna—Western Mfg. Western Pacific—Birdsell Mfg. West Test Set—Automatic Elec Whale—Forsberg Mfg. Wharfedale—British Industries Whetha-Tube—Wheatland Tube White Flash—Enthoven Solders Whiteprinter—Peck & Harvey Whiz-Saw—Forsberg Mfg.	Widney-Dorlet—British Inds. Wilco—H. A. Wilson Wilcolec—Wilcox Elec. Wilkor—Aerovox Winco—Hudson Wire Winco—Wincharger Wipe—Merix Chem. Wire Lube—Ideal Inds Wirz—Ohm—Phaestron Wirenuts—Ideal Industries Wire-Thread—Richard Bird	Wirewall—Ohmite Mfg. Wissh—Workman TV Wonderflux—American Silver Wood-Ray—Woodwelding Wrometer—Stewart Instrument Wyco—Wyzenbeek & Staff Wyd-Angle—Ess Instr.	X-Tra Fast—E. I. DuPont de Nemours X-Var—Fidelity Chemical Xy Systems—Stromberg-Carlson Yok-Ex—Vidair Electronics Mfg. Yvar—Paillard Prods. Zak—U. M. & F. Mfg.	Z-Angle Meter—Technology Instr. Zee—National Electric Prods. Zephy—Sound Devices Zero-Max—Rvco Zig-Zag—Trio Mfg. Zinktron—Constad Labs. Z'pohm—Muter Co. Z'ppr—Centralab Zoom-Up—Camburn Zoom-Up—JFD Mfg. Zyglo—Magnaflux
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ELECTRONIC INDUSTRIES DIRECTORY

Consulting Engineers

A complete alphabetical listing of individual engineers and engineering companies specializing in consulting services for the radio-TV-electronic and allied fields. The particular specialty of each engineer is indicated by a code letter following his name and address.

Broadcast	A
Communications	B
Component Manufacturing	C
Electronic Control Systems	D
Equipment Manufacturing	E
Industrial Electronics	F
Medical Electronics	G
Recording, Audio	H

Adair G P 1610 I St N W Washington D C EX 3-1230A
 Adler Communication Labs 1 LeFevre Lane New Rochelle N Y 6-1620 A,B,E
 Amsol L R 3709 Carpenter Ave Des Moines Iowa 7292 A
 Alford Andrew 299 Atlantic Ave Boston Mass HA 6-2338-2466 B
 Anderson-Nichols 150 Causeway St Boston 14 Mass RI 2-3400 C
 Aster A K 48 Beech St E Orange N J D,F
 Bailey Corp Arnold B P O Box 84 Manchester N H E
 Behar M F 245 Melwood St Pittsburgh 13 Pa SC 1-1100 C,D,E,F
 Bennis Jr Wm E 3738 Kanawha St N W Washington D C Em 2-8071 A
 Bernard Assoc 5010 Sunset Blvd Hollywood 27 Calif No-2-6715 A
 Bird J R Box 1032 Oroville, Cal A
 Blair W W 24 S Front St Wormleysburg Pa A,B,H
 Brown Duncan & Porter P O Box 9296 Raleigh N Car A,B,H
 Brown R A 1312 Richmond St Joliet Ill B,D,E,F
 Brown W J 71 Gurler Rd Stamford Conn D,F,H
 Brownell H R 188 W 4 St New York 14 N Y CH 2-4208 C,D,E,F
 Bogan & Associates C W 1204 Wisconsin Ave N W Washington 7 D C AD 4-3868 E
 Bumstead Ralph W 624 Maple St Westfield N J D,F,H
 Burwen Richard S 17 Shefield Rd Melrose 76 Mass A,E,H
 Chapp S 39 Maple Ave Upper Darby Pa B,D,F,G
 Collins Jack 9025 N Pelham Pkwy Milwaukee 11. Wisc BR 2-5163 E,F
 Commercial Radio Equip 1319 F St N W Washington D C DI-7-1319 A
 Craven Lohnes & Culver 1242 Munsey Bldg Washington 4 D C DI 7-8215 A
 Cullum Jr A Earl Highland Park Village Dallas 5 Texas JU 6108 A,B
 Davis George C 501 Munsey Bldg Washington 4 D C ST 3-0111 A
 DeRyder H 610 Bloomfield Ave Bloomfield N J BL 2-2665 E
 Dixie Service P O Box 1435 Anniston Ala 5011-J A,B,H
 Doeliner LeRoy Maple Ave New City N Y D,F,H
 Droke O S P O Box 1387 Shreveport 92 La 2-8711 A
 Duschinsky W J Raymond & Rado 101 Park Ave New York N Y MU 3-5797 A,B
 du Trell & Associates L J 202 Homedale Ave New Orleans 24 La AU 3525 A,H
 Ebel James A 212 S Jefferson St Peoria Ill 6-0711 A
 Edelman Samuel 315 E 77 St New York 21 N Y RH 4-6762 H,C,E,F
 Edgerton, Gerneshausen & Grier 160 Brookline Ave Boston 15 Mass CO 7-3520 E
 Ehrlich C W 130 W 12 St New York N Y OR 5-2897 A,C,D
 Fein Mitchell 202 Saddlewood Drive Hillsdale N J RE 4-6815 C, E, F

Frazier H S 708 Bond Bldg Washington 5 D C NA 8-2173 A
 Frommer J C 1525 Teakwood Ave Cincinnati 24 Ohio KI 8730 D,F
 Galanty H E 36 Montgomery Rd Livingston N J F
 Gallay Harris 60 Perry St Belleville 9 N J
 Garrison M M 1519 Connecticut Ave N W Washington D C AD-2-2261 A
 Goutney & Jones 1052 Warner Bldg Washington 4 D C NA 8-7757 AB
 Gellerup D W 5437 N Santa Monica Blvd Milwaukee Wis WO-5172 A
 Gillett & Associates Glenn D 982 National Press Bldg Washington 4 D C NA 8-3373 A,B,G
 Godley Co Paul P O Box J Upper Montclair N J Mo 3-3000 A,B,D,F
 Goldsmith A N 597 5 Ave New York 17 N Y PL 3-4150 A
 Goldwater F J 572 Broome St New York 13 N Y CH 2-1312 D,F,G
 Gordon H L Warner Bldg Washington 4 D C NA 8-2497 A,B,D,F
 Gray C M P O Box 602 Birmingham Ala 2-3570 A
 Grimwood Co Fred B 2025 Ry Exchange Bldg St Louis 1 Mo Ch 4977 A,B
 Hammett Robert L 821 Market St San Francisco 3 Calif SU 1-7545 A
 Hansen E H P O Box 6 Balboa Island Calif B,H
 Hartong J C Box 466 Beckley W Va B,D,F
 Hatfield J B 936 35 Ave Seattle 22 Wash FR 7860 A
 Hecht Bernard 5410 Wilshire Blvd Los Angeles 36 Calif
 Heffelfinger J B 815 E 83 St Kansas City 10 Mo HI 7010 A,B
 Higgs R C 2032 Indianola Ave Columbus 1 Ohio A
 Hogan J V L 155 Perry St New York 14 N Y CH 2-7855 A,B
 Hoisington D B 150 Ford Rd Carmel Valley Calif A,B,D,F
 Holey W J 1146 Briarcliff Pl N E Atlanta Ga AT 3328 A
 Hoopes P R 12 5 12 St Philadelphia Pa WA 2-1731 C,E
 Hughes Eng's John G 29-10 Northern Blvd Long Island City 1 N Y ST-4-1874 E
 Hutcherson G C Box 32 Arlington Texas A
 Isberg Eng's Labs 2001 Barbara Drive Palo Alto Calif DA-3-1237 A
 Jacker E W Church Rd Elmhurst Ill EL 3610 A,B,F,H
 Jansky & Bailey Inc 1339 Wisconsin Ave N W Washington 7 D C AD 4-2414 A,B
 Johnson J K 511 5 Ave New York 17 N Y MU 7-5062 B,D
 Kahn L R 22 Pine St Freeport N Y B,H
 Kean Walter F 1 Riverside Rd Riverside Ill 7-2153 A,F
 Keel J J 1121 E Capitol St Washington 3 D C LI 4-5131 A,B
 Keim L B 74-12 35th Ave Jackson Hts 72 N Y C.G.H
 Kinn T P 20 Oaklee Village Baltimore 29 Md F
 Kohlhagen Walter 818 Oakley Ave Elgin Ill F
 Kramer A 422 Washington Bldg Washington 5 D C A,B
 Kunins M K 1730 Popham Ave New York 53 N Y LU 7-0024 D,F
 Little Inc A D 30 Memorial Dr Cambridge Mass D,F,G
 Lubeko Harry R 2443 Creston Way Hollywood 28 Calif 9-3266 A,D,E,H
 Lyon H H 4004 Jefferson St Hyattsville Md A,B
 Mathematical Computing Service 67-24 211 St Bayside Queens NY BA-4-6184 E
 May Russell P 1422 F St N W Washington 4 D C RE 7-3984 A,B
 McCachren Winfield Scott 2404 Columbia Pike Arlington Va JA 8-9096 A
 McIntosh & Inglis 777 14 St N W Washington 5 D C ME 8-4477 A,B,F

McNary J C National Press Bldg Washington D C DI 7-1205 A
 McNeal J D 794 Quinpiac Ave New Haven Conn HO 7-7012 D,F
 McQuillan John P O Box 132 Dundee Ill F
 Meltzer H S 192-45B-71 Crescent Fresh Meadows 65 LI N Y DL 8-4290 E
 Meyers J C 1056 Sheridan Ave New York 56 N Y H
 Microwave Services Inc 45 Rockefeller Plaza New York 20 N Y CI 7-4953 B
 Morefield Co John A Camp Hill, Pa B
 Mullaney John H 2002 P St N W Washington D C AD 6393 A,B
 Murray A F 4707 Windom Pl N W Washington D C OR 4841 A,B
 Nihirk T E 2020 E Villa St Pasadena 8 Calif B,F
 O'Brien E J 2204 Floral Dr Whittier Calif B
 Page, Creutz, Garrison & Waldschmitt 710 14th St NW Washington 5 D C EX-3-5670 A
 Parisier M L 1475 Broadway New York 23 N Y LO 4-5434 B
 Phillips A J 510 E 20 St New York 9 N Y GR 7-2436 B,F
 Plotts Ellery L 209 Jason St Arlington 74 Mass AR-5-8220-R E
 Pollack Dale Dayton Rd Waterford Conn A
 Pollak M J 1115 Michigan Ave Evanston Ill AM 2-4341 C,D,E,F
 Polydoroff W J 927 15 St N W Washington 5 D C NA 8-6724 B,C,D
 Powers William D P O Box 93 St Andrew Station Panama City Fla
 Racker Joseph 140 Nassau St New York 38 N Y WO 4-1463 B,E,G,H
 Radio Eng'g Co 1355 Market St San Francisco Calif MA 1-8173 A,H
 Raesler J L 93 Phelps Rd Manchester Conn 2-0949 D,E,F
 Ray G W 210 Anson Stratford Conn 7-2465 A
 Richardson William E 1935 S W Moss St Portland 1 Ore, A,B
 Ring & Co A D Munsey Bldg Washington 4 D C RE 7-2347 A,B
 Robinson S J 621 Jones Way Sacramento 18 Calif B,D,F
 Rothrock H B 13 Murray Ct Bedford Ind A,B
 Saxon Merl P O Box 575 Lufkin Texas 3-4242 A
 Selby H E 619 68 St Brooklyn 20 N Y SH 5-5332 B,C
 Sherwood R H 230 Park Ave New York 17 N Y LE 2-9004 D,F,G,H
 Silfman & Associates 1405 G St N W Washington 5 D C A
 Singleton Harold C 4488 S W Council Crest Dr Portland 1 Ore BE 1201 A
 Smeby L 1311 G St N W Washington D C EX-3-8073 A
 Smith Carl E 4900 Euclid Ave Cleveland 3 Ohio EX 1-5008 A,B,F
 Smith G D 136 Liberty St New York 6 N Y RE 2-6688 B
 Snow W B 2179 Mandeville Canyon Rd Los Angeles 49 Calif AB 7-9139 A
 Sterling Electronic Corp 126 W 22 St New York 11 N Y CH-2-4588 C
 Stone C G 304 S 1 Ave Mt Vernon N Y E
 Strain C E 1261 Niles Ave N W Atlanta Ga BE 5164 A
 Swanson E H 15 Cleveland Ave Glen Head N Y GL 4-6324 A,B,D,F
 Swantek J J 3132 Glacier Way Ann Arbor Mich A,B,D,F,H
 Swarthe Eric P O Box 212 El Segundo Calif D,F,G
 Technical Operations Inc 6 Schouler Ct Arlington 74 Mass AR 5-8383
 Toepfen M K P O Box 4726 Los Angeles Calif B
 Toth A F 38 Park Row New York 7 N Y CO 7-8952 B
 Turner R P 919 E 116 Pl Los Angeles 59 Calif A,F
 Uglow Kenneth M 1507 M St N W Washington D C AD 4-5555 B
 Universal Research Labs 2655 Van Ness Ave San Francisco 9 Calif PR 5-5833 A,B,H
 Vandivero Cohen & Wearn 1420 New York Ave N W Washington 5 D C NA 2698 A,B
 Watson Raymond C Jr P O Box 1335 Anniston Ala
 Weldon & Carr 1605 Conn Ave N W Washington 5 D C MI 4151 A,B,H
 Wellman Bertram 586 Beaver Pond Rd Lincoln Mass C,D,E,F,G
 Whalley W B 201-10 28 Ave Bayside 60 N Y B,D
 Williams E M 157 S Linden Ave Pittsburgh 8 Pa MC 1-3944 B,D,F
 Williams Martin R 7401 E 14 St Indianapolis 19 Ind BL-0388 A,B,D,F,G
 Williams N 20 Algoma Blvd Oshkosh Wisc BL-22 A,E
 Wilmette Inc R M 737 Warner Bldg Washington 5 D C A,B,F
 Wortman Leon 209-A Haddon Hills Haddonfield N J A,H
 Zand S J 410 Shorehaven Rd Erie Pa F

Engineering Societies

Alphabetical listing of professional societies, industry associations and technical organizations serving the radio-TV-electronic and allied fields

Acoustical Society of America, 57 E. 55 St., New York, N. Y.
 American Assoc. of Engineers, 8 S. Michigan Ave., Chicago 3, Ill.
 American Institute of Electrical Engineers, 33 W. 39 St., New York, N. Y.
 American Institute of Physics, 57 E. 55 St., New York, N. Y.
 American Physical Society Columbia Univ., Broadway & 116 St., New York, N. Y.
 American Radio Relay League, 38 La Salle Rd., W. Hartford, Conn.
 American Society for Quality Control, 70 E. 45 St., New York, N. Y.
 American Society for Mechanical Engrs., 33 W. 39 St., New York, N. Y.
 American Society for Testing Materials, 1916 Race St., Philadelphia 3, Pa.
 American Soc. of Tool Engineers, 10700 Puritan Ave., Detroit 38, Mich.
 American Standards Ass'n., 80 E. 45 St., New York, N. Y.
 American TV Society, 52 Vanderbilt Ave., New York 17, N. Y.
 American Women in Radio & TV, 70 E. 45 St., New York 17, N. Y.
 Antenna Mfrs. Ass'n., 36 Madison Ave., New York 17, N. Y.
 Armed Forces Communications Ass'n., 1624 Eye St., N. W., Washington 6, D. C.
 Associated Police Communication Officers, 1428 W. 46 St., Los Angeles 37, Calif.
 Ass'n. of Electronic Parts & Equip. Mfrs., 11 S. LaSalle St., Chicago 3, Ill.
 Ass'n. of Federal Communications Consulting Engrs., 1216 Wyatt Bldg., Washington 5, D. C.
 Ass'n. for Computing Machinery, c/o E. Bronberg, Sec'y., Inst. of Math. & Mech., N.Y.U., 45 Fourth Ave., New York, N. Y.

Audio Eng'g Society, Box F, Oceanside, N. Y.
 Electrochemical Society, 235 W. 102 St., New York, N. Y.
 Electronic Mfrs. Ass'n., 598 Madison Ave., New York, N. Y.
 Electronic Parts Mfrs. Ass'n., 430 Wyatt Bldg., Washington 5, D. C.
 Engineers Joint Council, 29 W. 39 St., New York 18, N. Y.
 Federal Communications Bar Ass'n., Saler Bldg., Washington 4, D. C.
 Hi-Fidelity Inst. of the Electronics Industries, 1 N. LaSalle St., Chicago 2, Ill.
 Institute of Aeronautical Sciences, 2 E. 64 St., New York, N. Y.
 Institute of Radio Engineers, 1 E. 79 St., New York 21, N. Y.
 Instrument Society of America, 1319 Allegheny Ave., Pittsburgh 33, Pa.
 Joint Committee on Educational Television, 1785 Massachusetts Ave., N. W., Washington 6, D. C.
 Joint Electron Tube Eng'g Council of RETMA and NEMA, 500 5 Ave., New York, N. Y.
 Joint Technical Advisory Committee, 1 E. 79 St., New York 21, N. Y.
 Magnetic Recording Industry Assoc., Rm. 1011, 444 Madison Ave., New York 22, N. Y.
 National Alliance of TV & Electronic Service Ass'ns., 5908 S. Troy Ave., Chicago 29, Ill.
 National Appliance and Radio-TV Dealers Assoc., 1141 Merchandise Mart, Chicago 54, Ill.
 National Ass'n. of Electrical Distributors, 290 Madison Ave., New York, N. Y.
 National Assoc. of Music Merchants, 28 E. Jackson Blvd., Chicago 4, Ill.

National Ass'n. of Radio & TV Broadcasters, 1771 N. St., N. W., Washington 6, D. C.
 National Audio-Visual Ass'n., 845 Chicago Ave., Evanston, Ill.
 National Community TV Ass'n., P.O. Box 71, Palmerton, Pa.
 National Citizens Committee for Educational Television, 1200 18 St., Washington, D. C.
 National Conference on Airborne Electronics, Wright Patterson AF Base, Dayton, Ohio.
 National Electrical Mfrs. Ass'n., 155 E. 44 St., New York 17, N. Y.
 National Electronic Distributors Ass'n., 221 N. LaSalle St., Chicago 1, Ill.
 N. Y. State Society of Professional Engrs., 1941 Grand Cent. Term., New York, N. Y.
 National Electronics Conference, 852 E. 83 St., Chicago 19, Ill.
 National Society of Professional Engrs., 1121 15 St., Washington 5, D. C.
 Phonograph Mfrs. Ass'n., 277 Broadway, New York 7, N. Y.
 Radio Club of America, 11 W. 42 St., New York 17, N. Y.
 Radar-Radio Industries of Chicago, Inc., 1 N. LaSalle St., Chicago 2, Ill.
 Radio Pioneers, 580 Fifth Ave., New York 18, N. Y.
 Radio-TV Mfrs. Ass'n., 777 14 St., N. W., Washington 5, D. C.
 Radio & TV Executives Soc., 420 Lexington Ave., New York 17, N. Y.
 Record Industry Ass'n. of America, 270 Park Ave., New York, N. Y.
 Representatives of Electronic Products Mfrs., 600 S. Mich. Ave., Chicago 5, Ill.
 Scientific Apparatus Mfrs. Ass'n., 20 N. Wacker Drive, Chicago 6, Ill.
 Society of Motion Picture & Television Engrs., 40 W. 40 St., New York 18, N. Y.
 Society of Plastic Engrs., 409 Security Bank Bldg., Athens, Ohio.
 Society of the Plastic Industry, 67 W. 44 St., New York, N. Y.
 Ultra High Frequency TV Assoc., 400 DeSales Bldg., Washington 6, D. C.
 West Coast Electronic Mfrs. Ass'n., 4054 Ocean Park Ave., Venice, Calif.

ELECTRONIC INDUSTRIES DIRECTORY

Distributors

These are the names and addresses of organizations handling the distribution of radio-TV-electronic parts and equipment in the United States. Listings are alphabetical under states and cities. Asterisk (*) indicates membership in National Electronic Distributors Association (NEDA).

ALABAMA

ANNISTON
 Radio Dist & Supply 109 W 10th St 4010
BESSEMER
 Bessemer Radio Supply 114 N 20 St 5-9573
BIRMINGHAM
 Ach Radio Supply 3101 4th Ave E 4-0588
 Air Engineers 1529 2 Ave 54-3431
 Auto Service 1916 4 Ave S 3-4102
 Clark & Jones 1601 2 Ave S 4-4529
 *Clary Co J W 1713 2 Ave S 4-2488
 Electric Constructors 3000 3rd S 3-3243
 Forbes Distr 2600 3 Ave S 3-4105
 Graybar Elec 709 1 Ave N 4-1861
 Lewis Supply Co 1025 N 19 St 7-1148
 Long Lewis Hous 840 4th Ave
 McDavid & Co R P 1430 2 Ave N 7-7165
 Radio Parts & Equip 1909 3 Ave N 4-4405
 *Reid Distributing 1724 5 Ave N 4-8652
 Steel City Supply 600 N 7 St 4-0433
DECATUR
 Radio & Television Supply 415 Bank 2231
MOBILE
 Hand Supply Co 705 S Dates 4-3300
 Signal Supply Co 248 E Troy 4-0360
MOBILE
 Southeastern Radio Parts 120 Chestnut St 6-9761
ASPER
 Ramon Radio Supply 20 St & 2 Ave 2-5321

MOBILE

Emrich Radio Supply 656 Dauphin 8-2596
 Forbes Electronic Distributors 57 N Washington
 General Elec 54 Estava St 8-4571
 Graybar Elec 701 N Joachim St
 Harris Supply 10 N Water 2-0541
 McDavid & Co 120 Water St 8-1691
 McGowan-Lyons Water & St Louis Sts 2-8721
 *Neison Radio 451 St Louis 2-0411
 Radio Labs 111 N Royal 2-1715

MONTGOMERY

Nolin-Melnlis 205 Commerce 7323
 Southeastern Radio Parts 224 N Court St 3-6488
 Teague Hardware PO Box 240 2-0541
 Walther Bros 2245 W Fairview Ave
TUSCALOOSA
 *Allen & Jemison Co 8-2781

ARIZONA

PHOENIX

Arcal Radio Parts 532 W Van Buren Al 3-4023
 Dalis Bros 528 W Jefferson St
 Electrical Comm 202 E Fillmore Al 2-8248
 Electrical Equip 1 Ave of Madison 3-3186
 General Electric 441 W Madison 4-1116
 Gough Industries 917 W Madison See Los Angeles
 Graybar Electric 434 W Madison 3-6131
 Mathias & Co Albert Hdgrs El Paso Tex
 Midland Specialty 233 S 11 Ave AL 4-7351

Momsen-Dunnegan-Ryan 11 E Buchanan
 *Radio Parts of Ariz 214 S 11 Ave Al 8-6476
 Radio Spec & Appl 305 E Roosevelt AL 4-7184
 Redmond Supply J F 625 W Madison
 Southwest Wholesale Radio 126 S 2 St AL 2-6539
 Western Radio & Eng 1915 E Wash 4-7084
 Westinghouse Elec 110 N 21 4-9276
TUCSON
 Art Electronic Supply 145 S Park 4-4413
 General Electric 2 E 6 St 3-4773
 *Elliott Electronics 418 N 1 Ave 4-2473
 *Standard Radio Parts 218 N 1 Ave

ARKANSAS

BLYTHEVILLE
 Blytheville Radio Supply 112 S 1 St 4-467
FORT SMITH
 Carter Electronic 805 N 11 St 3-4129
 Interstate Electric Hdgrs Shreveport La
 *Wise Radio Supply 1001 Towson 3-8926
LITTLE ROCK
 Carlton Wholesale 109 W 9 St 27-9248
 Connerly Radio Distributors 1201 E 2 St FA 2-7917
 General Electric 601 E Markham 5-5328
 Graybar Electric 417 Byrd St ST 5-1246
 Frank Lyon 208 E Markham St
 Southern Radio 1419 Main St FA 2-4198
 Thurman Supply 115 W 11 St 7308
 Westinghouse Elec 119 Sherman 2-5154
 *White Radio Supply 1222 Main FR 6-1391
NORTH LITTLE ROCK
 Rye Wholesale 117 W Washington
PARAGOULD
 Martin Wholesale 1207 W Kings Highway CE 6-4049
TEXARKANA
 Interstate Electric Co Hdgrs Shreveport La
 *Lavender Radio Supply 520 E 4 St 2-4195

CALIFORNIA

ALHAMBRA
 *Coast Electronic Supply 527 W Main Co 3-4049
BAKERSFIELD
 Arbuckle J C 500 E 19 St 5-5816 Hdgrs Fresno
 General Electric 1134 33 St 5-5514
 Gough Industries 3125 Jewett St
 Valley Radio Supply 716 Baker St FA 7-8831
BERKELEY
 Pacific Radio Supply 1940 Ashby Ave TH 3-8900

DISTRIBUTORS SERVING the ELECTRONIC INDUSTRIES

- BURBANK**
Dean Co F S 1500 W Burbank Ch 8-4408 Hqrs
Long Beach
Pacific Radio Exch 4101 W Burbank Hqrs Moly-wood
Valley Electronic Supply 1302 N Magnolia Blvd
- CATHEDRAL CITY**
Wholesale Electronic Specialists 537 Broadway
- CHICO**
Radio Television Products 738 Cherry Fl 2-8140
- COMPTON**
Electronic Parts Dists 1508 E Compton
- EL CENTRO**
Ainza-Huffman Dists 1125 W Main 2307
- EL MONTE**
Kimball-Stark 713 S Tyler FO 0-2594
- EMERYVILLE**
General Electric Supply 5400 Halls St MA 7141
- EUREKA**
Commercial Radio & Elec 317 W 7 St HI 2-4179
- FRESNO**
Arbuckle J C 2349 Kern 4-6555
Billings Wholesale Radio 260 Falton St
DeJarnatt Whsle B J 223 Falton 2-2153
Dooly Harry 725 L St 2-4108
General Elec Supply 1234 O St 4-4746
Graybar Electric 101 Van Ness Ave 2-4175
Kierulf & Co 725 L St Hqrs Los Angeles
Kinney & Faust 1740 Van Ness 6-8321
Meyberg Co L J 2930 Botler Hqrs San Francisco
Ports Mfg Co 3265 Belmont 3-6728
Schlefer Sound 2121 Blackstone 7-7234
Westinghouse Elec 2608 Calif 4-5091
- FULLERTON**
United Radio & Electr 122 W Pavana St
- GLENDALE**
Hagerly Radio 6826 San Fernando Rd CH 8-2453
*Weatherford Co R V 6921 San Fernando RO 9-2281
- HOLLYWOOD**
Hollywood Radio 5606 Hollywood HO 4-8321
Pacific Radio Exch 1407 Cahuenga HW 2-1393
Yale Radio Elec 6616 Sunset Blvd GL 4169
- HUNTINGTON**
Martin Dist Co 2475 E Florence Ave
- INGLEWOOD**
Acron Radio 599 S La Brea BR 8-5344
- LONG BEACH**
Dean Co F S 969 American 6-5281
General Electric Co 840 W 12 St 68-8419
Gough Industries 838W12 Hqrs Los Angeles
Graybar Electric 800 W 16 St 70-2911
Kierulf & Co 1760 Pacific Ave 6-8268
Ley Co Elwyn W 5550 Dairy Ave 20-5444
Lynde Electronics 1526 E 4 St 7-4807
Radio & TV Equip 2227 Pacific Hqrs Santa Ana
*Scott Radio Supply 266 Alamosa 7-8629
Waller Inc H T 645 W 15 St 35-4844
Westinghouse Elec Supply 938 Pine Ave
- LOS ANGELES**
Allied Radio Supply 7319 S Normandie Ave PL 2-3134
Bell Radio Supply 1311 W Florence Ave PL 2-7191
Calif Electronic Supply 11801 W Pico Blvd BR 2-2126
Ceazan J N Co 3535 S Broadway AD 1-9133
Dunkle Radio Parts 2506 W 8 St
*Federated Purchasers 911 S Grand TR 1761
Figart's Radio 6320 Comm Sloat Dr YO 6218
General Elec Supply 700 Turner St MA 7141
Gorsman Dist 414 S Western DU 8-2238
G.L. Electronics 905 S Vermont DU 7-5104
Gough Industries 560 S Mission Rd MA 6-2474
Graybar Electric 210 Anderson AN 3-7282
Henderson Co 628 N Alvarado DU 2-8301
Henry Radio Shop 11240 W Olympic Blvd BR 2-1440
Hollywood Electronics 7460 Wilrose Ave WE 3-8208
Kierulf Electronics 820 W Olympic RI 7-0271
Los Angeles Radio 10215 Venice VE 8-3177
Martin Dist Co 2475 E Florence LO 5-7111
Winthorne Music 2920 W Pico Blvd RE 4-2177
National TV Supply 4032 S Figueroa AD 3-8058
Olympic Elec 1440 W Olympic DU 8-2233
Pacific Radio Exch 1407 Cahuenga Blvd HU 2-1393
Pacific Television 4032 S Figueroa AD 3-8058
*Papel Bros 2605 E 4 St AN 2-5151
Quality Dist 1235 E Olympic Blvd TR 9761
*Radio Equip Dist 1340 S Olive St PR 9151
Radio Parts Sales 5220 S Vermont TW 9178
*Radio Prod Sales 1501 S Hill PR 7471
Radio Spec 1956 S Figueroa PR 7271
Radio TV Sup 341 W 18 St RI 9131
Ravenscraft Co 2320 S Hill PR 1317
Shelley Radio 2008 Westwood AR 7-6741
United Radio & Elec 1924 S Grand RI 7-0441
*Univ Radio Sup 1729 S Los Angeles PR 5241
Victor Distr Co 2027 S Figueroa RI 7-4457
Westinghouse Elec Sup 905 E 2 MA 9-4161
Wholesale Radio & TV Sup 4305 S Figueroa ST AD 3-8171
Yale Radio Electric 6616 Sunset Blvd GL 4169
- MARYSVILLE**
*Danlap Whsle Radio 826 5 St Hqrs Stockton
- MAYWOOD**
Kierulf 605B Walker Ave LO 5-5461
- MODESTO**
Danlap Whsle Radio 1216 K St Hqrs Stockton
Pacific Teletronic & Radio Sup 417 7 St 3-7751
- NORTH HOLLYWOOD**
Ilycor Sales 11423 Vanowen St
N Hollywood Radio 4212 Lankershim Blvd St 7-3063
- OAKLAND**
Brill Co W D 198 10 St TE 2-6100
Cass Altschuler Co 603B Telegraph Ave OL 3-7557
Electric Supply 140 11 St
*Elmar Electronics 140 11 St HI 4-7011
- Graybar Elec 1911 Union St GL 1-5451
*Millers Radio & TV 336 E 8 St TW 3-3848
Raycraft Co 568 3 St TW 3-9698
Wenger Co E C 1450 Harrison GL 1-1020
Westinghouse Elec 711 E 8 TE 4-9900
- PALO ALTO**
Zack Radio 225 Hamilton DA 5-5678 Hqrs
San Francisco
- PASADENA**
Dow Radio 1759 E Colorado RY 1-6683
Electronic Supply 2615 E Foothill RY 1-7188
Empira Electronic Dis 37 E Union St RY 1-7671
- POMONA**
Anderson-Magee 936 E Holt LY 9-2650
- REDWOOD CITY**
Television-Radio Supply 415 Lathrop St Hqrs
San Francisco
- RICHMOND**
Millers Radio & TV 319 37 St BE 5-4424 Hqrs
Oakland
- RIVERSIDE**
Electronic Supply 2486 Balboa St 8420
Massey's Radio Supply 2992 8 St
- SACRAMENTO**
Broil-Parks 2225 19 St GI 2-2983
Brown Co C 1714 10 St GI 3-5931
Capitol Electronics 1714 10 St GI 3-5931
*Danlap Whsle 1628 "S" St GI 2-1031 Hqrs
Stockton
General Elec Supply 1131 "S" St GI 3-9001
Graybar Electric 1900 14 St GI 2-8976
*Komp Co E M 1115 N St GI 3-4668
Radio Television Prod 2012 19 St GI 2-7691
*Sacramento Electronics 1219 "S" St GI 2-7679
Westinghouse Elec 1730 14 St GI 3-6525
- SALINAS**
Peninsula TV & Radio 42 W Gablan 2-6503
- SAN BERNARDINO**
Arrowhead Radio & Television 1212 D St 2-5581
Electronic Equip 1123 W Base Line
Featherstone Radio & TV 1010 E St 81-1306
General Elec Supply 485 S "H" St
Gough Industries PO Box 222 Hqrs Los Angeles
Graybar Electric 655 S "H" St
HIFI Supply 418 Baseline 2-5181
*Inland Electronic Supply 843 Colton Ave 6-5571
Kierulf & Co 1123 W Base Line Hqrs Los Angeles
- SAN DIEGO**
Electric Supplies Dist 435 2 Ave
Electronic Equip Dist 140 B St BE 2-3155
General Elec Supply 668 3 Ave FR 9-0271
Gough Industries 3255 S Ave WO 0659 Hqrs
Los Angeles
Graybar Electric 720 State St FR 1361
Kierulf & Co 2426 4th Ave
Radio Parts Co 2060 India BE 9-9361
Shanks & Wright 2045 Kettner F BE 9-0176
Silvergate Radio Supply 2361 India FR 9-6125
Western Radio & TV 1415 India St FR 0361
- SAN FRANCISCO**
*Aasoe Radio Distr 1251 Folsom St HE 1-0212
*Brown Co C 61 9 St MA 1-7000
Century Distr 1111 Front St YU 2-1480
Eis-Mohls & Cairns 551 Mission St EX 2-0432
General Electric Supply 1201 Bryant St UN 3-4000
Graybar Electric 1750 Alameda St MA 1-5131
Kamper & Barrett 1850 Miss UN 3-3080
*Meyberg Co L J 39 Gough St MA 1-3400
Offenbach & Roman 1564 Market St KL 2-2100
*Pacific Whsle 1850 Mission St UN 1-4843
Pogby Co G M 1201 Howard St KL 2-3488
Radio Parts Supply 281 9 St MA 1-0552
*San Francisco Radio 1284 Market UN 3-6000
*Smith & Crawford 789 Stevenson St UN 3-2045
Tel-Radio Supply 408 Market UN 2-2898
Tilton Industries 1850 Mission St UN 1-4843
Westinghouse Elec 201 Petrows St UN 1-5051
*Wholesale Radio 140 9 St HE 1-3680
*Zack Radio Supply 1424 Market MA 1-1424
- SAN JOSE**
Peninsula TV & Radio 881 S 1 St CY 4-8781
*Quemont Inc Frank 161 W San Fernando St
CY 4-0464
- SAN LEANDRO**
Styles & Engleman 2255 Bancroft Ave LO 9-9433
- SAN RAFAEL**
Abbett Co E B 345 Francisco GL 3-1130
- SANTA ANA**
Graybar Electric 301 French St
Murley Electronics 1434 S Main KI 3-9237
Radio & TV 207 Oak KI 2-6741
- SANTA BARBARA**
Channel Radio Supply 523 Anacapa 2-3429
Gough Industries 404 State St Hqrs Los Angeles
- SANTA MONICA**
Santa Monica Radio 117 Santa Monica EX 3-8231
- SANTA ROSA**
Santa Rosa Electro 205 Sebastopol 4486-W
- SHERMAN OAKS**
Oak Radio Supply 13454 Ventura ST 7-6666
- SOUTH GATE**
Mae's Radio Supply 8320 Long Beach KI 4111
- STOCKTON**
DeJarnatt Whsle B J 515 N Hunter Hqrs Fresno
*Danlap Whsle Radio 27 N Grant HO 6-7907
Komp Co E M 50 N Wilson Way HO 5-5976
*Stockton Electronics 710 E Main St HO 6-8832
- VALLEJO**
Walker Co R Lyman 1401 Hiway 40 VA 3-5321
- VENTURA**
Dealer's Whsle 265 S Laurel MI 3-6147
- VERNON**
Westinghouse Elec Supply 4601 S Boy L St KI 0141
- WALNUT CREEK**
Millers Radio 2497 Mt Diablo Blvd
- WEST LOS ANGELES**
California Electronics 11801 W Pico BR 2-2126
- COLORADO**
- BOULDER**
Boilder Distr Co 1816 Grove St
- COLORADO SPRINGS**
Murray Radio Co 9 E Vermijo MA 5946
- DENVER**
Electric Accessories 1959 Stout St
Electronic Parts Co 1322 Lincoln St
Fletchall Radio 1085 Lincoln St MA 3197
General Electric 1429 18 St KE 6301
Graybar Elec 104 Wazee Market TA 7116
Hassoe Inc 1745 Wazee Keystone 8151
Hondrie & Bolthoff 1635 17 St KE 4111
Inter-State Radio 1200 Stout St TA 5347
Larson Dists 550 Lincoln St
Niles Phonograph & Radio 1254 Arapahoe
Radio Parts Distr 3040 W Calif CX
Radio Products Sales 1237 16 St CH 6591
Sweeney Co B K 1601 23 St KE 6211
Ward Terry 70 Rio Grande Blvd
Walker Radio LB 854 Broadway Hqrs Pueblo
Wroco Parts of Colorado 780 Broadway
- GRAND JUNCTION**
Radio & Elec Supply 511 Ute Ave 486
- PUEBLO**
Pueblo Radio TV Supply 211 Polk 8515
*Walker Radio Co L B 100 W Victoria Ave 357
- CONNECTICUT**
- BRIDGEPORT**
Coastal Radio 1106 Barnum Ave 5-7441
General Elec 335 Kosuth St 68-1621
*Hatry of Bridgeport 1700 Main St 5-3124
Sprague Electrical Supplies 347 RR Ave 6-2535
Waldhaus L N 1132 Norman St FA 5-7985
Westconn Electronics Inc 195 Colorado Ave BR
67-8671
- DANBURY**
Pilgrim Electronics 11 Spring St 3-4617
- EAST HARTFORD**
Radio & Appliance Dist 673 Connecticut JA 8-6544
- HAMDEN**
Spinney Co B H 957 Dixwell Ave Hqrs Springfield
Mass
- HARTFORD**
Capital Light & Supply 6 Mentley Pl JA 7-8115
Emerson Radio 20 Chestnut St JA 5-1476
General Elec Supply 2964 Main St 2-4115
*Hatry of Hartford 203 Ann St 7-1881
*Moses Radio & Elec 54 Flower St 7-7247
Orhill Inc P O Box 208 HA 8-6581
Roskin Distributors 275 Park Ave 89-9361
Scoll & Co R G 1249 Main St JA 2-1144
Westinghouse Elec 185 Ann St 2-9203
Wood-Alexander Co 100 Locust St
Yale Radio Electronics 1242 Main JA 2-9300
- KENSINGTON**
*Modern Radio 131 Farmington Ave NB 4-0840
- NEW BRITAIN**
Radio & TV Supply 183 Arch St 5-3024
*United Radio Supply 53 E Main St 3-2731
Universal Radio Co 61 E Main St
- NEW HAVEN**
Amerling 537 Whalley Ave ST 7-5803
American Distr 76 Franklin UN 5-0861
American TV 84 Commerce St LO 2-6122
Ammrad Co 843 Grand Ave UN 5-4508
*Brown Co T H 15 Whiting St ST 7-2297
Congress Radio 207 Congress UN 5-6365
Connecticut Appl Dists 140 Ferry St LO 2-9941
Dale Electronic Div Dale-Conn Inc 150 Jams
SP 7-5555
Electronic Sales 353 Crown St UN 5-0161
General Elec Supply 74 Forbes St HO 7-6331
Graybar Electric 25 Union St UN 5-4163
*Hatry of New Haven 77 Broadway ST 7-5921
Plymouth Electric 393 Chapel St. ST 7-0291
Tower Distr N M 48 County St SP 7-5320
Westinghouse Elec 240 Cedar Sp 7-3601
Yale Radio-Electric 680 Chapel MA 4-0834
- NEW LONDON**
Aikins Electronic 428 Bank St 2-4407
- NORWICH**
Aikins Electronic Supplies 98 Water St
- STAMFORD**
*Hatry of Stamford 97 Main St
Stamford Radio Supply 562 Atlantic St
- WATERBURY**
*Bond Radio Supply 439 W Main St 3-2149
General Elec Supply 23 Nichols Dr 4-2143
*Hatry of Waterbury 89 Cherry 5-1181
Mae's Radio & Electronic 200 Bank St
- WEST HARTFORD**
Graybar Electric 453 New Park Ave HA 33-2631
- DELAWARE**
- WILMINGTON**
Almo Radio Co 6 & Orange Sts Hqrs Philadelphia P
Delaware Electronics 205 W 4 St 4-7932
General Electric 310 S Market St 5-5561
Graybar Electric 1005 4 W St ST 4-6245
Radio Electric 3 & Tattall Sts 6-8664
Westinghouse Electric 400 S Market 5-9611
Wholesale Electronic Supply 3rd & Monroe Sts 6-114
Wilmington Elec Supply 405 Delaware Ave 5-4321
- DISTRICT OF COLUMBIA**
- WASHINGTON**
*Capitol Radio 2120 14 St N W HO 2-0800
Educational Labs 1625 Conn N W DU 3434
*Electronic Whsle 2345 Sherman N W HU 5200

DISTRIBUTORS SERVING the ELECTRONIC INDUSTRIES

General Electric Supply 705 Edgewood St N E HU 6800
 Graybar Elec 60 Fla Ave N E AD 4-4800
 Krnyon Radio Supply 2020 14 St DE 2-5800
 Mid-Atlantic Appl 2040 W Va Ave NE LA 6-5500
 *Ruher Electronic 1312 14 St NW AD 2-8554
 *Silberno Radio 3308 11 St NW HO 2-7000
 SE Radio Wholesalers 2027 Nichols SE LU 4-5142
 Southern Electronics 3405 Georgia NW TV 2-5000
 Southern Whislers 707 Edgewood NE HU 3-3424
 Sun Paris Distr 520 10 St NE B-2697
 Westinghouse Elec 1216 K St MA 9700
 Zamoiski Jos M 2122 24th NE LA 6-3300

FLORIDA

DAYTONA BEACH
 Hammond-Adams 701 N Beach St 2-0704

FORT LAUDERDALE
 Certified Radio TV 2608A S Federal Hwy 3-6451
 Goddard Distr 2113 S Andrews Ave Hqrs W Palm Beach
 Graybar Electric 845 N W 6th Ave

GAINESVILLE
 Bird Hardware Co 101 E Main St 8531

JACKSONVILLE
 Acme Electronics Distr 811 Main St 6-0485
 Bent Distributing Co 4012 W Beaver St
 General Elec Supply 530 E Forsyth St 3-9011
 Graybar Electric 12 & Main Sts 6-7611
 Kinkade Radio 1402 Laura Hqrs Tampa
 Major Appliances 536 E 4 St Hqrs Miami
 Peard Electronic Supply 672 E 8th St
 Puthoff Co G F 2231 W Beaver 6-1591
 Radio Parts Co 1411 Main St
 Southeast Audio Co 930 W Adams St 4-6372
 Southern Hardware 11 S Newman St
 Thorow Distributors 15 E Church St 5-3727
 Westinghouse Elec 545 E 4 St 3-7431

LAKELAND
 Hammond-Adams 116 W Lemon St Hqrs Orlando
 Radio Accessories 1054 S Florida Ave Hqrs Orlando

MIAMI
 East Coast Radio 1932 N W Miami Ct 82-4636
 Electronic Supply 61 N E 9 St 9-4503
 Emerson Radio of Fla 131 NE 10th St
 Flagler Radio Co 1068 W Flagler St
 General Electric Supply 811 N W 1 Ave 82-1521
 Graybar Electric 2111 N W 22 Ave 65-1411
 *Herman Radio Supply 1365 N W 23 St 82-5431
 Major Appliances 2201 N W 17 Ave 3-5533
 Radio Parts Inc 325 N W 3 Ave 2-7441
 Sea Coast Appl Dist 1481 N W 22 St 9-1761
 Thorow Distributors 2207 N E 2 Ave 9-6571
 *Walder Radio & Appl 1809 N E 2 Ave 9-4794
 Westinghouse Electric 11 N E 6 82-3691
 Wholesale Appliance 965 S W 8 St

ORLANDO
 General Electric 523 N Garland 3-6407
 Graybar Electric 400 Pittman St 5-4551
 Hammond-Adams Inc 533 W Central Ave
 Radio Accessories Co 2305 McRae St 5-2677
 Thorow Distributors 625 W Central Ave

PANAMA CITY
 Thompson Appliance 6 E 4 St SU 5-6361

PENSACOLA
 Grice Radio & Elec 300 E Wright St 3-4616
 Gulf Elec & Hdw 115 E Gregory St 6146
 Hendley Distributing 1110 N 13 Ave 2-5457
 Nelson Radio & Supply PO Box 3014

ST. PETERSBURG
 Cooper Radio Co 648 2 Ave S 7-7120
 Graybar Electric 1900 1 Ave
 Southern Electronics Labs 938 9 St S 75-2911
 *Thorow Distr 342 3 Ave S
 Welch Radio Supply 408 9 St S 7-8655

TALLAHASSEE
 General Elec Supply 705 Woodward St
 Thorow Distributors 739 Monroe St 2-1263

TAMPA
 Elec Supply Co 106 S Franklin St 2-3745
 Emerson Radio of Fla 209 S Franklin St
 General Electric 512 S Morgan 2-1805
 Graybar Electric 416 Ellamae Ave TA 2-4621
 Kinkade Radio Supply 1707 Grand Central 8-6043
 Major Appliances 419 Ellamae Hqrs Miami
 Radio Accessories Co 135 S Franklin Hqrs Orlando
 *Thorow Distributors 134 S Tampa St 2-1885
 Westinghouse Electric 417 Ellamae Ave 2-4271

WEST PALM BEACH
 Goddard Distributors 1309 N Dixie 3-5701
 Thorow Distr 327 Okeechobee Rd

GEORGIA

ALBANY
 General Electric Supply 109 1/2 N Wash St 5328
 Specialty Distributing 104 Pine Ave Hqrs Atlanta
 Stewart's Radio 212 N Washington 2-1072
 Westinghouse Elec 610 N Washington 667

ATLANTA
 Atlanta Phonograph 27 Pryor SW WA 3380
 Beck & Gregg Hardware 217 W Luckie St N W WA 2010
 Economy Auto 1130 Bankhead N W AT 1672
 Edwards-Harris 258 Peachtree NW LA 5668
 Electrical White 229 Whitehall St SW CY 3431
 Garvin Electric 69 Forsyth St
 General Electric 172 Haynes St S W MA 3811
 Georgia Appliance 1405 Spring St N W
 Graybar Electric 333 North Ave N W CY 1751
 Hopkins Equip 418 W Peachtree CY 6031
 Martin Distr C S 1000 Marietta NW
 Southeastern Radio Parts 400 W Peachtree 6-9761
 Specialty Distributing 425 Peachtree EL 5816
 Thomas Electronics N 419 Spring N W LA 8477

Westinghouse Elec 1299 Northside Dr N W AT 2721
 Yancy Co 1500 Northside Dr N W EL 8843

AUGUSTA
 General Elec 811 Marion Bldg 2-3582
 *Prostwood Electronics 1445 Gramo St 4-5444
 Specialty Distributing 644 Reynolds St Hqrs Atlanta

COLUMBUS
 *Radio Sales 1326 1 Ave
 Westad 1047 13th St

MACON
 Electronic Distrib 995 Riverside Dr 3-9379
 Hatcher Co A S 586 3 St 3-5464
 Specialty Distributing 539 Arch St Hqrs Atlanta
 White Radio Co 654 Mulberry St 3-3768

ROME
 Electronic Supply 217 E 1st St

SAVANNAH
 General Electric 301 E Bay St 4-2231
 Graybar Electric 2601 Whitaker St 2-1121
 Southeastern Radio Parts 38 Montgomery St
 Specialty Distributing 411 E Broughton St
 Tuten & Long 1508 E 50 St
 Westinghouse Elec 580 Indian 3-9682
 Yancy Co 666 Indian St 4-1611 Hqrs Atlanta

IDAHO

BOISE
 *Cradock Radio Sup 1522 State St 2-6471
 General Electric 618 S B St 4343
 Graybar Electric 14th & Idaho St 2-4501
 *Kopka Electronics 3113 Rosehill 2-2371
 Strevell-Paterson 408 S 9 St 4851 Hqrs Salt Lake City Utah
 Westinghouse Electric 318 S Capital Blvd 2-3531

IDAHO FALLS
 Schwendman Dist 380 E St 2470W

POCATELLO
 Ballard-Carter 840 N Main St
 Billmeyer's Wholesalers 240 S Arthur St

ILLINOIS

ALTON
 Ebinger Radio 2416 E Broadway 2-0521

AURORA
 Pioneer Radio Supply 103 S La Salle St

BELLEVIEW
 *Lurtz Electric 219 N Illinois St AD 3-0942

BENTON
 *Lampley Radio 802 N McLeansboro 5111

BLOOMINGTON
 Arco Electric Supply 908 S Lee St 2514-5

CALUMET CITY
 Chaunceys Inc 136 Palaski Ave Hqrs Chicago

CHAMPAIGN
 Electronic Parts Co 905 S Nell St 9525
 Radio Doctors 340 N Hickory

CHICAGO
 *Allied Radio 100 N Western Ave HA 1-6800
 Alton Electronics 2737 N Ashland GR 7-5386
 Arpio Sales 4305 Lincoln St WE 5-7781
 Ashbach Enterprises 743 N LaSalle St WH 4-0077
 Atronics Sales 6566 Sheridan Rd 1-2424
 *Bowman & Co J. C. 515 E 75 St 4-8070
 Broadwin TV & Radio 5004 Broadway UP 8-6060
 *Chaunceys Inc 4740 W Chicago Ave ES 8-0830
 Chicago Electronic 420 E 87 St NU 3-9700
 Chicago Radio Apparatus 43 S Dearborn HA 7-2276
 Clayton Radio 2749 N Ashland GR 7-1075
 Electronic Exchangers 2909 W Devon Ave RO 4-8640
 General Elec Supply 845 S Clinton WA 2-5656
 Graybar Electric 850 W Jackson Blvd CA 6-4100
 Green Mill Radio Supply 145 W 111 St PU 5-9840
 Howard Electr 3149 W Fullerton EV 4-1545
 Joseph Radio Parts 5959 W Fullerton MA 2-3914
 Lake Radio Sales 3458 W Fullerton DI 2-2310
 Lakha Sales Corp 5024 Irving Park Rd AV 3-4800
 Mid-States Electronic 5028 N Dowry LO 1-2894
 *Midwest Electr 6907 N Western Ave RO 1-1660
 Mort's Radio Shack 1920 N Milwaukee BR 8-5600
 Nagel Inc Arthur 928 E 55 St 8-5050
 Nation Wide Radio 572 W Randolph St DE 2-6509
 Newark Electric 223 W Madison St 2-2950
 Olson Radio 623 W Randolph DE 2-5226
 Pilgrim Distributing 1230 E 53 St FA 4-6043
 Pioneer Radio Supply 5243 W Diversey AV
 Premier TV Radio 3239 W North St AR 6-5550
 *Radio Parts Co 612 W Randolph DE 2-2530
 Radio Parts Distr 925 E 55 St BU 8-5050
 Radio Parts Outlet 4305 Lincoln Ave WE 5-7781
 Radio-TV Supply 4345 W Armitage Ave NU 9-3311
 RCA Victor Distr 445 N Lake Shore Dr WH 4-4600
 Star Electronic 7736 S Halsted NU 3-8440
 Stolz-Wicks 8110 S Western WA 5-6210
 Triangle Industries 600 W Adams AN 3-5060
 U S Radio & TV 6602 S Ashland WA 5-4111
 *Walker-Jimison 311 S Western Ave CA 6-2525
 Westinghouse Elec 912 W Wash MA 1-7474

INDIANAPOLIS
 *Allied Radio 100 N Western Ave HA 1-6800
 Alton Electronics 2737 N Ashland GR 7-5386
 Arpio Sales 4305 Lincoln St WE 5-7781
 Ashbach Enterprises 743 N LaSalle St WH 4-0077
 Atronics Sales 6566 Sheridan Rd 1-2424
 *Bowman & Co J. C. 515 E 75 St 4-8070
 Broadwin TV & Radio 5004 Broadway UP 8-6060
 *Chaunceys Inc 4740 W Chicago Ave ES 8-0830
 Chicago Electronic 420 E 87 St NU 3-9700
 Chicago Radio Apparatus 43 S Dearborn HA 7-2276
 Clayton Radio 2749 N Ashland GR 7-1075
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 General Elec Supply 845 S Clinton WA 2-5656
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 Mort's Radio Shack 1920 N Milwaukee BR 8-5600
 Nagel Inc Arthur 928 E 55 St 8-5050
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 Newark Electric 223 W Madison St 2-2950
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 RCA Victor Distr 445 N Lake Shore Dr WH 4-4600
 Star Electronic 7736 S Halsted NU 3-8440
 Stolz-Wicks 8110 S Western WA 5-6210
 Triangle Industries 600 W Adams AN 3-5060
 U S Radio & TV 6602 S Ashland WA 5-4111
 *Walker-Jimison 311 S Western Ave CA 6-2525
 Westinghouse Elec 912 W Wash MA 1-7474

INDIANA
 Anderson
 Seyberts Radio Supply 1331 Main St 3-5431

ANGOLA
 Lakeland Radio Supply 525 S West St 70

BLOOMINGTON
 Stanifor Radio 1805 S Walnut St

COLUMBUS
 Williams Co HA PO Box 106

CROWN POINT
 *Hub Distributors 106 N Main St 1110

ELKHART
 Radio Service Hqrs 725 S Main St 2-1208

EVANSVILLE
 Castrop's Radio Supplies 1014 W Franklin St
 Forband Inc S U 1901 W Maryland 5-8193
 General Electric N New York Ave 5-5274
 Graybar Electric 1709 E Columbia St 6-1357
 Hatch & Son 919 Vine St 4-6731
 Ohio Valley Sound Service 11 N W Riverside Dr 5-9243
 Wesco Radio Parts 428 Penn St 2-2141
 Westinghouse Electric 201 N W 1 St 5-7276

FORT WAYNE
 Fort Wayne Electronics Supply 223 E Main St AN 7388
 General Electric 1609 S Calhoun St MA 3243
 Pemberton Labs 236 E Columbia E-1812
 Protective Elec 130 W Columbia A-9331
 Van Sickle Radio 1320 S Calhoun E-4136
 Wall Distributing 241 Pearl St E 2027
 *Warren Radio Co 1716 S Harrison St
 Wayne Hardware 254 W Main A-7153
 Westinghouse Elec Supply 610 S Harrison St AN 3421

FRANKFORD
 Dessett Co M H 855 Burlington 5394

GARY
 Cosmopolitan Radio 524 Washington 5-7746
 R-B Distr 3763 Broadway CA 4-8824
 Walker-Jimison 615 W 11 Ave Hqrs Chicago III

HAMMOND
 Broadwin Radio & TV 6516 Calumet St RU 6940
 General Elec Supply 506 Fayette St SW 5155
 Graybar Electric 6445 Indianapolis Blvd SW 5830
 Nation Wide Radio 7015 Calumet RU 8410
 Westinghouse Elec 6341 Ind Blvd RU 9400

INDIANAPOLIS
 Associated Distr 210 S Meridian St LI 2593
 General Electric Supply 1250 Stadium Dr LI 8443
 Gibson Co 433 N Capitol Ave LI 3321
 *Graham Electronics 102 S Penna St LI 8487
 Graybar Electric 1300 W 16 St AT 2351
 Griffith Distr 321 W Maryland

HARRISBURG
 Standard Radio 523 W Poplar 640

JACKSONVILLE
 Baptist Radio & TV 419 S Maulsterre 34

JOLIET
 Joliet Radio Supply 460 N Chicago 3-9328

KANKAKEE
 Radio Doctors 220 E Station St 2-4726

MATTOON
 Furste Auto Supply 5418
 Mattson Radio & TV 1219 Broadway 8414

MOLINE
 *Lofgren Dist Co 1202 4 Ave MO 4-7436

MT. CARMEL
 Wabash Electronics 700 Plum St 728

OAK PARK
 Melvin Electronics 238 Chicago Ave VI 8-3960

PEORIA
 General Elec Supply 800 S Adams Bl 6-2911
 Graybar Electric 704 S Adams PE 4-8211
 Grimm Distributing Co 400 Franklin St
 *Herberger Radio Supply 136 1 St
 Kiass Radio & Electric 707 Main St
 Pearla Elec Appl 631 Franklin 3-3847
 Rahn Electronic 2108 Main St 4-9156
 Warren Radio 308 S Oak St
 Westinghouse Electric 2800 N Adams St 2-5456
 Williams Inc 828 S Adams St 3-4446
 Yoemanns Distributing 3302 N Adams 5-7631

QUINCY
 *Cooper Supply 419 S 10 St 237
 Quincy Electronic 310 Hampshire

ROCKFORD
 General Electric 810 20 St 5-0551
 H & N Electronic Supply 510 Kishwaukee St 5-4625
 Johnson Sales Art A 1117 Charles St
 J & M Radio & Telev 1133 Railroad Ave
 Mid-West Associated 506 Walnut St
 State-Wide Wholesale 913 S Main St
 Superior Radio 2310 Charles St 3-6451
 Westinghouse Elec Supply 323 S Main St 5-0577

ROCK ISLAND
 *Cameron Co 114 17th St 8-7457
 *Tri-City Radio Supply 1919 4 Ave 8-5681

ST. JACOB
 Michael's Electrical Supply 4th & Douglas 3200

SPRINGFIELD
 *Bruce Harold 1120 E Capitol Ave 8-7523
 General Electric 1007 E Jefferson 3-4509
 Graybar Elec Co 405 N MacArthur Blvd
 Sacco United Tel 217 E Washington 8-7822
 *Wilson Supply 106 W Jefferson

STERLING
 Hardware Products 201 Locust St 70

TUSCULA
 Mealden Distributing 106 W N Central Ave 163

WAVERLY
 Waverly Wholesale 396

WHEATON
 Gaskins Distributor 1005 S Aurora Way

INDIANA

ANDERSON
 Seyberts Radio Supply 1331 Main St 3-5431

ANGOLA
 Lakeland Radio Supply 525 S West St 70

BLOOMINGTON
 Stanifor Radio 1805 S Walnut St

COLUMBUS
 Williams Co HA PO Box 106

CROWN POINT
 *Hub Distributors 106 N Main St 1110

ELKHART
 Radio Service Hqrs 725 S Main St 2-1208

EVANSVILLE
 Castrop's Radio Supplies 1014 W Franklin St
 Forband Inc S U 1901 W Maryland 5-8193
 General Electric N New York Ave 5-5274
 Graybar Electric 1709 E Columbia St 6-1357
 Hatch & Son 919 Vine St 4-6731
 Ohio Valley Sound Service 11 N W Riverside Dr 5-9243
 Wesco Radio Parts 428 Penn St 2-2141
 Westinghouse Electric 201 N W 1 St 5-7276

FORT WAYNE
 Fort Wayne Electronics Supply 223 E Main St AN 7388
 General Electric 1609 S Calhoun St MA 3243
 Pemberton Labs 236 E Columbia E-1812
 Protective Elec 130 W Columbia A-9331
 Van Sickle Radio 1320 S Calhoun E-4136
 Wall Distributing 241 Pearl St E 2027
 *Warren Radio Co 1716 S Harrison St
 Wayne Hardware 254 W Main A-7153
 Westinghouse Elec Supply 610 S Harrison St AN 3421

FRANKFORD
 Dessett Co M H 855 Burlington 5394

GARY
 Cosmopolitan Radio 524 Washington 5-7746
 R-B Distr 3763 Broadway CA 4-8824
 Walker-Jimison 615 W 11 Ave Hqrs Chicago III

HAMMOND
 Broadwin Radio & TV 6516 Calumet St RU 6940
 General Elec Supply 506 Fayette St SW 5155
 Graybar Electric 6445 Indianapolis Blvd SW 5830
 Nation Wide Radio 7015 Calumet RU 8410
 Westinghouse Elec 6341 Ind Blvd RU 9400

INDIANAPOLIS
 Associated Distr 210 S Meridian St LI 2593
 General Electric Supply 1250 Stadium Dr LI 8443
 Gibson Co 433 N Capitol Ave LI 3321
 *Graham Electronics 102 S Penna St LI 8487
 Graybar Electric 1300 W 16 St AT 2351
 Griffith Distr 321 W Maryland

DISTRIBUTORS SERVING the ELECTRONIC INDUSTRIES

Indianapolis (continued)

Hoosier Radio Supply 701 N III St LI 3010
 Indianapolis Radio 912 N III St LI 8970
 Kiefer-Stewart Co 122 S Senate Ave LI 4321
 Meunier Radio Supply 524 N Illinois St LI 8884
 Peerless Electric 122 S Meridian PL 2361
 Penlee-Gaulbert 1401 Stadium Dr
 Radio Distributing 1013 N Capital Ave ME 5-8311
 Radio Equipment Co 1010 Central Ave PL 6453
 Redfield Co 614 N Capital LI 8331
 Sanborn Electric 311 N III St PL 9584
 Warren Radio 908 N III St LI 5566 LI 8970
 Hqrs Toledo Ohio
 Westinghouse Elec Supply 139 S Penna St MA 3301

JEFFERSONVILLE

Moakler Electronic 949 E Maple 2-2229

KOKOMO

George's Electronic 125 M Beckey 6771
 Radio TV Distr 507 N Washington 2-5651

LAFAYETTE

Holmes Radio State Rd 25 Box 559 2-6845
 Lafayette Radio Supply 408 E North St 2-5217

LOGANSPOUT

Conrad Co A E RFD 4 2606

MARION

Mobile Radio Supply 507 N Washington 5734
 Myers Radio Supply 115 W 22 St 1357

MICHIGAN CITY

Tri-State Electrical 601 W 10th 2-5551

MUNCIE

General Electric 204 E Willard St 6614
 Muncie Electronics 305 N Madison 8837
 Standard Radio Parts 1104 S Walnut 8522

PERU

Clingaman Radio 814 W Main St
 Television-Radio Distr 812 W Main 2005

RICHMOND

Fox Electronics 711 S 9 St 2-4676
 Radio & TV Distr 717 S 5 St 2-4752 Hqrs South
 Bend

RINEHART

Rinehart Inc 511 Main 2-2581

SOUTH BEND

Cloud Bros 110 E Western Ave 6-0395
 Colfax Co 802 S Main 6-5548
 Comm Sound & Radio 528 E Colfax 3-9394
 General Elec Supply 424 E Monroe St 6-3411
 Radio Distributing 432 S Carroll St Lafayette 6-0375
 Radio Equipment Co 1202 S Lafayette 6-9551
 Radio & TV Distr 116 N Hill St 3-9394
 Ridge Co 315 W Jefferson Blvd 4-3145

TERRE HAUTE

Archer & Evinger 1216 Wabash C 4229
 General Elec 801 Poplar St CR 9-6955
 Terra Haute Radio 501 Ohio CR 4772
 Walker Electric Supply 126 S 3 St

VALPARAISO

Bowman & Associates Jess 257 W Lincolnway 3-4381

IOWA

BURLINGTON

Union Supply Co 409 Washington 7270

CEDAR RAPIDS

Gifford-Brown 106 1 St S W Hqrs Des Moines
 Iowa Radio Supply 508 3 Ave S E 5346
 Midwest Specialty 53 16th Ave SW 3-3609
 Westinghouse Elec Supply 126 S3 CR 1385

COUNCIL BLUFFS

World Radio Labs 3415 W Broadway 2-0277

DAVENPORT

Crescent Elec Supply 505 Pershing Ave 2-6273
 Graybar Electric 206 E 5 St DA 3-2769
 Havercamp Co 402 E Locust St 3-1857
 Midwest-Timmerman 114 Western Ave 7-5288
 RCA Victor Distr 1235 W 5 St 4-9847
 Tri-City Radio Supply 320 E 4 St 3-8051
 Union Supply Co 324 E 4 St 6-3713
 Westinghouse Electric 402 E 4 St 3-9996

DES MOINES

General Electric 108 E 4 St 4-0156
 Gifford-Brown Inc 1216 Grand Ave 3-1257
 Graybar Electric 24 11 St 3-8614
 Iowa Radio Corp 1212 Grand 2-8197
 Mid-State Distr 1201 Grand 8-7231
 Midwest-Timmermann 812 Tuttle St Hqrs Daven-
 port

ONTHANK

Onthank Co G W 10 & Mulberry 3-8166
 Radio Trade Supply 1224 Grand 8-7237
 Schneiderhahn Co A A 319 SW 5th St
 Sidles Co B 7 St 4-0138
 Serenson Co M E 100 S W 1 St 4-6267
 Westinghouse Elec Supply 1400 Walnut 2-0244

DUBUQUE

Boe Distributing 1605 Rockdale Rd 3-5795

FORT DODGE

Ken-Elc Radio Supply 501 1st Ave

OTTUMWA

Friday-Lynch Radio 420 W 2 604

SIOUX CITY

Brown Radio Supply 1317 Dace St 2-3163
 Burghardt Radio 611 E 5th St
 Duke's Radio 209 6 St 5-5056
 Graybar Elec Co 510 Pearl St 5-0189
 Power City Radio 410 Jones St Hqrs S Iowa
 Falls S D
 Westinghouse Electric 1005 Dace St 5-7634

WATERLOO

Farnsworth Radio & TV 201 E Mullan Ave 6682
 Ray-Wac Supply Co 200 Ballou St 3-5296
 Westinghouse Electric 300 W 3 St 4679

KANSAS

ATCHISON

Blish, Mize & Sillman 223 S 5th St

COFFEYVILLE

Four State Radio 117 W 7th 693

HUTCHINSON

Aemo Radio & Television 327 W 4th St
 Interstate Electronic Supply 325 W 4 St
 Wholesale Electronics 1019 E "A" Ave 2-4456

KANSAS CITY

RCA Victor Fairfax & Funston Rd AT 3075

PITTSBURG

Pittsburg Radio Supply 212 S Broadway 356

SALINA

Western Distr 227 Santa Fe

TOPEKA

Aemo Radio Supply 412 E 10 St
 General Elec Supply 115 Jackson 5-4474
 Overton Electric 522 Jackson St 3-3261

WICHITA

Amateur Radio 1203 E Douglas 4-3579
 Excel Distributors 118 W 2 4-4783
 General Electric 801 E 1 St 5-0620
 Graybar Elec 424 N Rock Island 7-1366
 Interstate Elect 230 Ida 4-6318
 McClinton Sound 229 W William 44-44-55
 Radio Supply Co 1125 E Douglas 7-5218
 RCA Victor Distr Lincoln & Meade Sts
 Westinghouse Electric 233 S St Francis 3-8215

KENTUCKY

ASHLAND

Ashland Radio Supply 2125 Winchester 3123

BOWLING GREEN

Crescent Radio Supply 212 W 10 St 9722

HARLAN

General Elec Hoskins St 815

HOPKINSVILLE

Randolph & Hale 2325 S Virginia TU 5-8696

LEXINGTON

Electronic Distr 134 W 3 St 2-7414
 General Electric 309 N Ashland Ave 2-1887
 Ky Radio Supply 376 E Main St 2-3373
 Lex-Tronics 810 E 3rd St 4-3470
 Miller's Barney 232 E Main 2-9622
 Radio Equip Co 480 Shain Ave 3-1577

LOUISVILLE

Arby Electronics Hancock & Gray WA 8851
 Burks Co P 1 911 W Broadway JA 7923
 Ewald Distributing 309 S 9 St JA 8227
 Falls City Supply 315 Roland WA 7447
 General Electric 2811 S Brook St CA 3651
 General Electric 614 Myrtle CA 5411
 Peerless Elec Equip 2210 S 7 St CA 7678
 R-K Distr 801 W St Catherine JA 5349
 Universal Radio Supply 533 S 7 St JA 1413

NEWPORT

Apex Distributing 506 York St AX 1949

OWENSBORO

Contronics Inc 600 W 3 St 3-6727
 Peerless Elec Equip 1206 Triplot Hqrs Louisville

PADUCAH

General Electric Co 301 S 2 St 447
 Warren Radio 455 S 31st St 2-4367
 W Ky Electronic 1205 Broadway 4503

LOUISIANA

ALEXANDRIA

Brown-Roberts Hdw Supply 1810 5rd St
 Central Radio Supply 509 Monroe St 3-4517
 Columbia Radio & Supply 2140 Lee Hqrs New
 Orleans

BATON ROUGE

Electronic Supply 1753 N 21 St 2-0517
 Graybar Electric 2442 T Danham Ave 4-7093
 La Radio TV Distr 1645 Plank Rd 8-1456
 Ralph's Radio Electronic Supply 812 Main St

LAFAYETTE

Butcher Bros 438 Jefferson
 Ralph Radio & Electronic 1419 Cameron St

LAKE CHARLES

Wholesale Radio Equip 324 Ryan St 9-9017

MONROE

C & O Electronics 500 N 3 St 3-5732
 Hale & McNeil 421 Walnut 2-5136

NEW ORLEANS

Allion Supply Co W B 1601 Orleans Ave
 Aodlotronics Supply 1834 N Claiborne VI 5579
 Bell Radio Supply 2625 Tulane Ave
 Columbia Radio & Supply 3940 3 St UN 2731
 Crescent Radio & Supply 1600 Baronne St
 Eaco Inc 601 S Peters St
 Electrical Supply Co 201 Magazine St
 Electronic Distr 1526 Magazine WA 6700
 Electronic Parts Co 205 N Broad St
 Gautreaux's Elec Supply 2746 Orleans Ave AU 1619
 General Elect 4221 Bienville GA 5771
 Graybar Electric 1116 Magnolia St CA 6263
 Industries Sales 2927 Jackson Ave
 Interstate Electric 1001 S Peters CA 8541
 Ble Miss Supply Co 901 Carondelet St TU 3559
 Poe-Jay Radio 2306 Tulane Ave AU 0807
 Pelican Radio Supply 824 N Broad St
 Radio Parts Inc 807 Howard Ave CA 0217
 Radio Specialty 3119 S Carrollton Ave
 Shuler Supply 415 Dryades St RA 2166
 Southern Radio Supply 1900 Tulane
 Stratton-Baldwin PO Box 253
 Telav & Appl Distrs 500 N Carrollton
 Walther Bros 1722 Poydras St CA 7731
 Westinghouse Elec 2538 Poydras TU 5411

SHREVEPORT

Baggett Radio 820 La Ave
 Dunckelman Distributing Co 119 Beech St
 General Electric 1430 Dalzell St 5-8631
 Graybar Electric 90 Fannin St 5-3271
 Interstate Electric Co 1419 Calpepper St 3-6131

*Kaelmay Sales Co 2350 Linwood Ave 3-4256
 Lavender Radio & TV 936 Millam St
 Westinghouse Electric 120 Caddo St 3-0583

MAINE

AUBURN

Radio Supply Co 26 Cross St 4-5486

AUGUSTA

Westinghouse Electric 98 Water St 2040

BANGOR

Commercial Distrs 135 Exchange St
 General Elec Supply 840 Hammond St 7331
 Maine Electronic Supply 494 Broadway
 Radio Serv Lab 16 Salem CT 7396
 Radio Supply Co 151 Center St Hqrs Auburn
 Westinghouse Elec Supply 175 Broad St 6487

BALTIMORE

*Powell Radio 115 Water St

PORTLAND

Brown Co F M 12 Free St 3-4791
 Commercial Distributors 35 Commercial St
 General Electric Supply 170 Anderson St 2-3721
 Graybar Electric Center & Commercial Sts 3-1766
 Hub Distributors 81 Franklin 2-4679
 Maine Electronic 148 Anderson 4-0301
 Radio Serv Lab 1004 Congress Hqrs Manchester N H

MARYLAND

BALTIMORE

American Distr Co 1200 N Fulton LD 6-8930
 Berman Co M O 10 E Lombard LE 9-9002
 D & M Distr Co 25 S Liberty SA 5100
 Electronic Parts 4530 Harford HA 6-2808
 General Elect 1500 Barclay LE 3565
 Graybar Electric 100 South St SA 5050
 Kann-Elect Electronics 9 S Howard SA 4242
 Lytron Distr Co 1338 W North Ave LA 3-8880
 Radio Elec Serv S N Howard LE 9-3835
 Spartana Co A R 239 Gay St N SA 5762
 Video Electronics 5617 Belair Rd HA 6-7913
 Westinghouse Electric 2115 W Franklin LD 4400
 Wholesale Radio Parts 308 W Redwood St MU 5-2134

CUMBERLAND

Zimmerman Wholesalers 162 Bedford Hqrs Ham-
 orestown

FREDERICK

Hankey's Radio Service 404 Elm St MO 2-1381

HAGERSTOWN

General Elec Supply 1095 Jefferson Blvd.
 Stoddard Supply Co 354 S Cannon 6342
 York Radio & Ref 67 W Franklin 5586
 Zimmerman Wholesalers 114 E Washington St 408

SALISBURY

Aimo Radio Co 219 Highland Ave Hqrs Phila-
 delphia Pa
 Artercraft Elec Calvert & Baptist St
 Standard Electronics 301 Snow Hill Rd 7593

SILVER SPRINGS

Rucker Radio Wholesalers 8049 13 St
 Silver Spring Electronic 948 Silgo JU 8-3567

MASSACHUSETTS

BOSTON

Aemo Distributors 1103 Columbus Ave MI 2-1400
 Adams Distr 70 Brookline Ave CO 7-2940
 Arvedon Distributors 73 Portland CA 7-4034
 Brattle Radio Co 42 Brattle St CA 7-7529
 Burke Co J H 39 Brighton Ave AL 4-4050
 Commercial Radio 36 Brattle RI 2-1241
 Cramer Electronics 811 Boylston CU 7-4700
 Del Padre Assoc L L Hqrs Springfield
 DeMambo Radio 1111 Commonwealth St 2-7870
 Electro Sales Co 50 Eastern Ave CA 7-3456
 General Electric 145 N Beacon AL 4-5300
 Gerber Radio Supply 1900 Columbus GA 7-0411
 Graybar Electric 287 Calabum KE 6-4567
 Hatry & Young 811 Boylston St CO 7-4700
 Herman Co L M 885 Boylston St CO 7-5620
 Lincoln Electronic 790 Commonwealth BE 2-7510
 Mattapan TV Distr 16 Gilmer St
 Mayer Co A W 895 Boylston CO 7-5530
 McAllister L J 243 Columbus CO 7-2500
 Northeastern Distrs 588 Commonwealth CO 7-2000
 Radio Shack 167 Washington LA 3-3700
 Radio Wire TV 110 Federal St HU 2-7850
 Sager Elec Supply 201 Congress St LI 2-2281
 Tee-Vee Supply 3211 Washington JA 2-3980
 Westinghouse Elec 95 Brookline Ave CO 7-3100
 Yankee Electronics 257 Huntington Ave CO 6-0212

BROCKTON

Ware Radio Supply 913 Centre St

CAMBRIDGE

Eastern Co 620 Memorial TR 6-4720
 Electrical Supply 1739 Mass Ave UN 4-6300
 HIFI Lab 89 Mt Auburn St TR 6-2666
 Selden Distr Co 800 Mass Ave KI 7-0920

FALL RIVER

Ross & Co E A 341 Columbia St 3-0921

FITCHBURG

Young & Young 372 Water St 2-0603

HOLYOKE

Holyoke Radio Supply 215 Main St
 Springfield Radio Co 93 High St 2-8302
 Tel-O-Wire Sound Co 24 Newton PI 5626

LAWRENCE

Young & Young 262 Lowell St 7171

LITTLETON

Weston Electronic Sales

LOWELL

McCartin Co F P 181 Market St 9751

LYNN

Dee Roberts Elec 24 Mt Vernon St LY 5-0015

MEDFORD

Durrell Distr 222 Mystic Ave

DISTRIBUTORS SERVING the ELECTRONIC INDUSTRIES

MELROSE

*Melrose Sales Co 60 Essex St ME 4-3821

NATICK

Willett Radio Supply 11 Court 1313

NEW BEDFORD

*Beckman Co C E 11 Commercial 6-8201
Ross & Co E A 1663 Purchase St 3-7878

NEWTON

Delta Distr 314 Washington Bl 4-1560

NORTHAMPTON

C & I Distributors 228 Pleasant St 3138

PITTSFIELD

*Pittsfield Radio 41 West St

SPRINGFIELD

*Cushing T F 349 Worthington St 6-1197
Del Padre Assoc L L 236 Chestnut 9-5658
General Electric 484 Worthington 4-8255
Graybar Electric 32 Patton 7-4373
N E Service Center 891 State St 9-4754
Radio & TV Supply 906 State St
Regent Sales 236 Chestnut St
*Soundco Electronic 147 Dwight 7-3425
Spinney Co B N 153 Plainfield St 4-8284
*Springfield Radio 405 Dwight St 2-3411
Tarbell-Walters 144 Chestnut 6-1841
Western Mass Distr 1 Belmont Ave 6-6374
Westinghouse Elec 46 Hampden 4-3101
*Young & Young 169 Spring St

TAUNTON

*Dean & Co D B 85 Cohannet St TA 4-4117

WEBSTER

Lanman 10 Ardlock Place

WORCESTER

*DeMambo Radio Supply 222 Summer St hqrs Boston
General Elec 163 Mechanic 6-4351
Graybar Electric 108 Grove 6-4311
Johnson Electronic 12 E Worcester St 6-7136
*Radio Electronic Sales 52 Chandler St 7-5671
*Radio Maint Supply 80 Thomas St 6-8311
Westinghouse Elec 107 Thomas St 7-5641

MICHIGAN

ANN ARBOR

Purchase Radio 605 Church 8696
*Wedemeyer Electronic 214 N 4 Ave 2-4457

BATTLE CREEK

*Electronic Supply 94 Hamlin 2-9515

BAY CITY

Kinde Distr Co 504 Washington St 7461

BENTON HARBOR

Benton Electronic 643 W Main 5-1373
Radio & TV Distr Co 1331 M-139 WA 5-3301

CHEBOYGAN

*Straits Distributors 412 N Main St 960

DETROIT

Duffy & Co M N 2040 Grand River Wb 3-2270
Falk Distr Co 9339 Grand River TE 4-0625
*Ferguson Radio 622 W Baltimore TR 4-0100
General Elec 680 Antoinette St TR 5-9400
*Glendale Supply Co 12866 Woodward Ave TU 3-1500
Graybar Electric 55 W Canfield Ave TE 1-5500
Hi-Park Distrib 155 La Belle Ave TO 8-9409
*KLA Labs 7422 Woodward TR 4-1100
Mercury Distr Co 3727 Woodward TE 2-7720
Nor-West TV & Radio 21223 Grand Ave KE 5-0300
Perkins Sales 20480 Woodward TO 8-7020
RCA Victor Distr 7400 Intervale TE 4-3500
Radio Distr 15401 Woodrow Wilson TO 9-7900
Radio Electronic 1112 W Warren TE 2-5611
*Radio Specialties 456 Charlotte TE 2-7578
Radio Supply 85 Selden TE 1-3171
*Rissl Electronic 1112 W Warren TE 2-5611
Westinghouse Electric 2211 W Kirby TV 8-9000
*West Side Radio 8140 Mich LU 4-0120

ESCANABA

Felton Radio 1617 Ludington 2855

FERNDALE

Erickson's Electronic 23325 Woodward LI 5-6994

FLINT

Graybar Electric 2424 Kansas 2-4101
*Lifsey Distr Co 730 N Saginaw 4-1603
Radio Tube Merch Co 508 Clifford 4-3654
*Shand Radio Spec 2608 Leth St 2-9714
Westinghouse Electric 2330 N Dort H'way 4-8623

GRAND RAPIDS

Borsma Radio Supply 853 Grandville 5-0401
General Electric 305 Fulton St W 9-3243
Graybar Electric 43 Monroe Ave N W GL 1-2561
Perkins Sales Co 12 Oakes S W hqrs Detroit
*Radio Electronic 505 Jefferson S E 9-4611
Radio Equip Co 13 Ionia Ave S W GL 6-9551
Radio Parts Inc 542 S Division 9-0247
Republic Distr 19 La Gravo Ave
Warren Radio 24 Logan St SW
Westinghouse Elec 511 Monroe Ave N W 9-4664
Wholesale Radio Co 24 Logan S W GL 6-1432

JACKSON

*Fullon Radio 1208 Greenwood 4-6106
Matteson Electronic 1000 E Michigan 4-4450

KALAMAZOO

*Electronic Supply 906 E Mich Ave hqrs Battle Creek
General Electric 112 Parkway 3-2645
Ralston Co R M 201 N Park St 5-0188
Stevens Radio Paris 713 Portage St
*Warren Radio 713 Portage St

LANSING

*Elec Product Sales 427 E Mich Ave 24-123
General Elec Supply 428 N Grand 2-0677
Graybar Electric 421 E Elm St 4-5434
Morley Bros 1330 S Harrison
*Drenhauser Co 227 W Washenaw 2-9896
*Wedemeyer Electronic 800 Merrill St 5-7727
Westinghouse Elec Supply 306 S Capitol St

LAUREL

*Northwest Radio 435 Tamarack 707

MANISTEE

Gardner Radio 1653

MUSKEGON

Bell-Lourim 1839 Peck St 2-6019
Borsma Radio 1211 Pine St 6334
*Fitzpatrick Elec 444 Irwin 2-6621

MUSKEGON HEIGHTS

Western Electronic 517 W Broadway 3-1639

PONTIAC

*Electronic Supply 248 E Pike St FE 2-3732

POINT HURON

Main TV Supply 1340 Lapeer Ave 5103

SAGINAW

General Elec 125 Davenport St 3-6474
Morley Bros 115 N Washington
Orem Distributing 801 E Genesee
*Radio Parts Co Water & Millard Sts
Saginaw Distributors 1751 E Genesee Ave 3-5444

MINNESOTA

AUSTIN

Radio Elec 219 N Franklin 7-4214 hqrs Minneapolis

DULUTH

Bonn Co Lew 228 E Superior hqrs Minneapolis
General Electric 102 W Mich St 2-0826
Graybar Electric 320 W 1 St BU 2-6646
*Northwest Radio 123 E 1 St 7-1565
Popkey G M 206 E 1 St
Stark Radio Supply 109 Lake Ave S
Westinghouse Elec 230 Lake Ave S ME 2-2625

HOPKINS

Walter Electronic Co 710 Ave N HO 3632 hqrs Fargo N Dak

MANKATO

Southern Minn Supply 2 & Main Sts. 4501

MINNEAPOLIS

*Bauman Co 3033 Lyndale Ave S GI 1745
*Bonn Co Lew 67 S 12 St FI 6351
Echlen Radio 114 N Lyndale Ave AT 0516
*Electronic Center 107 S Ave M LI 8678
Farster Distr 1122 Harmon Pl AT 5471
General Electric 63 S 13 St RR 3266
Graybar Electric 824 S 4 St GE 1621
Hayer Co F C 250 3 Ave N MA 2501
Larson Elec J M 114 Glenwood hqrs Hudson Wis
National Electronics 1215 Nicollet BR 2185
Northwest Radio 52 S 12 St FI 6346
Radio Elec Supply 2451 Nicollet GE 7733
Radio Maintenance 3016 1/2 27th Ave S DR 7546
Reinhard Bros 11 S 9 St K GE 2681
Ruycraft Co 1625 Hennepin Ave GE RR1
Spencer George 444 Stinson ST 8-8621
*Stark Radio Supply 71 S 12 St GE 4623
Sterling Electric 33 S 5 Ave MA 4571
Westinghouse Electric 515 S 7 St LI 7001

ROCHESTER

Elliott & Hanson 119 E Ave N W 22-779
Southern Minn Supply

ST. PAUL

Bonn Co Lew 141 W 7 St hqrs Minneapolis
*Electronic Distr 856 Raymond PR 3911
General Electric 174 E 6 St GA 7801
Graybar Electric 464 Robert St CE 7491
*Hall Electric Co 566 N Robert St GA 5696
Northwest Radio & Electronic 194 W 4 St GA 3801
Stark Radio Supply Co 250 W Kelloog Blvd CE 1994
Westinghouse Electric 253 E 4 St GA 7441

WADENA

Central Co-op Wholesale hqrs Superior Wis

MISSISSIPPI

BILOXI

Nelson Radio Supply 613 Callilavet St 2-8651

GREENVILLE

Goyer Supply Co Box 652 8151

JACKSON

*Cabell Elec Co 422 S Farish 2-2624
Ellington Radio 816 S Gallatin St 3-1327
General Electric 610 Gasco Pl 2-5041
Graybar Elec 154 E Porter St JA 3-6316
Industrial Supplies Highway 80
Dreill Bros Hdw 301 W Pearl St
Radio & TV Supply Co 328 N West St
Ryan Supply Co 208 S State St 5-2241
Southern Distributors 1400 Terry Rd 2-2661
Swan Distr Co 342 N Gallatin 2-5516
Television & Radio 323 N West 5-6406
Westinghouse Elec 325 S Farish 4-8354

MERIDIAN

Grimm Radio Supply 2511 B St 6174
Radio Supply Co 909 24 Ave 8802
Ryan Supply Co 814 21 N E

MISSOURI

BUTLER

Henry Radio Co 211 W Main St 395

CAPE GIRARDEAU

General Electric 402 S Spring 805
*Sandrum Electronic 902 S Spring 5-3757

HANNIBAL

York Radio & TV 2205 Market St

JEFFERSON CITY

*Central Mo Distr Co 324 E Capital Ave

JOPLIN

*Brotherson Co M 515 N Byers Ave 1596
*Four States Radio 201 Main St 979
General Electric 922 Penna Ave 5622

KANSAS CITY

*Burstin-Applebee 1012 McGee St BA 1155
Columbian Elec 2603 Grand Ave GR 1001
Continental Electric 1321 W 13 GR 1180
Electronics Supply 3536 Main St WE 3383
Gaines & Co J G 1730 Grand BA 4-4444
General Elec 2101 Broadway MA 7447
Graybar Elec Co 1644 Baltimore Ave BA 1644
*Henshaw Radio 3617 Troost Ave WE 5550
*Manhattan Radio & Equip 1732 Grand Ave BA 9797
*McGee Radio & Electric 1322 Grand Ave VI 9045
RCA Victor Distr Corp 2113 Broadway MA 0300
Radiolab 1612 Grand Ave MA 0171
*Walter's Radio Supply 3645 Main St

POPLAR BLUFF

*Tri-State Radio 536 E Pine Blvd 2821

ST. JOSEPH

*Acme Radio Supply 819 S 8 St 4-0651
American Electric Co 116 N 4 St
*St Joseph Radio 720 S 9 St 2-8000

ST. LOUIS

*Ashe Radio Co Walter 1125 Pine CH 1125
Brightman Distr 4421 Ridgewood SW 7575
Brown Radio Co Tom 3924 Washington St JE 1-2259
*Ebinger Radio 2501 S Jefferson MO 7700
Fridley Bros 6510 Page St PA 1-8600
General Elec Supply 2653 Locust St NE 3000
Gordon Radio 1118 Pine St CE 4777
Graybar Electric 2642 Washington Ave NE 4760
Hollander & Co 3900 W Pine OL 3900
*Interstate Supply 24 S 10 St CH 2325
Napper Electronic Supply 6253 Natural Bridge Av. GO 8358
Phone Craft Co 427 N Euclid RO 3147
Radio Communications 1921 Olive CE 9754
*Radonics 5040 Easton Ave RU 7311
Stone Distr 1933 Washington MA 1200
Toler Radio Ralph 4855 Easton Ave FO 1-9169
*Van Sickle Radio 1113 Pine St CH 1814
Westinghouse Elec 5049 Fyler SW 2000

SPRINGFIELD

Four States Distr 700 E Brower
Gaines & Co J G 351 Boonville hqrs Kansas City
General Elec 1301 W Webster 2-1722
*Reed Radio Supply Harry 805 Boonville
Stout Radio Supply 700 Boonville 2-9444

MONTANA

BILLINGS

American Appliances 2505 Montana St
Central Distr Co P O Box 1551 B-8447
Electronic Supply 214 11 St W 2-2727
General Elec 2710 Montana Ave 9-4559
Heard Supply 3008 1st St N
Marshall-Wells Co
Midland Implement 2301 Montana Ave
Northwestern Auto 420 N Broadway 3-3146
Smith Supply 2521 Montana Ave 9-2055

BUTTE

General Electric 900 E Front St 2-2314
Graybar Electric 604 E Aluminum St 3233
Smith Supply 425 S Arizona 2-8278
Smitty's Electronics 126 W Broadway
Westinghouse Electric 949 S Montana St 2-1269

GREAT FALLS

Lindgren Co Geo 16 4 St N W 8721
Radio Electronic Box 1376 6-6645
Smith Supply Co 808 Central Ave 2-4834

HAVRE

Lund O B 426 1st St
Valley Motor Supply Box 1271

HELENA

Latas & Co DN 1531 Nat'l Ave 3182

MISSOULA

Northwest Distr 509 S Higgins 4311

NEBRASKA

LINCOLN

General Radio & TV 322 S 12 St 2-6000
*Hicks Radio Co 1122 "D" St 2-7561
*Leach Radio Supply 243 S 11 St 2-2797
Scott Electronic Supply 2201 W St

NEBRASKA CITY

Arbor Radio TV Supply 921 Central 757

OMAHA

Alen Radio 4011 Cuming St WA 8461
Bi-State Distr Corp 911 Douglas St
General Appliance 1101 Harney WE 4620
General Elec Supply 914 N 18 St JA 0456
Graybar Electric 1120 Capitol Ave AT 5740
*JB Distr Co 1616 Cam St AT 5525
Noll Co M C 2226 Harney St
Omaha Appl 18 & St Mary's At 3440
*Radio Equip Co 2852 Douglas At 7700
*Sidles Co 502 S 19 St WE 8400
Westinghouse Elec 117 N 13 WA 8700

SCOTTSBLUFF

Joachim Radio 1913 Broadway 109

Raber Supply 1305 1st Ave 700

YORK

Radio Supply 110 E 7 37

NEVADA

LAS VEGAS

Electronic Supply B E Charleston
Metcalf's Radio 819 Oaden 5585
Siviers Elec Prod 101 E Charleston hqrs Reno

RENO

Osborne & Dermody 255 Chestnut St 2-6957
Siviers Elec Prod 640 Sierra St 2-9134

DISTRIBUTORS SERVING the ELECTRONIC INDUSTRIES

NEW HAMPSHIRE

CONCORD
 *Evans Radio 10 Mills Ave 1702
DOVER
 *American Radio Corp 510 Central Ave 404
MANCHESTER
 *DeMambo Radio Supply 1308 Elm St 4-4006
 hqrs Boston Mass
 General Elec 57 Bedford 5-5418
 Graybar Electric 103 Hampshire Lane 4-4341
 *Radio Serv Lab 670 Chestnut 5-5444
 Westinghouse Electric 147 Hanover 5-5456

NEW JERSEY

ATLANTIC CITY
 Almo Radio Co 4401 Ventnor Ave hqrs Philadelphia Pa
 *Kearns Inc Marlborough & Atlantic AT 5-3233
 M & H Sporting Goods hqrs Philadelphia Pa
 *Radio Elec Serv 452 N Albany Ave hqrs Camden
BLOOMFIELD
 Berger Electronic 241 Bloomfield BL 2-7900
BRADLEY BEACH
 Holman's Radio & TV 518 Main PR 5-5870
BRIDGETON
 *Joe's Radio Shop 67 S Pearl 9-0251
CAMDEN
 Almo Radio Co 1133 Haddon Ave EM 5-1960 hqrs Philadelphia Pa
 General Radio 600 Penn St WO 4-8393
 Radio Elec Service 513 Cooper St WO 4-2830
CLIFFSIDE
 Midisco hqrs Jersey City
CLIFTON
 Eastern Radio 1055 Main Ave GR 3-6765
COLUMBIA
 Columbia Distr Route 8 PO 42
EAST ORANGE
 Gross Distr 444 William St OR 6-8100
 *International Distr 185 Central OR 51927
ELIZABETH
 Jersey Radio-TV Supply 1068 Elizabeth Ave EL 2-7342
 New Jersey TV Supply 906 E West Rd EL 3-6166
FARMINGDALE
 Holmans Radio & TV Supply 85 Main St
HACKENSACK
 American Distr 115 Hudson St hqrs North Bergen
 Midisco hqrs Jersey City
 Trade Radio Sales 14 Essex St HU 7-5512
HIGHLAND PARK
 Park Electr Rt 37-Lincoln Hwy KI 5-3363
HILLSIDE
 Sherwood Distr 1255 Liberty Ave EL 2-1126
JERSEY CITY
 General Electric 157 Tonnelle Ave JD 2-3620
 *Hallmark Electric 592 Communipaw DE 2-9696
 Midisco 713 Newark JO 2-2360
LYNDHURST
 *Economy Electronics 624 Ridge Rd WE 9-7418
MORRISTOWN
 M & M Television 7 Maple Ave MO 4-5274
MORRIS PLAINS
 Park Electronics 187 Speedwell MO 4-6922
NEWARK
 All-State Distr 457 Chancellor WA 3-4900
 Apollo Distr Co 15 Shipman MI 2-7266
 *Continental Sales 521 Bloomfield HU 2-8223
 Electronic Marketers 25 Hoyt St MA 3-2516
 Emerson-New Jersey 985 Broad MA 2-2217
 *Federated Purchaser 114 Hudson MA 3-9035 hqrs New York N Y
 General Elec 254 Elizabeth Ave BI 2-1600
 Graybar Electric 2 Liberty St MA 2-5100
 Gross Distr Co 49 Edison Pl MA 2-8028
 Hudson Radio & TV 35 William MA 4-5151
 Igoe Bros 35 Halsey St MA 4-2000
 *Krich-New Jersey 428 Elizabeth BI 8-7408
 *Lippman & Co Aaron 99 Newark St MA 3-9477
 Mytelka & Rose 1020 Broad MA 3-6272
 O'Loughlin & Co T A 88 Washington St MI 3-8200
 Pyramid Supply 343 W Market MA 3-7800
 Radio Wire Television 24 Central Ave MA 2-1661
 Variety Electric 468 Broad MA 2-6760
 Westinghouse Elec Supply 528 Ferry MI 2-3450
NEW BRUNSWICK
 Park Electronics RDS 37 Lincoln KI 5-3363
 William Radio Supply 265 Woodbridge CH 7-4908
NORTH BERGEN
 American Distr 6335 Hudson Blvd UN 5-8027
PATERSON
 General Elec 561 E 31 St LA 5-5100
 *Jersey Electronic Distr 524 21st Ave LA 5-3134
 Trade Radio Sales 780 E 18 St hqrs Hackensack
PERTH AMBOY
 Bennett's Radio 327 Maple St PE 2-1736
PHILLIPSBURG
 *Williams Co C B 154 S Main St 5-1245
PLAINFIELD
 Lafayette Radio 139 W 2 St PL 6-4718
 Union TV Parts 403 Watchung Ave PL 4-6930
RED BANK
 Monmouth Radio 404 Shrewsbury Rn 6-3300
RIDGEFIELD PARK
 NRM Wholesale Radio 284 Teaneck Rd MU 7-0715
TEANECK
 Rosa Homer M 367 Queen Anne Rd TE 6-5331
TRENTON
 Allen & Harley 23 S Warren 3-0386
 Allied Electric 333 S Warren TR 9-4535
 Cooper Sales 109 Factory TR 2-8008
 Dragon Co 959 Liberty St 4-1479
 Fineburg's 547 S Broad TR 4-5125
 General Elec Supply Brunswick Ave Ext TR 3-9865

Midisco 126 S Warren St 3-4536
 Westinghouse Electric 745 E State TR 5-5421

NEW MEXICO

ALBUQUERQUE
 General Electric 820 N 1 2-5246
 Midland Specialty 1624 N 1 St
 Miller Supply 211 W Coal Ave 2-3450
 Radio Equip Co 523 S Central St
 Walker Radio L 8 114 W Granite St
 Westinghouse Electric 816 1 St N W 3-3708
BOSWELL
 Supreme Radio 129 W 2 St 148
SANTA FE
 A-1 Communications 110 W Palace Ave

NEW YORK

ALBANY
 Air Wave Electr Rad Distr 213 Hudson
 *Ft Orange Radio 904 Broadway 5-1594
 Graybar Electric 40 Van Woort 5-1564
 R T A Distrib 36 Broadway PR 5-7346
 *Taylor Co E E 465 Central 8-8713
 Wayne Merriam A Maplowood Ave Ext
 Westinghouse Electric 19 R R Ave 8-7801
AMSTERDAM
 *Adirondack Radio Supply 32 Gay Park 3296
AUBURN
 *Dare Radio 22 Genesee 2-0441
 Roberts & O'Brien 191 Hardenbergh Ave
BAYSHORE See Long Island
BELLEROSE See Long Island
BINGHAMTON
 Broome Distr 221 Washington St
 *Federal Radio 188 State 2-2394
 Int'l Radio & TV 138 Southaven St
 L & K Electric 72 State St 2-7261
 Morris Distr 195 Water 4-2461
BUFFALO
 Bergman Co W Oak & Eagle MO 6300
 Bison Electrical 1137 Main St LI 8447
 Buffalo Radio 219 E Genesee WA 9004
 *Dymac Inc 2329 Main PA 2300
 Faysan Distrib 506 7th St SU 1300
 General Electric 960 Basti EL 5100
 *Genesee Radio & Parts 205E Genesee CL 1970
 Graybar Electric 180 Perry WA 3700
 Heron Electronics Supply 324 N Oak St MO 6865
 RCA Victor Dist 1209 Broadway FI 1209
 Radio Elec Prods 186 E Genesee CL 6457
 Radio Equipment 147 Genesee MA 9676
 Rains Co W E 11 W North SR 4944
 Scheller Radio 269 Oak MA 3081
 Standard Elect 1501 Main GA 5000
 Strano Co Joseph 25 High SU 8080
 Summit Distrib 916 Main GA 3100
CORTLAND
 Mitchell Radio 37 Central SK 3-0868
ELMIRA
 *Harrison Co F C 108 W Chereh 7921
 LaValley-McLean 312 State St 6163
 Rose-Kimball-Barber 511 Baldwin St
FARMINGDALE See Long Island
FLUSHING See Long Island
FREDONIA
 Barker-Higbee 27 Water 2-8666
GLENS FALLS
 *Ray Distr 284 Glen 2-5848
GLOVERSVILLE
 Fulton County Dist 16 Bleacher 5-2515
GREAT NECK See Long Island
HEMPSTEAD See Long Island
HICKSVILLE See Long Island
HORNELL
 Hornell Elec Motor 286 Main St 2451
ITHACA
 *Stallman of Ithaca 123 S Tioga 4-2297
JACKSON HEIGHTS See Long Island
JAMAICA See Long Island
JAMESTOWN
 Johnson Radio 119 Hunt Rd 8-916
 Warren Radio 31 Forest 2-8185
JOHNSON CITY
 Westinghouse Elec 419 Grand Ave 9-1561
KINGSTON
 *Arace Electronics 25 Henry 6622
MALONE
 Pond Electric 123 E Main St
 Ray Distr 55 W Main St 1966
 Vermont Hdqrs hqrs Burlington Vt
MIDDLETOWN
 Artee Distr 17 Cottage 3173
 *Cortland Elect Montgomery Rd 2-1055
 Reskin Bros 27 W Main
 S & L Electronics 17 Cottage 3175
MINEOLA See Long Island
MONTEICELLO
 Fieisher Distrib 248 Broadway 1820
MOUNT VERNON
 Davie Radio 70 E 3 MI 4-0747
 Radeleo Inc 246 W 1 MO 8-6173
NEWBURGH
 Chief Electronics Hqrs Poughkeepsie
 Newburgh Distr 354 Liberty St 4830
 Shapiro Distrib 315 Broadway
 Westinghouse Electric 26 Liberty 5420
NEW YORK CITY, BRONX & STATEN ISLAND
 Adson Radio & Elec 221 Fulton BA 7-3629
 Arrow Electronics 82 Cortlandt DI 9-4714
 Bay Electronics 1736 Jerome Ave LU 3-2384
 B & D Distr 639 Tompkins Staten Island GI 7-2660
 Bonafide Radio 89 1/2 Cortlandt WO 2-5960
 Bronx Wm Radio 470 E Fordham Rd FO 4-4662

*Bruno-New York 460 W 34 LO 4-2425
 Commercial Radio-Sound 231 E 47 PL 9-5100
 Concord Radio 55 Vesey DI 9-1133
 Consolidated Radio 768 Amsterdam AC 2-2678
 Dale Distr Co 40 E 32 MU 9-5252
 Dalls Inc M L 175 Varick AL 5-3000
 Dorfman Co L E 40 E 32 MU 9-5252
 Dorris Distr 10 W 13 OR 6765
 Douglas Radio Sup 128 Greenwich St WO 4-0470
 DuMont Labs Allen B 1114 1 TE 8-8100
 Edlie Elect 154 Greenwich DI 9-3143
 Electronic Wholesalers 5047 Broadway LO 9-4906
 Electronics Center 118 Duane St BA 7-2241
 Emerson-N Y Inc 111 B Ave WA 9-2264
 *Federated Purchaser 66 Dey St DI 9-3050
 Federated Semi-Conductor 66 Dey III 9-3050
 *Fischer Distr 118 Duane St BA 7-1511
 *Fordham Radio 265 E 149 St LU 5-0330
 General Electric 585 Hudson AL 5-3300
 Goldman Louis 251 W 42nd St BR 9-8872
 Graybar Electric 420 Lexington LE 2-4000
 Graylock Electronics 115 Liberty BE 3-0224
 Gross Distrib 214 W 14th St WA 4-5900
 Haas Electronics 862 Southern DA 9-1466
 Harrison Radio 225 Greenwich BA 7-7777
 Harvey Radio 103 W 43 LU 2-1500
 Hobb Electrical 541 W 34 St LA 4-9200
 Hoffman Elect 253 E 72 RH 4-0400
 *Hudson Radio & TV 48 W 48 Cl 6-4060
 HuGo Radio & TV 1275 Webster LU 8-0991
 Lafayette Radio 542 E Fordham Rd FO 7-8813
 Latham & Co E B 250 4 Ave AL 4-2200
 Leadf Elec & TV 215 Fulton St WO 4-2882
 *Leonard Radio 69 Cortlandt Co 7-0315
 Midway Radio 60 W 45 MU 7-5053
 *Milo Radio & Electronics 200 Greenwich BE 3-2980
 *National Radio 1348 Southern Blvd BA 8-8800
 North Radio 172 Washington CO 7-1430
 D & W Radio 141 Cedar CO 7-2635
 *Powell Radio 142 W 169 CY 3-2623
 Radio Wire TV 100 E 6 Ave RE 2-8600
 *Sanford Elect 157 Chambers DI 9-0550
 *Slate & Co 2755 Webster LU 4-0614
 *Stan-Burn Radio 1697 Broadway CO 5-8138
 Son Radio & Electronics 650 E Ave OR 5-8600
 *Sylvan-Wellington 269 Canal CA 6-5811
 TAB Co 111 Liberty St RE 2-6245
 *Terminal Radio 85 Cortlandt WO 4-3311
 Time Electronics Sales 368 Broadway BA 7-3922
 Tri-Par Distr 1403 Bronx River Ave TY 3-7060
 *United Radio 47 W 63 EN 2-9695
 Western International Co 45 Vesey DI 9-2276
 Westinghouse Electric 40 Wall WH 3-4321
 *Wilco Radio 383 E 138 MO 9-1654

LONG ISLAND

BROOKLYN N Y
 Ace Electronics 2610 E16 St NI 8-5212
 Acme Electronics 74 Willoughby TR 5-3836
 Bonray Electronics 485 Coney Island BU 7-9650
 Brooklyn HiFi Sound Center 2128 Catoe Ave BU 2-5300
 *Buchman Radio 492 Atlantic UL 5-5143
 Electronic Equip 2912 Atlantic TA 7-6300
 General Electric 135 Kent EV 7-1020
 *Green Tele-Radio 472 Satter NY 5-0200
 Hygrade Electronics 3509 E N Y HY 4-9237
 Laco Electronics 4924 4th Ave Hy 5920
 *National Radio Parts Distrib 572 Albany PR 8-0800
 *Stan Barn Radio 558 Coney Island UL 3-0700
 Witalm Electronic 126 Manhattan EV 8-0945
BAY SHORE
 L I Electronic Supply 226 E Main St
BELLEROSE
 Long Island Teleparts 248-52 Jamaica FL 4-2273
FARMINGDALE
 *Strong Television 286 Main St FA 2-2004
FLUSHING
 *Metville Radio 160-13 Northern Blvd Hqrs White Plains
FOREST HILLS
 Berger Distr 109-01 72 Rd
GREAT NECK
 Rotary Electronic 10 Grace Ave GR 2-0902
HEMPSTEAD
 Arrow Electronics 215 Front St
 *Davis Electronics 204 Main St IV 3-9200
 *Island Radio 412 Fulton NE 2-1097
 *Standard Parts 277 N Franklin NE 2-3131
 Westinghouse Elec 42 Chaner NE 2-1816
HICKSVILLE
 Com Electronics Distr 236 Broadway MI 3-3400
 General Electric 4 & Bway MI 3-1890
JACKSON HEIGHTS
 *National Radio Distr 73-20 Northern Blvd HA 6-0040
JAMAICA
 Bear Electronics 138-55 Jamaica Ave JA 3-1353
 *Chanrose Radio 170-16 Jamaica OL 8-2900
 Electronic Maintenance 172-24 Jamaica Ave JA 3-2870
 Harrison Radio Corp 144-24 Hillside Ave RE 9-4102
 Hqrs New York N Y
 *Norman Radio 94-29 Merrick Rd RE 9-4651
 Peerless Radio Distr 92-32 Merrick Rd RE 9-6080
LONG ISLAND CITY
 Electronic Supply 41-08 Greenpoint ST 6-2730
 Graybar Electric 21-15 Bridge Plaza EX 2-2000
 Mannfred Electronics 21-26 36 Ave Ex 2-6000
 Philco Distr 47-51 33 St ST 6-8400
 Robinson TV Electronics 26-06 Jackson Westinghouse Elec 29-50 Northern Blvd MU 6-7700
MINEOLA
 Emerson-Long Island Inc GA 7-1506
 Schueber Electronics 122 Norricka GA 7-6520
PATCHOQUE
 South Bay Radio 125 W Main St 4488

DISTRIBUTORS SERVING the ELECTRONIC INDUSTRIES

PLAINRIDGE

Standard Parts 39 Plainridge Dr LE 3-8823

WOODSIDE

Boro Electronics 69-18 Roosevelt Ave MA 6-9718
(end of Long Island)

NIAGARA FALLS

General Electric 11 & Whitney 6921
Niagara Falls Radio 1363 Plover N 1-5531
Niagara Radio & Parts 1518 Main

OLEAN

Wanamaker & Redstone 415 N Union St

ONEONTA

Greash Distr 202 Main 2596

PEEKSKILL

B & B Electronics 1607 Main 7-3150
General Electric 1000 N Division 7-1601

PLATTSBURG

Ray Distr 13 Salfly Ave 3371

PORT CHESTER

Rates Inc 136 Irving PC 5-0051

POUGHKEEPSIE

Chief Electronics 14 N Bridge St 7300
Mid-Hudson Elec 408 Main St
Victory Specialties 6 Raymond 7247

ROCHESTER

Bickford Bros 208 St Paul BA 7300
Erskine-Moody 420 St Paul LQ 7980
General Electric 67 Mortimer MA 7500
Graybar Electric 186 N Water BA 7700
Hunter Electronics 233 E BA 8110
Kemp Equipment 57 Mt Hope NA 8050
Masline Radio 192 Clinton N HA 0790
National Sales 56 Rutter St GL 9270
RCA Victor Distr 120 Portland Ave LO 4180
Radio Parts & Equip 108 Sylvan Rd MO 5272
Rochester Radio 114 St Paul LO 9900
Westinghouse Electric 1048 University MO 1635

ROME

Romo Electronic Supply 404 W Dominick 2215

SARANAG LAKE

Starks & Co G L B Woodruff Ave

SCHEMECTADY

Electric City Radio 1566 State
Schwartz & Son Maurics 710 Broadway

SYRACUSE

Baldwin-Mall Co 475 Orange 3-5103
Berndt Co W E 655 S Warren 2-3385
Broome Distributing 100 Tolley 75-3176
City Electric 514 W Genesee 3-5171
Graybar Electric 327 N West 2-1281
Karl-William Co 404 S Crown 75-2755
Lincoln Supply 109 Otisco 4-3170
Morris Distr 1153 W Fayette 75-0791
Onondaga Supply 344 W Genesee 74-1251
Paul-Jeffrey Co 519 Erie E 75-4126
Penfold Mfg 516 Erie 75-4154
Radio Supply 200 Walton 3-3197
Reliance Distr 343 W Jefferson 75-2157
Roberts & O'Brien 714 Park 2-0421
Smith Inc S W 325 E Water 2-7768
Spinnery Co BH 1129 W Fayette 75-2153
Stage Roy C 265 Erie Blvd W 2-8686
Syracuse Radio 620 S Salina 74-2927
Syracuse TV Accessory 217 W Willow 74-3978
Thelton Inc 935 Erie E 75-4126
Westinghouse Electric 961 W Genesee 74-3331

TROY

McRae & Co H A 137 River 2-8720

Trejan Elec Sup 15 Middleburg St AS 4-4481

UTICA

Beacon Electronics 411 Columbia St 5-4411
Electronic Lab 1415 Oriskany W
Langdon & Hughes 233 Elizabeth St
Miller Electric 11 Hopper St
Vaeth Electric 35 Genesee 2-5177
Westinghouse Elec 112 N Genesee St 4-8116

WATERTOWN

Beacon Electronics Hdgrs Utica
Westinghouse Electric 245 State 6527

WHITE PLAINS

Emerson Radio 285 Mamaroneck WN 6-3816
Melville Radio 259 Mamaroneck WN 8-6131
Westchester Elec 602 Mamaroneck WN 9-5765

YONKERS

Yonkers Elec 541 Nepperhan YD 9-6044

NORTH CAROLINA

ASHEVILLE

Fresh Radio Supply 38 Biltmore Ave 3-3633
General Electric 47 Banklin 2-3517
Graybar Electric 221 Patton Ave 3-4761
Lonsg Distr 12 Biltmore Ave 3-4371

BURLINGTON

Womack Electric Supply 623 Worth St

CHARLOTTE

Allison Erwin 209 E 5th St
Dixie Radio 715 W Morehead 4-4688
General Electric 700 Tuckasee 5-7321
Graybar Electric 120 W Morehead 6-4886
Major Appliance Distr 1231 W Morehead
Radiotronic Distr 208 N College 2-1258
Shaw Distr 205 W First St 6-3533
Southern Radio 1625 W Morehead 6-4461
Walker-Martin 2315 N Davidson St 4-4613
Westinghouse Electric 324 N College 5-3715

DURHAM

Graybar Electric 303 S Duke 2-113
Womack Electric Supply 304 S Dillard 5197

FAYETTEVILLE

Eastern Radio 532 Hay 2-7161

LASTONIA

Bryant Supply 605 E Franklin 5-3466

OLDSBORO

Signal Radio Kingston Hwy 3234
Womack Electric Supply 405 W Walnut 2252

GREENSBORO

General Electric 1111 Willowbrook 3R208
Johannessen Elec 312 N Eugene 3-6906
Southeastern Radio Hdgrs Raleigh
Westinghouse Elect 1410 Westover Ter 3-8661

GREENVILLE

General Electric 200 Henker Rd 5104

HIGH POINT

Womack Radio Supply 654 N Main St

MOREHEAD CITY

Machine & Supply Co 2-5971

RALEIGH

Allied Electronics 413 Hillsboro 3-4627
General Electric 800 W Poole 3-4693
Nash-Steele-Warren 615 W Hargett St
Southeastern Radio 414 Hillsboro 3-1936
Walker-Martin P O Box 391 LD 950
Westinghouse Electric 319 W Martin 3-4841

SALISBURY

Leonard Electronics 210 E Innes 5281

WASHINGTON

Jewdy Distributing 40

WILMINGTON

French Radio 1220 Dock 9878

WINSTON SALEM

Dalton-Huge 924 W 4 2-5141
Graybar Electric 955 Brookstown J 4-2461
Leonard Electronic Supply 409 W End Blvd
Williams Radio C R 211 S Liberty

NORTH DAKOTA

FARGO

Bristol Distr 419 Northern Pacific Ave 2-7493
Dakota Electric 1017 4 N 2-3301
Fargo Radio 515 3rd Ave 2-1872
Hayer Co FC 714 1st Ave N 2-7479
Radio Equipment 624 2nd Ave N 5-462
Westinghouse Elec 109 Roberts 2-4446
Welter Electronics 65 S St N 4886

MINDT

McFall Radio 3 N Main St

OHIO

AKRON

Akron Radio/TV Parts 107 S Arlington St
Electronic Engineering 362 W Bowery FR 6-3191
General Electric 225 E Hill FR 8195
Graybar Electric 185 Carroll JE 4-4143
Main TV Supply 1013 N Main St WA 8-2117
Olson Radio 73 E Hill St JE 9191
Sacks Electric 605 S Main St JE 8196
Strang-Carlisle-Hammond 422 S Broadway Hdgrs
Cleveland
Sun Radio 110 E Market St HE 2171
Warren Radio 71 S Broadway HE 2729

ASHTABULA

Morrison's Radio 331 Center St 39-936

CANTON

Armstrong Electr Contr 1261 Cleveland N
Barroughs Radio 711 2 St NW 5-0273
Fall Radio Supply 410 Arlington Ave NW 5-8451
General Electric 123 6 St SW 4-5187
Sommer Electric 818 3 St NE 5-9454

CHILLICOTHE

Chillicothe Hardware 148 N Hickory St

CINCINNATI

Chambers Electronic 1669 Central Pkwy MA 7616
General Electric 215 W 3 St GA 1750
Graybar Electric 115 W McMillan MA 0600
Herrlinger Distr 15 & Vine Sts CH 7273
Holub & Hogg 1400 Sycamore St CH 7974
Hughes-Peters 1128 Sycamore St DU 8433
Lockie & Giann 2110 Gilbert W 3396
Myronic 121 W Central Pkwy GA 2245
Ohio Appl 804 Sycamore St DU 5430
Pensler-Gaubert 2844 Spring Grove Ave MU 6300
Radio/TV & Refr 1129 Walnut MA 2940
Scheater Electric 321 E 8 St CH 7610
Steinberg 633 Walnut St CH 1880
Teletronic Supply 3935 Montgomery Rd
Tri-State Distr 8th & Broadway DU 7400
United Radio 1314 Vine St CH 6530
Westinghouse Elect 3011 Stanton CA 1300

CLEVELAND

Broadway Electric 6209 Broadway DI 1-8500
Carnegie Radio Distr 2536 Prospect Ave CH 1-2433
Eacild Radio 16379 Eacild GL 1-1375
Freshman Chas 4019 Prospect EX 1-8723
General Electric 4958 Woodland Ave HE 1-7280
General Radio Supply 1588 Hayden Ave UL 1-0700
Goldhamer 2239 E 14 St CH 1-1690
Graybar Electric 1010 Rockwell CH 1-1360
Kane 1666 E 40 St EX 1-4800
Main Line Cleveland 5005 Eacild EX 1-1800
Northern Ohio Appl 1609 E 21 St 1-0700
Northern Ohio Labs 2073 W 85 W 1-2756
Olson Radio 2020 Eacild MA 1-6187
Pioneer Electronic 2115 Prospect Ave SU 1-9410
Progress Radio 413 Huron Rd CH 1-5630
Radio & Electronics Parts 3235 Prospect Ave UT 1-6060
Strong & Carlisle-Hammond 2801 St Clair MA 1-9165
Taylor G W 2157 Fairhill Rd. SW 1-5442
Tocco Distr 4501 Prospect HE 2-1040
Teletronic Distr 3600 Ridge Rd ME 1-7100
Westinghouse Elect 1809 E 22 St 1-5660
Winteradio 1468 W 25 St MA 1-9383

COLUMBUS

Bennett Distrs 1051 W Goodale Blvd CA 4-5216
Electronic Supply 134 E Long St
General Electric Supply 146 N 3 St FL 4371
Graybar Electric 3 & Chestnut St FL 3811
Hughes-Peters 111 E Long MA 4356
Kane 168 N 3 St Hdgrs Cleveland

Ohio Appliances 241 N 4 St MA 7836
Thompson Radio 182 E Long MA 7434
Tracy-Wells 175 N Front St
Westinghouse Electric 266 N St MA 5571
Whitehead Radio 124 E Lona St AD 6131

DAYTON

Allied Supply 359 W Monument MI 9833
General Electric 601 E 3 St MI 0781
Graybar Electric 332 W Monument Ave MI 5665
Hughes-Peters 300 W 5 St MI 8551
Moore Equip Inc 18 Breen St HE 2841
Ohio Appliances 430 Lee St MI 0343
Sroppe 314 Lee St MI 3874
Stotts-Friedman 135 E 2nd St
Thompson & Hamilton 118 S Terry AD 9193
Westinghouse Electric Supply 226 W 5 St MI 0331
Yents Radio & Appl 531 E 3 St HE 6777
York Supply 531 E 3 St AD 5177

ELYRIA

EI-A-Co 235 Leal St 2169

LANCASTER

Blitzacker Electronics 135 W Chestnut St 2137
Snyder Electric 319 Forest Hwy 2986

LIMA

Allied Supply 460 S Main St Hdgrs Dayton
Hatch & Son 125 S Elizabeth St 98111
Lima Radio Parts 600 N Main St 6-6551
Northwestern Radio 131 S Elizabeth St 4-2878
Warren Radio Co 222 S Elizabeth St 7-2011

MAANSFIELD

Barroughs Radio 218 E 2nd St 1691-6
Main TV Supply 488 Johns Ave
Wholesaling Inc 775 Springmill 7287-6

MARIETTA

Marietta Radio & Elect 221 2 St 1677

MARION

Bell Radio 527 N Main St 2-5513
Dillman Radio Supply 389 W Center St 2-8063
Serray Distributing 213 N Main St 2-0031

MASSILLON

Martin M H 1118 Lincoln Way E 2-7467

PORTSMOUTH

General Electric 1723 10 St 3-2341
Graybar Elec Co 923 Washington St
King & Irwin 1007 Lawson St
Sound Elec Supply Co 7 & Finley St

SANDUSKY

Boro Electronic Parts 119 E Water 2471

SPRINGFIELD

Eberle's Radio Supply 522 W Main St 3-8552
Standard Radio 119 W Main St 2-1297
Wholesale Supply 256 E Main St

STUEBENVILLE

D & R Radio Supply 221 S 3 St 3-3643
Hansford Radio Supply 116 N 3 St 2-4391

TOLEDO

Arnold's Equipment 1212 Norwood Ave
Arnold's Furnace & Equip 2911 Stelkey
Benzar Distrs 1034 Grand Ave EA 6753
General Electric 28 W St Clair's Ad 5104
Gorlinger Equipment 1001 Adams St
Graybar Electric 1700 Canton Ave MA 9166
Harry's Auto-Radio 713 Adams St FA 3447
Howard's Electronic 135 17 Ad 2277
Lifetime Electronics 1501 Adams St MA 5643
Main Line Distributors 380 S Erie St GA 4996
Selectronic Supplies 1320 Madison Ave FU 3361
Toledo Radio Spec 1215 Jackson St AD 5828
Warren Radio 1002 Adams St FU 3364
Westinghouse Electric 1225 Indiana AD 6184

WARREN

D & J Electronic 236 Vine Ave SE 3721-6
Radio Specialties 136 Pine St SE 5877-0

WASHINGTON COURT HOUSE

Hutch & Son 209 E Market 5-6961

YOUNGSTOWN

Appliances Wholesalers 1197 Wick Ave
General Electric 265 W Rayon Ave 4-1111
Graybar Elec 602 W Rayon Ave 4-0124
Hamburg Bros 360 E Federal 3-2101
Hood Electric Co 128 W Rayon Ave 4-0255
Radio Parts 230 E Boardman St Hdgrs Pittsburgh Pa
Ross Radio 325 W Federal St 6-6388

ZANESVILLE

Thompson Radio 135 S 6 St 2-7311

OKLAHOMA

LAWTON

Radio Supply 2824 Fort Hill Blvd
Reynolds Radio 909 1/2 C Ave 1292

MEALSTER

S E Oklahoma Radio Supply 325 W Jackson 1240

MUSKOGEE

Hughes Electronic Supply 229 Court St 2-9651

OKLAHOMA CITY

Admiral Distrs 1017 W Reno St
Capital Distr 1017 W Reno St
Dalancy's 44 & Cooper Sts RE 9-1691
Electronic Supply 212 N W 10 CE 2-5215
Foster Co M L 27 E Grand St
General Electric 127 E Calif Ave FO 5-5475
Graybar Electric 12 E California 3-9551
Maxwell Co Leo 409 N Classon St
Miller-Jackson 121 E Calif St FO 5-8426
Radio Supply 724 N Hudson St CE 2-6128
Southwest Radio & Equip 3N E 8 St RE 6-8535
Westinghouse Electric 850 N W 2 St 2-7101
Wolfe Distr 710 N W 2 St

TULSA

Electronic Supplies 219 E 1 St 4-6129
General Electric 18 N Guthrie St 3-6121
Graybar Electric 2406 E 12 St 6-1251
Industrial Electronic Supply 1124 B 4th
Midwest Electronic 219 E 1 St 94-6129
Oil Capitol Electronics 923 E 4 5-7824

DISTRIBUTORS SERVING the ELECTRONIC INDUSTRIES

Tulsa (continued)

Patterson Radio 211 E 13 S-3179
 *Radio Inc 1000 S Main 4-9127
 Southwest Radio & Equip 34 N Madison TU 2-5113
 *S & S Radio 537 S Kenosha St
 Westinghouse Electric 307 E Brady St 3-7155
 Wholesale Radio Supply 538 S Lewis St

OREGON

EUGENE
 *Carlson Matten & May 96 E 10
 Gilbert Bros 424 Charnelton St hqrs Portland
 Graybar Electric 2180 6 Ave 4-2224
 United Radio Supply 712 W 6 Ave hqrs Portland

KLAMATH FALLS

R F Supply 2367 S 6 St

MEDFORD

*Walker Co V G 205 W Jackson 2-4558
 Westinghouse Elec Supply Co 1233 Court St

PENDLETON

Harolds Radio Supply 320 SW Court Ave 1956

PORTLAND

Appliance Whole 600 N W 14 AT 6584
 *Central Distrib 1131 NW Couch AT 0146
 Connelly Co F B 905 NW 12th Ave CA 1755
 General Electric 300 N W 14 Ave BR 0651
 Gilbert Bros 826 S W 2 Ave BR 5641
 Graybar Electric Park & Flanders BR 6641
 M & R Radio Supply 5210 NE Sacramento TR 0057
 Instrument Lab 1728 SW Harbor Dr CA 6863
 Johnson Co Lou 422 N W 8 St CA 9551
 Marshall Wells 1420 NW Lovejoy BR 6421
 North Pacific Supply 2344 NW 21 Pl CA 1011
 Northwest Radio Supply 717 S W Ankeny AT 1021
 Pacific Stationery 414 S W 2 CA 4221
 *Portland Radio 1234 W Stark St AT 8647
 Saens Radio 1605 N W Everett BE 2423
 *Stubbs Electric 33 N W Park Ave BR 5404
 Television & Radio 720 SE Alder EA 1104
 *Tracy & Co N W 10 & Gilson Sts BE 6263
 *United Radio Supply 22 N W 9 Ave BE 6323
 Westinghouse Elec 815 N W 12 Ave CA 9851

SALEM

Gilbert Bros 355 N High St hqrs Portland
 Johnson Co Lou 1051 S Commercial hqrs Portland

PENNSYLVANIA

ALLENTOWN

*Federated Purchaser HE 3-7411 hqrs New York NY
 General Electric 1249 Liberty St HE 3-5206
 Graybar Electric 1941 Hamilton HE 4-9341
 Luckenbach & Johnson 1828 Tighman St 4-6235
 Paters A A 231 N 7 St HE 4-9361
 Radio Electric Service 1042 Hamilton hqrs Philadelphia

ALTOONA

Altoona TV Supply 1713 Union Ave 4-0827
 General Electronics hqrs Wheeling W Va
 *Hollenbach's Radio Supplies 2221 8th Ave 6171
 Kennedy's Radio Supply 1500 7 Ave

AMBRIDGE

Barrett Bros 127 Merchant St AM 6-6750

BEAVER FALLS

Reliable Motor Parts 1700 7 Ave 4925

BETHLEHEM

*Buss Radio Electric 59 E Broad St 7-3151

BRADDOCK

Marks Parts Co 313 Braddock Ave EL 1-1314

BUTLER

Barron's Radio 333 E Jeff 7-5930

CHESTER

A C Radio Supply hqrs Philadelphia

Bell Radio & TV 307 Edgemont Ave

UREXEL HILL

General Elec Supply 3417 Garret Rd CL 9-6440

EASTON

*Federated Purchaser, 925 Northampton 4259 hqrs New York N Y

Radio Electric Service 916 Northampton

ELKINS PARK

A G Radio Parts 939 Township DG 5103

ERIE

B & D Whole Distr 502 E 10 St

*Dancombe Co J V 1011 W B St 2-6125

General Electric 824 E 9 NE 3-5206

*Jordan Electronic Co 1130 Gorman St 2-2462

*Warren Radio 12 & State 4-5286

Westinghouse Elec 1820 State 4-8191

Young Brothers 1909 Peach St 45-297

GETTYSBURG

Hartley & Co hqrs Stanton Va

GREENSBURG

General Electronics New Alexander Rd Box 909 3685

HARRISBURG

D & H Distr 311 S Cameron St

Excelsior Radio 17 & Derry 8-8261

Graybar Electric 1039 S 13 7-7303

Harrisburg Radio 1124 Market St 6-2755

Knorr C G 317 S Cameron St

*Radio Distr 915 S 13 4-0139

HAZELTON

Cerullo Electric 39 S Vano 1296

Moyer Electronic 758 N Locust

INDIANA

Superior Distr 334 Philadelphia St

JOHNSTOWN

*Baker Radio Electric 111 John St

*Cambria Equip 17 Johns 6-1291

Dick's Automotive 633 Napoleon St

General Electric 80 Hickory 2-1225

TV & Radio Parts 325 Bedford St 2-1158

Westinghouse Electric 75 Hickory St 8-1293

LANCASTER

Barbey Co G D R22 Columbia Ave 4-0558

Eshelman Supply 110 N Water 8183

York Radio 519 W King St 4-2669

LEBANON

Barbey Co Geo D hqrs Reading

McKEESPORT

*Barne Radio 321 6 Ave

McKeesport Electronics 1661 5th 8-5111

MONESSEN

Mon Valley Electric 456 Schoonmaker Ave 1233

NANTICOKE

Modern Electronic 102 S Market 583

NEW BRIGHTON

Television Parts Co 509 S Ave 5085

NEW CASTLE

Midwestern Elec 235 W Grant OL 4-9961

Reliable Radio & TV 1015 S Mill OL 4-9233

NEW KENSINGTON

Bearer Electric 1017 S Ave ED 5-5801

NORRISTOWN

Kratz Bros Kohn & Oak

OIL CITY

Barron's Radio hqrs Butler

PHILADELPHIA

*A G Radio 1539 W Passyunk HO 2-9379

*A G Radio 3552 N 17 St SA 2-0505

*Allied Electric 1320 W Erie Ave BA 9-8800

*Almo Radio 412 N 6 St WA 2-5153

*Barnett Bros 117 N 7 LO 3-3947

Burns Co Janson C 31 A Oxford St 4-5600

*Consolidated Radio 612 Arch St LO 3-7871

*Emerson Radio 223 N Broad LO 4-3350

Everybody's Supply 810 Arch St WA 2-7800

General Electric 429 N 7 St MA 7-5700

Graybar Electric 910 Cherry WA 2-5405

*Herbach & Rademan 1204 Arch LO 7-4309

*Lazar Radio 4231 Lancaster Ave BA 2-5604

Lectronic Research Lab 715 Arch MA 7-6771

*M & N Sporting Goods 722 Market LO 7-2587

Madison 3960 N 16 BA 6-2020

Menbar H K 1539 Race St LO 7-2125

Palco-Phaig 2000 N 59th St GR 7-9000

*Penna Electronic 5303 Frankford JE 5-1533

*Radio Electric 3412 Germantown BA 9-5900

*Radio Elec Serv 7 & Arch LO 3-5840

Radio Parts Equip 3319 N Broad RA 5-5322

*Rosen & Co Raymond 2121 Market St EV 2-5000

*Stemey Electric 1007 Arch St MA 7-6900

*Steinberg & Co 2520 N Broad BA 3-9400

Westinghouse Electric 141 N 11 St WA 2-8950

*Wile Eugene G 218 S 11 St KI 5-8370

PITTSBURGH

*Cameradio Radio 1121 Penn Ave

Electronic Parts 5744 Baum Blvd MO 1-6413

General Electric 200 W River Ave AL 1-1530

Graybar Electric 900 Ridge Ave AL 1-4100

Hamburg Bros 213 Galveston Ave AL 1-2400

Keys Electric 5000 Baum Blvd MU 3-3300

Mansfield Co MV 937 Liberty Ave GR 1-4175

*Marshall Co John 201 Anderson FA 1-5400

Pittsburgh Prods Reedsdale & Fontella Sts AL 1-3400

*Radio Parts 6339 Penn EX 1-5540

Rogers Co C R 5210 Liberty Ave MA 1-4700

South Hills Electronic 1420 W Liberty Ave FI 1-6200

*Superior Distr 5124 Liberty Ave MU 1-4311

Westinghouse Elect 209 W Gen'l Robinson AL 1-5500

POTTSTOWN

Barbey George D hqrs Reading

POTTSVILLE

*Moyer Electronic 330 E Norwedge 3742

Schuykill Electric 611 Mauch Chunk St 4404

READING

A G Radio Parts 628 Schuykill Ave

Barbey Geo D 2 & Penn Sts 6-7451

*Barnett Bros 201 S 4 6-4814

General Electric 407 N Front St 4-2169

Graybar Electric 22 S 3 St RE 6-1581

Westinghouse Electric 4 & Elm Sts 6-7236

ROCHESTER

Reliable Motor 402 Adams St

ROSLYN

Grove Enterprises 1373 Easton Rd

SAINT MARYS

*R & R Electric 26 Railroad St 44-918

SCHUYLKILL HAVEN

Ace Electronics 33 Stanton St 304-R

SCRANTON

Consolidated Distr 844 Capouse DI 7-6380

General Electric 204 Monroe Ave 5104

General Radio & Retr 1013 Capouse Ave DI 7-5033

Morris Distr 616 Mulberry St

Parcell Fred P 1221 N Washington Ave

Scott Charles B 119 Franklin Ave 2-8221

*Scranton Radio/TV Supply 419 Poplar St DI 3-1259

SHARON

Sharon Electronics Supply 1336 E State 3014

SUNBURY

Big Boys Distr 132 S 2 St 990

Electronic Sales 734 Market St 911J

Moyer Electronic 3 Maas Ave

UNIONTOWN

Radio Parts 1 Mill St hqrs Pittsburgh

Superior Distr 25 Danbar St

*Zimmerman Wholesalers hqrs Hagerstown Md

WILKES-BARRE

D & H Distributing hqrs Baltimore Md

General Electric 85 E Union St 2-5106

General Radio 396 S Main 4-7881

Modern Electronic hqrs Nanticoke

Radio Service 346 S Main 3-7713

Wall R B 16 E Union St W B 3-0127

WILLIAMSPORT

Alvo Electrs Distrs 240 Pine St

Electric Appliance 329 E 4 St

Westinghouse Electric 465 Hepburn St 2-6183

*Williamsport Radio 518 W 3 St 7696

YORK

Eshelman Supply 10 Broad St hqrs Lancaster Pa

*J N S Distr 646 W Market 4-3217

Minnich Radio & Sound 624 W Market St

Mutter Electric 815 N George St

Westinghouse Elec Dantz St & 6 Ave WD 5556

*York Radio & Retr 263 W Market St 8-1588

RHODE ISLAND

CRANSTON

Rhmaco Sales 218 1/2 Warren Ave East Prov 1-3213

PROVIDENCE

Adams Distr 116 Broadway

Dandosta & Co Wm 129 Regent Ave UN 1-2800

*DeMambo Radio 90 Broadway

Duro Electronics 78 Atwells DE 1-6272

Eddy & Co 43 Hospital St GA 1-2045

Edwards & Co W H 94 Broadway

General Electric Harris & Acorn GA 1-6533

Graybar Electric 190 Richmond DE 1-8100

Television Arena House 41 Broadway JA 1-7515

Westinghouse Elec 233 Harris GA 1-6484

SOUTH CAROLINA

CHARLESTON

Batt's Elec Supply 480 E Bay St 2-4085

Radio Labs 215 King St 3-5328

Wholesale Radio 78 1/2 Calhoun St

COLUMBIA

Associated Distr 822 Garval St

*Dixie Radio Supply 1700 Laurel 4-0383

Electronics Inc 1513 Taylor St

Graybar Electric 710 Lady St CO 2-2125

Horlacher & Barrett 1909 Main

Kroll Radio 1714 Main 2-2103

McElhenney Co 1215 Henderson

Perry-Mann Electric 1611 Main St

Southeastern Radio Parts 1513 Taylor St

Southern Radio 1929 Hampton Ave

Westinghouse Electric 915 Lady 8145

DISTRIBUTORS SERVING the ELECTRONIC INDUSTRIES

UW Co Frank G 1318 Madison Ave 36-4555
Westinghouse Elect 845 N Main 37-9431
Woodson & Boreman 733 S Somerville 32-2445
W & W Distr 639 Madison 37-4628

ASHVILLE

Braid Elec 1100 Demonbrum 42-6511
Curry's 1600 McGavock St 4-0553
Electra Distr 1914 West End Ave 5-7741
General Elect 90 Peabody 5-6331
Graybar Electric 125 16 Ave N 4-6501
Keith Simmons 14 Cummins Sta 4-1761
Radio & Appliance 4 Cummins Station
Randolph & Cole 1213 McGavock St 42-5426

TEXAS

BILENE

General Electric 190 Locust 2-2827
Graybar Elec Co 1601 S Treadway
*R & N Electronic 1010 Pine 4-9544

MARILLO

Amarillo Hdw 600 Grant St
Arrow Television Radio 1017 NE 3rd 4-5974
Dolaney's of Texas 1420 NE 3rd St
General Electric 701 E 5 Ave 2-3285
Graybar Electric 601 E 2 St 2-6778
*R & N Electronic 707 Adams 3-4513
Westinghouse Electric 99 Taylor 2-6536
*West Texas Radio Supply 1026 W 6 2-3179

AUSTIN

Electronic Hdgrs 310 Willow St 8-8888
Graybar Electric 214 E 3 St 8-5674
*Morgis Co 410 Baylor St 8-6618
Standard Radio 309 Lavaca St 7-9241

HEAUMONT

General Electric 1295 Pearl St 4-6435
Graybar Electric 1070 Fannin St 2-8484
Hall Inc RC & LF Hdgrs Houston
*Montague Radio 760 Laurel 4-5697
Reed Co 200 Fannin St 4-7431
Sterling Radio 1025 4 St 4-7503 hdgrs Houston
Westinghouse Electric 265 Cypress 4-8635

HIG SPRING

Pioneer Electronic Supply 1206 E J 3454

BROWNSVILLE

Electronic Equip & Eng'g 12 & Madison 2-4222
Hdgrs Corpus Christi

CORPUS CHRISTI

*Electronic Equip 805 S Staples 3-9271
General Electric 1134 Port St 2-9237
Graybar Electric 1311 Agnes 4-6374
Westinghouse Elect 110 N Staples St 2-3351
*Wicks Radio Equip 513 S Staples St 4-8285

DALLAS

Adleta Co 1914 Cedar Springs 7-7576
*All State Distr 2407 Ross Ave RI 1295
*Crabtree Whole Radio 2608 Ross St 5361
Dallas Electric 1800 Magnolia RI 5396
General Electric 1811 N Lamar St RA 2201
Graybar Elect 717 Latimer RA 6452
*Industrial Electronic 134 Lusia 3-8122
Medaris Co 1202 Drago N St PR 4841
*Ra-Tel 2409 Bus Ave PR 8689
*Southern Radio 3004 Ross Ave VI 6396
Southwestern Co 1202 Drago N St PR 4841
*South West Radio 1820 N Harwood RI 6272
Westinghouse Electric 601 Latimer St RA 2401
Wholesale Electronic 2800 Ross Ave ST 5738
*Wilkinson Bros 2406 Ross Ave PR 1571

DENISON

*Denison Radio Supply 310 W Woodard 45

EL PASO

Elec & Mech Supply 2000 Texas St 2-4614
General Electric 300 Dallas St 3-3467
Graybar Electric 427 W San Antonio St 3-7561
Midland Specialty 425 W San Antonio 3-2401
Monsen-Dunnagan-Ryan 800 E Overland 3-1621
Reeves Radio Supply 720 N Stanton 3-5752
Sanland Supply 1200 E Missouri 3-7400
Waltz Co W G 500 San Francisco St 3-1677

FORT WORTH

Electronic Equip 917 Florence St ED 5407
*Fort Worth Radio Supply 1201 Commerce FO 7107
General Electric 409 Jones St FA 5385
Graybar Electric 1107 Foch St ED 4525
H & L Radio Supply 1608 Commerce St
*"Seooter's" Radio 509 Commerce St FO 7448
Shields Co 1008 Macon St FA 3111
*Sutton's Electronics 104 S Main St
Swisco Co 1518 E Lancaster ED 5029
United Electronic 403 Jones ED 9295
Westinghouse Elec 205 NE 7 FB 5611

HOUSTON

Automatic Distr 100 Jackson CA 0261
Beyer & Co A R 1318 Polk Ave AT 7491
Busacker Electric 1721 Waugh Dr JU 5546
Covington Distr 34 N Hamilton CA 0326
Crompacker Distr 1200 National CH 9366
Franklin Co R E 1905 Chartres St CA 0194
General Electric 1312 Live Oak FA 3121
Graybar Elect 1702 Cullen AT 4571
Gulf Coast Electronic 1110 Winbern St W-1551
*Hall Inc R C & L F 1301 Polk CA 9731
Harrison Equip 1422 San Jacinto AT 6315
Houston Radio Supply Clay at La Branch CA 6261
Lenort Co 2213 Congress Ave CN 2663
Moore Bros 3401 Milam St JU 4175
*Radio Parts 902 Crawford PR 7976
Sound Sales & Engineering 2005 La Branch
*Sterling Radio P O Box 1746 2311
Strauss-Frank 4000 Leeland CA 1201
Telo-Radio 1721 Waugh Dr JA 9777
Walsh & Co J A 4301 Gulf Freeway CE 9481
Westinghouse Elect 1903 Ruiz CA 7272

ARLINGTON

Guarantee Radio 1314 Harbide St 3-6913

Pan American Electronic 1015 Harbide St 3-6242
Radio & Electronics Supply 1219 Lincoln St

LONGVUE

Wholesale Electronic 203 S High St

LUBBOCK

Anderson-Young 2002 Clovis Rd 5-8581
General Electric 1312 1/2 Ave J 3-8271
*R & N Supply 1607 Ave G 5-5737
Westinghouse Electric 605 Main St 3-0425
West Texas Radio Supply 1009 Ave hdgrs Amarillo

LUFKIN

Radio Parts Co 1010 N Raguet

MALLEN

*Rio Radio Supply 608 S Broadway 6-5781

ODESSA

Midland Specialty 2101 Andrews Hwy

PORT ARTHUR

Dialt Radio & TV Supply 1927 7 St 2-6311

SAN ANGELO

Gunter Wholesale Co 606 Irving St 3455

SAN ANTONIO

Alter Radio 359 E Crockett St
Amateur Headquarters & Supply 828 Brooklyn
GA 7388
General Electric 1801 Broadway GA 1261
Graybar Elec 1401 N Hackberry FA 6274
*Mission Radio 521 Broadway G 8323
Modern Radio Supply 635 Soledad St FA-0175
Olson Radio Supply 412 Parada St
*Radio & TV Parts 116 7 St F-5329
*Rio Radio Supply 722 San Pedro St C-8281
South Texas Appl. 641 S Flores St
Strauss-Frank Box 600 FA 0101
Warncke Co R 121 Navarro St
Westinghouse Electric 1211 E Houston GA 9271

TEMPLE

Central Radio & Supply 410 E Ave A

TEXARKANA

*Lavender Radio 520 E 4 St 2-9981

TYLER

General Electric 416 N Hwy 2-1673
Lavender Radio Supply 503 E Oakwood St
Radio Service 111 University 4-4441

WACO

General Elec 217 S 4 St 2-1611
*Morgis Co 1205 Washington Ave hdgrs Austin
L & M Sales 1307 Austin Ave 2-3391

WICHITA FALLS

*Clark & Gose Radio 1203 Indiana St
*Mooney Radio 1635 Huff 2-7505

UTAH

OGDEN

Ballard & Carter 2428 Grant 3-7844
Iverson Radio 265 25 St 6286

SALT LAKE CITY

Ballard & Carter 1486 Major St 7-0671
Blintz Co W H 433 W 3rd S St
Central Supply Co 47 E 5th St S 3-2631
Flint Distr Co Box 1470
General Electric 312 W 2 S St 3-3911
Glenn Earl 245 S 1st West 3-7601
Graybar Electric 336 N 3 St W 9-8771
Kimball Distr Co 115 S W Temple St
Lloyd Co W B 51 S 2nd W 3-3825
Moore Radio Supply 157 Motor Ave
O'Loughlin's Radio Supply 113 E J S St 4-5051
Radio Supply 157 Motor Ave 5-2817
Ross S R 1212 S State St 6-8607
Standard Supply 531 S State St 3-2644
Strawell-Paterson 126 S W Temple 4-6461
Westinghouse Elect 210 Rio Grande 5-2972

VERMONT

BURLINGTON

General Electric 316 Pine St 3-3424
Nagar Hardware & Paint 164 St Paul St 4-6842
Radio Service Lab 703 Pine St
Vermont Hdw 180 Flynn Ave 4-6835
Westinghouse Electric 208 Flynn Ave 4-9985

RUTLAND

Oakman Electric Supply 12 Water St 594

VIRGINIA

ALEXANDRIA

Curtiled Radio 1330 Powhatan St KI 8-5115
Suburban Distr 222 S Henry St KI 9-6804

ARLINGTON

Rucker Radio Wholesalers 1906 N Moore St hdgrs
Washington DC

BRISTOL

Bristol Radio 31 Moore St N-3544

CHARLOTTESVILLE

Virginia Radio 715 Henry Ave 3-3928

DANVILLE

*Womack Radio 502 Craghead 4622

HAMPTON

General Elec 39 Hwy & Salters Creek 3-6526

LYNCHBURG

Eastern Electric Co 920 Commerce St 2-3497
Lynchburg Battery 406 S St 2-1236

NEWPORT NEWS

General Supply 4215 Huntington 2-4007

NORFOLK

General Electric 709 E 26 St 2-7183
Goodman Electric Supply 3610 Hampton 4-8233
Graybar Electric 333 W 21 St 2-2727
*Radio Equip 821 W 21 St
*Radio Parts Distr 128 W Olney 2-5711
*Radio Supply 711 Granby St 4-9211
Schultz Inc G J 639 W 24 St PH 2-7985
Trant, Inc R F 924 W 21st St

Westinghouse Elec 2600 Hampton 5-0525
Wyatt-Cornick 919 W 21 St hdgrs Richmond

PETERSBURG

Electronic Supply 13 E Washington St PE 481
Virginia Battery 35 E Bank St 2812

RICHMOND

Commonwealth Sales 1601 Summit Ave
Cottrell Jr W C 408 E Main St 3-2402
Crump Co Benj T 1310 E Franklin
Duval Distr Co 1221 Admiral St
General Elect 1505 Sherwood 6-4941
Graybar Electric 10 S 6 St 7-3491
Johnson Co D R 1315 E Cary St 7-3617
*Johnson-Gasser Co 3023 W Marshall 6-9405
Mattson's Inc 519 W Broad St 3-6011
Meridian Electronic 608 W Broad St 3-3450
*Radio Supply 3302 W Broad St 6-3831
Richmond Office Supply 816 E Main St 7-3054
Tiller, Inc A B 957 Myers St
Westinghouse Electric 511 E Byrd St 3-0111
*Winfree Supply Co 800 W Cary St
Wyatt-Cornick Grace at 14 3-1945

ROANOKE

*Baker Sales HC 19 Franklin Rd SW 9209
General Elec 515 Norfolk Ave SW 3-1564
Graybar Elec 601 Salem Ave 3-3615
*Leonard Electronic 131 Central Ave N W 3-9339
*Radio Supply 2009 Williamson Rd 6289
Roanoke Electronic 1322 Williamson 6612
Wyatt-Cornick 605 3 St S E hdgrs Richmond
Westinghouse Electric 732 1 St SE 7771

STAUNTON

Hartley & Co 327 N Central 5-2333
Radio Electric Products 114 N Central
Southern Electric 818 Greenville Ave 5-2313

WASHINGTON

BELLINGHAM

Waltheus Supply 110 Grand Ave 274

BREMERTON

*C & G Radio Supply 1301 Pacific Ave 3-3370

EVERETT

*Pringle Radio Whole 2514 Colby Ave

KENNEWICK

Wible Radio Supply Inc hdgrs Tacoma

SEATTLE

Alaska Radio Supply 1846 Westlake N AL 8777
Associated Industries 1752 Rainier St MI 4400
Central Electronic 2023 7th Ave
Coast Radio 110 University St MA 9133
Connolly Co F B 1015 Republican St SE 4155
Electronic Supply 5601 Calif Ave
Fidelity Electric 960 Republican St SE 5100
Garretson Radio Supply 2416 2 Ave MU 4380
General Elect 1212 1 Ave S SE 6400
*General Radio 100 Wall St
Graybar Elec King & Occidental MU 0123
Instrument Lab 934 Elliott W AL 4940
Marshall-Wells 1258 1 SE 7447
*Radio Products Sales 1214 1st Ave MA 1035
Radio TV & Appl 500 Westlake Ave N MA 0787
*Seattle Radio Supply 2117 2 Ave SE 2345
Stesser Electric 2246 1st Ave S SE 5285
*Western Electronic 717 Dexter Ave AL 9000
Westinghouse Elec 1051 1 Ave S EL 7001
Westlake Electronic 511 Westlake N MA 6601
*Zobrist Co H E 2121 Westlake MU 2121

SPOKANE

Columbia Electric S 123 Wall St RI 3131
Connolly Co F B S 124 Wall St RI 6174
Frank's Radio Supply 161 S Adams St MA 8108
Graybar Electric 152 S Post St RI 3151
General Electric S 122 Monroe TE 1421
Johnson Co E M W 615 1 Ave RI 5432
Northwest Electr N 102 Monroe MA 9289
Prudential Distr 318 W Trant Ave MA 6002
Spokane Radio Supply 305 W 2 Ave RI 8441
Standard Sales 1219 W 1 Ave RI 7196
Taylor Distributing E 206 Augusta EM 3301
Westinghouse Elec N 1023 Monroe EM 3371

TACOMA

*C & G Radio Supply 2502 Jefferson Ave BR 3181
General Electric 2316 South A St BR 8454
Graybar Electric 2112 A St Ma 0164
Stewart Co A T 711 Broadway BR 3174
Westinghouse Elec 1930 Pacific BR 8417
*Wible Radio Supply 2360 S Fawcett St BR 8395

VANCOUVER

Saelens Radio 310 W B St 4-2671

WALLA WALLA

Kar Radio & Electric 12 & Pine Sts 4572

WENATCHEE

Mid-State Radio 611 1/2 N Wenatchee Ave 510

YAKIMA

Pringle Radio 417 King St
Lay & Nord 112 S 2 St 3-5591
Westinghouse Elec 210 W B YA 3-4701
Yakima Wholesale Radio 506 S 1st 4670

WEST VIRGINIA

BECKLEY

*Chemcity Radio & Elec 340 B Prince St 2-5353

BLUEFIELD

Bluefield Supply 6121
Dixie Appliance 232 Bluefield Ave
*Meyers Electronics 813 Bluefield Ave
Whitehead Radio Co 367 Bluefield Ave

CHARLESTON

Charleston Elect 914 Kanawha 6-0321
*Chemcity Radio & Elect 103 Clendenin St 2 8151
Eskow Smith & Cannon 402 Brooks St
Nicks Radio Supply 10 Virginia St 3-5583
Mountain Electronics 708 Bigley 39-582
Virginian Electric Michigan Ave 60-631

DISTRIBUTORS SERVING the ELECTRONIC INDUSTRIES

CLARKSBURG

Mountain Electronics hqrs Charleston
Trenton Radio Co hqrs Morgantown
Westinghouse Electric 315 N 4 4-6311
White Electric 903 W Pike St 4-5591

ELKINS

M & M TV & Radio Co 3 Pleasant Ave
W VA Radio & TV 444

HUNTINGTON

*Electronic Supply 422 11 St 8779
*King & Irwin 314 11 St 3-8414
*TV Supply 1226 3 Ave 6639
Van Zandt Supply 1123 4 Ave 5193

MARTINSBURG

Plummers Radio 308 W King St 3821

MORGANTOWN

Trenton Radio 507 Beechurst Ave 5637

PARKERSBURG

Charleston Elect Supply 227 Ann St 7-4513
Cox Radio Supplies 554 7 St
Randle & Hornbrook 536 7 St 8-3391

WHEELING

General Electric 1422 Main St 2555
General Electronics 735 Main St 5738
Hamburg Bros 360 National Rd 727
*Radio Parts Co 1312 Main St
Westinghouse Electric 1803 Eff St 3980
Wheeling Radio Supply 924 Market St Wb 1077

WISCONSIN

APPLETON

Appleton Radio Supply 1217 N Richmond St 3-3345
General Electric 116 W Harris 3-5583
Valley Radio Distr 518 N Appleton St 3-6012

CHIPPEWA FALLS

Bushland Radio Specialties 6052

EAU CLAIRE

Larson Electrical J H 9716

FENIMORE

Tel Rad Mfg Co 7 Madison St

FOND DU LAC

*Harris Radio 289 N Main St 8204

GREEN BAY

Electronic Expeditors 420 N Clay St HE 2-4165
Graybar Elec Co 1140 N Irwin Ave
Nesio Electronic 308 N Chestnut HE 5-4881
*Northern Radio & TV 708 S Broadway HE 5-3789
Westinghouse Electric 619 Main HO 8200

HUDSON

Larson Elec Co J H 109 Walnut St 248 W
Progress Supply 1321 3 St 828

JANESVILLE

Goodenough Radio 111 N Jackson St 7033

KENOSHA

Badger Electronic Parts 4050 7 Ave 4-1484
Chester Electronic 2012 52nd St 2-8607
Midwest Electronics hqrs Chicago Ill

LA CROSSE

Southern Minn Supply hqrs Mankato Minn
Stark Radio Supply 131 S 6 St 2-3186

MADISON

Graybar Elec Co 103 N Park St MA 5005
*Radio Distr 701 E Johnson St 6-6801
*Satterfield Radio 326 W Gorham 6-0267
Superior Radio Parts 2211 Atwood 9-2259
Westinghouse Elect 1022 E Washington 5-4868

MANITOWOC

*Harris Radio Corp 115 N 10 St 9313

MARINETTE

Pogkey Co G M Main & 9 Sts

MILWAUKEE

Ackermann Radio 3176 N 27 St HI 5-1860
*Acme Radio 1009 N Water St BR 1-0641
*Central Radio 1723 W Fond du Lac Ave WE 3-2982
Electronic Expeditors 2205 W Villet WE 3-5804
Electro-Pitance Distr 2458 W Lisbon Ave DI 2-9240

General Electric 540 S I BR 6-7730

Graybar Elec 180 N Jefferson BR 6-8400

Juneau Radio Sup 3110 W Lisbon Ave DI 4-2266

*Marchy Electronic 2327 W Wells WE 3-8304

Mid-City Electronic 333 N Plankinton Ave BR 1-1965

*Radio Parts Co 538 W State MA 8-4048

Radio Specialty 829 N Bway MA 8-2060

Roth Appl 647 W Virginia BR 1-1111

Seamath Distr 2406 W Lisbon St DI 2-9240

Siewert Distr 1415 W Mitchell St OR 2-9000

State Distr Co 3500 W Pierce St EV 3-6200

Stolz-Wicks 4120 W Fond du Lac HI 4-9585

Taylor Elec 112 N Broadway BR 1-5400

Television Parts 714 W State BR 2-6111

Westinghouse Elec 546 N Bway DA 8-1800

OSHKOSH

Electronic Expeditors 1244 6th St BL 5718

Juneau Radio Supply 3110 W Lisbon Ave

RACINE

Allen's Merchandising 1206 N Wisconsin St 3-8589

Badger Electronic 856 Washington 3-4024

*Standard Radio Parts 1244 State St 4-3634

Superior Radio Parts 908 State St 4-7890

SHEBOYGAN

Koepsell Co J J S 9 at Commerce 3646

Nitza's 1129 N R St 9351

STEVENS POINT

AMCO Electronics N 2nd & Franklin 3351

WAUSAU

*Radio Service & Supply 615 3 St 3272

WYOMING

CASPER

Casper Supply 444 S Center St

General Electric 428 S Elm St 5926

CHEYENNE

*Hooge Radio & Supply 4012 Central

ELECTRONIC INDUSTRIES DIRECTORY of

Representatives ("Reps")

This section of the 1954 Electronic Industries Directory lists those representatives operating as independent "reps" who handle two or more lines. They do not include factory staff salesmen. "Reps" are listed alphabetically under states and cities. Asterisks (*) indicate membership in "The Representatives" of Electronic Product Manufacturers, Inc. Telephone numbers are given to speed contacts.

ALABAMA

BIRMINGHAM

Nordstrom & Co R C 580 N Woodward Ave JO 4-6129

ARIZONA

PHOENIX

Moore Sales Co Harry A Box 7245 AM 5-4662
Sheller Co H George Box 1587 AL 8-7893

CALIFORNIA

LOS ANGELES AREA

*Appleton Co Harry 136 San Fernando CA 1-2171
Barron-Jorco 817 S Hoover St DU 3-5248
*Barstow & Doran 1406 S Grand Ave RI 6191
Baughman Co E J 503 S Central Ave MA 9-1403
*Becker Co Herb 1140 Crenshaw Blvd WE 1-1257
Berman Co J 1141 LaCienega St BR 2-9138
Cohn S H 1769 S Holt Ave TE 0-4398
*Cochrane Co Irv M 408 S Alvarado DU 5-1715
Craig Ralph P 719 N Harper Ave WE 0468
*Davis Sales Co George 5259 E Beverly Blvd UN 3-3594
Dankle B 3257 W 6 St
*Ealy & Hastings P O Box 264 (N Hollywood) ST 7-5621
*Emmet F A 2837 W Pico RE 3-9111
*Feldman Co Henry 1244 S Grand PR 8803
Fox Associates 2519 W 7 St DU 3-2148
Hurdle Co R M 134 N Edgemont DU 3-6851
*Harmon Co W S 1638 S LaCienega Blvd BR 2-3321
*Harris A W P O Box 1116 (Gardena) or 8-4817
*Hill Sales Co J T 800 W 11 St RI 7-5384
*Hitt Co W C 1169 S Broadway PR 2105
*Kittleson Co. 7614 Melrose Ave WH 1167
*Knight Co W Bert 10373 W Pico Blvd BR 2-5647
Koessler Sales 6907 Melrose Ave YO 6271
La Moree G D 1325 San Julian RI 6378
*Lasero Co Harry A 9041 W Pico Blvd CR 6-4185
*Loshota Co Douglas H 1052 W 6 St MA 6-4505
Lynch & Son C R 210 W 7 St VA 3805
Lynn & Brooks 3055 Wilshire Blvd DU 2-2255
*Marsh Co J W 4216 W Jefferson RE 2-0145
*Marshall Co G S 40 S Los Robles (Pasadena) NY 1-8345
*Marshank Sales 672 S Lafayette Pl DU 7-8235
Maynard Sales Co 6214 W Manchester OR 8-3150
*Miller Co Gerald B 1550 N Highland (Hollywood) HO 9-6305

Mitchell Co C M 256 S LaPeer Dr Beverly Hills CR 1-8382

*Neely Enterprises 7422 Melrose Ave WE 3-9201

Owner—Norman B Neely
General Manager—Robert L Boniface
Engineering Sales Mgr—Robert L Morgan
Manager Industrial Dept Thos M French
Manager Sacramento Office—Rudy A Poucher
Manager San Francisco Office—J C Ingersoll
Manager Albuquerque Office—L E French
Manager Phoenix Office—W R Saxon
Manager San Diego Office—E J Moore

Lines Handled

Bird Electronic Corp

Baonlon Radio Corp

Electro Measurements Inc

Gertsch Products Inc

Hewlett-Packard Company

Kay-Lab

Libroscope Inc

Sensitive Research Instrument Corp

Sierra Electronic Corp

Tektronix Inc

Variation Associates

Territory served—States of Calif-Ariz-Nev- N Mex

Warehouse facilities—factory authorized service department and a total of 38 qualified people

Olander & Co Roland 7225 Beverly Blvd WY 0028

Osborne R E 1044 S Park View DU 8-1039

*Owens Co Lee H 2331 W Washington RE 0230

Perimath-Colman & Assoc 2419 S Grand Ave RI 7-4321

*Power Ralph L 767 Castelar St MU 5277

Renz Roy E 207 S Orange St (Glendale) CH 5-2047

*Riall Al J 2724 S Peck Rd (Monrovia) DO 6-2135

*Roberts & Assoc E V 5068 W Washington WE 8-2541

*Rupp Co V T 2230 W 11 St DU 3-4197

*Saul & Assoc Howard M 5015 San Vicente Blvd. WE 1-8901

*Selgel Co Samuel 1145 S LaCienega Blvd BR 2-4183

Slovers Edward S 5171 Hollywood Blvd NO 2-1105

Smodley A B Box 67-C (Pasadena) SY 8-1174

Snitzer T Louis 5777 W Pico Blvd WE 1-5566

Starr Edwin E 4101 Rhodes Ave (N Hollywood) ST 7-5879

*Stone Assoc Carl A 1102 S Western Ave R 2-8103

*Strassner Co Conrad R 1865 N Western Ave HO 7-7086

Tiry George S 1148 S Grand Ave RI 7-7553

*Tobergen Co John B 2232 W 11 St DU 9-3173

Van Groot Co 14515 Dickens St (Sherman Oaks) ST 7-7882

Vermilye Co Charles 3440 Wilshire Blvd DU 2-5695

*Wallace D C & W H 1206 Maple Ave RI 7-0401

*Weber Co Wedge 1206 Long Beach Ave VA 2009

*Wiley Paul F 1632 Silverlake Blvd NO 3-8028

*Wood Co A M Box 150 (Elmonte) CU 3-1201

PASADENA

Marshall Co G S 40 S Los Robles NY 1-9663

SACRAMENTO

*Neely Enterprises 309 Oschner Blvd GI 3-7461

SAN FRANCISCO AREA

Ault C E 625 Laurel Ave (Menlo Park) DA 5-4983

*Barstow & Doran 248 9 St UN 3-2079

*Belchamber P A 1401 Middle Harbor Rd (Oakland) GL 1-4460

*Berman Co E L 758 Natoma St UN 3-0317

Brainard W V 721 Clementina St UN 1-2569

Dutsch & Co 341 10 St MA 1-2788

Elchorn & Melchior 501 Indiana St UN 1-8309

Frazar & Hansen Ltd 301 Clay St EX 2-5112

*French S P 721 Garland Dr (Palo Alto) DA 3-0597

Harris Sales Co L H 383 Brannan St YU 6-1084

Held Herman E 147 10 St UN 3-4250

*Hermann Co James P 1234 Folsom St MA 1-4166

*Hitt Co W C 1355 Market St KL 2-2311

*Howard G M 782 Bryant Dr 2-6320

Kittleson Co 2166 Market St HE 1-5304

*Lewis Assoc Dean 219 9 St UN 3-1414

Logan Assoc 725 Greenwich GA 1-0076

*Logan Sales Co 530 Gough St HE 1-5127

Marshall Harry E 104 Olive St BR 3-2173

*Meyer & Ross 1355 Market St KL 2-2311

*Mouthrop & Hunter 160 10 St HE 1-2625

Moxon Sales G E 422 LaJolla Ave (San Mateo) FI 5-2866

*Neely Enterprises 2830 Geary Blvd WA 1-2361

*Newman Harold L 420 Market St YU 6-3897

*Nickerson & Rudat 381 Brannan St YU 2-2982

*Nott & Co L A 1061 Howard St HE 1-4738

*Pardy Co W J 312 7 St UN 3-4321

*Ross Co David H 534 El Camino Real (San Carlos) LY 3-8224

*Sinal Arnold A 65 9 St UN 1-6259

COLORADO

BOULDER

Gallagher W B 1003 Grandview Ave HI 2-7899

DENVER

*Bowen Co Ronald G 446 Broadway SH 4-2501

Bower Co C R 2759 W 33 Ave GR 7292

*Connors Co W H 5532 E Colfax FR 0566

Halliday Call 2576 S Milwaukee St PE 2650

*Hyde Co Dick 3250 S Dexter SK 6-7151

*McLeod & Raymond 5528 E Colfax FR 3067

Mauller Mark G 1644 Blake St AC 3515

*Nelson Co A J Box 5502 KE 6751

*Brian Sales A J Box 1681 BE 3-4845

*Pearson & Mill 1011 S Josephine St SP 7-7878

*Williams Co Allen I 1009 17 St MA 0343

COLORADO SPRINGS

*Peyser W J 1501 N Weber 4-3401

GREELEY

*Moss Gordon G 2530 13 Ave 770

CONNECTICUT

ANDOVER

*Soyd Ernest K Long Hill Rd (Coventry) Pilgrim 2-6604

BRANFORD

Steel Assoc Joseph R 41 W Main St

REPRESENTATIVES ("REPS")

BRIDGEPORT

Reynolds Co Harrison 211 State St BR 5-9634

ANAHA

*Holliday-Hathaway Co Box 797 CA 8-7215

DARIEN

Jacobson Leo 3 Belleval Rd ST 3-0828

EAST HAVEN

Steele Assoc Joseph R 22 Green Garden RD 7-5864

HARTFORD

Gibson Engineering Co 119 Ann St CH 7-6919

Hatton & Co Arthur T 955 Asylum Ave 5-2159

*Kahn Assoc Irving 541 Windsor St 46-7431

MARCHESTER

Gates Alexander W 46 1/2 Summer St MI 9-7761

MERIDEN

*Lavin Assoc Henry Box 196 7-4555

NEW HAVEN

Garber Sales Co 42 Church St UN 5-2147

Musco Sales 880 Elm St UN 5-2806

RIDGEFIELD

*Hastis Assoc Walter C Box 52 6-7477

WEST HARTFORD

Pattigrew & Co R S 62 La Salle Rd MA 3-5804

WESTPORT

Niel Assoc P W 15 Oak St CA 7-3834

DISTRICT OF COLUMBIA

WASHINGTON

Fields Associates 422 Wash Bldg ST 3-3490

Henry & Co 3741 Jocelyn St NW KE 7-1448

Jodon Francis 2902 Perfor St NW WO 6-2615

Wasley Associates 1 Thomas Circle NW MA 8-1957

Rich Industries 1025 Connecticut Ave ST 5141

FLORIDA

FORT MYERS

Lynch Arthur H & Assoc Box 466 5-6762

JACKSONVILLE

*Cole Harry A 534 10 Ave 5-2971

LUTZ

*Wallace Assoc Stanley K PO Box 744 TA 99-3241

MIAMI BEACH

Gaertner Co Jack 823 86 St 86-6664

SARASOTA

Rasmeler Warren L 128 Golf Dr RI 6-5001

TAMPA

Minthorn Co Leonard L 409 E Cass St 2-8631

*Wallace Assoc Stanley K 207 W Alfred St TA 24-4221

WINTER HAVEN

Taylor Co Morris F 940 Lake Elbert Dr 22-684

GEORGIA

ATLANTA

*Adair Clark 1426 High Point Pl NE VE 3053

*Burwell Co Henry W 1125 Ponce de Leon Ave NE AT 2127

*Cartwright & Bean 4030 Club Dr NE CH 2483

*Dachelt Sales Co Grady 1145 Peachtree St NE AT 6916

Erickson Co Herb PO Box 7036 Sta C AT 8266

*Fausett & Son F 777 Pinehurst Ter SW RA 3104

Glenn & Larson 172 Slapson St NW WA 4906

Hart Engr & Sales Co 132 Walker St SW AL 9854

*Hollingsworth & Still 407 Whitehead Bldg MA 5878

*Joyner J E PO Box 341 Station A FR 4910

*Lewis Co Carl A 627 Peachtree St NE VE 1457

*Millar Assoc James 1036 Peachtree NE EL 0919

*Murphy & Cota 1409 Peachtree St NE EL 3020

*Nicherson F C 901 Bernina Ave NE

Rogers & Assoc C B 1000 Peachtree St NE EL 1733

*Smith Co Maitland K 317 Forrest Ave NE WA 6094

*Taylor Co Morris F 1426 High Point Rd NE EM 3979

Thornwell E A 217 Whitehall St SW WA 3548

*Wallace Assoc Stanley K 2151 Beecher Rd SW RA 8463

DECATUR

*McCorvey Co V Avis 307 Church St CR 6167

ILLINOIS

CHICAGO AREA

American Mfrs Agency 208 N Wells St RA 6-6311

*Arnold-Vare Assoc 1321 Rosedale Ave ED 4-6457

*Bebo Assoc 1155 Washegan Rd (Glenview) CO 7-2292

*Bauman & Bluzat 2753 W North Ave HU 6-6809

*Belor Co Leroy W 6518 W North Ave BE 7-2420

Berggren & Assoc 2015 S Michigan Ave CA 5-1450

Bomba Sales Co WFE 6966 W North Ave ME 7-8433

*Booth Claude R 400 W North Ave CA 7-2810

Bruning Co A H 208 N Wells St DE 2-2769

H BRUNING CO

Phone DEarborn 2-2769—2-2795

Owner—Al Bruning

Salesman—Mike Bermann

Product

American Microphones—Bell Sound Systems—

Cornish Wire Co—Reeves Soundcraft Co—South

River Metal Prod—Hycon Manufacturing Co—Pee-

less Transformers

*Bargoyne Wm E 7001 N Clark St

*Caine Sales Co 3020 N Cicero Ave SP 7-4022

Cappell & Assoc J L 1214 W Madison TA 9-1818

Carroll & Carroll 3223 W Armitage Ave DI 2-9878

Chambers Co Larry A 565 N Washington St FR 2-9095

Champion Earl T 6459 N Sheridan Rd AM 2-3565

*Cole Co G McL 4753 N Broadway LO 1-7611

Cozens W B 220 Kedzie St (Evanston) DA 8-4800

*Crosley & Assoc 4501 N Ravenswood UP B-1141

*Cunningham & Assoc Bruce 228 N LaSalle AN 3-5837

Cushing Co L G 605 N Michigan Ave DE 7-6456

*Dietrich Co Ross 2030 W Montrose St LO 1-6831

*Dolin Sales D 1200 N Ashland Ave BR B-1515

Doylo Co W J 333 N Michigan Ave FR 2-7100

*Ellinger Sales Co 6571 N Olmsted Ave RD 3-4154

Ellis Co Arthur J 1607 Howard St AM 2-2708

Eng's Sales Co 3592 Milwaukee Ave

*Engle Co Karl D 4724 N Sheridan Rd UP 8-6363

Eschner Co 9 S Clinton St CE 6-1533

Everett Associates 6744 N California AM 2-3702

*Feltstein & Assoc 5839 W Montrose Ave

Fistell Harry 1838 S Halsted St SE 3-3076

Gaskins T 1005 S Aurora Ave (Wheaton)

*Gassner & Clark Co 6349 N Clark St RD 4-6121

*Gebhard Co Harry W 5129 W Devon Ave RD 3-3636

*Glanaras Sales Co 2345 W DeVon Ave AM 2-2100

*Gelten Co Jerry 2750 W North EV 4-5959

Grant Gary 330 S Franklin St WE 9-4595

*Green & Assoc L F 4949 W Diversey Ave NA 2-2370

Haines E Ralph 949 Lake St (Oak Park) EU 6-4476

*Hainton Co Harry 5500 W Devon Ave NE 1-5524

Haskell Assoc 1033 Ontario St (Oak Park) EU 6-5741

Hefter & Assoc E G 612 N Michigan DE 7-1160

*Higgins Co Royal J 10105 S Western Ave CE 3-7388

*Hill-Gray 41 1/2 Harrison St (Oak Park) ES 8-7050

*Hitecock Ray 1754 W Madison

Hortlacher Sales WA 7070 N Clark St RD 4-9487

Howe & Pretat 4 N Cicero Ave CO 1-3146

Hutmacher Assoc R R 664 N Michigan Ave WH 4-5288

*JKM Inc 13 W Hubbard St WH 4-6345

*Jones Mel M 2800 N Milwaukee Ave EV 4-2646

*Kadell Sales Assoc 2406 W Bryn Mawr LO 1-3042

Kahan I J 333 N Michigan Ave FR 2-1478

Keiborn Eng's Co 600 W Jackson Blvd DE 2-2827

*Kleber Co Jerome H 177 Sunset Ave (Glen Ellyn) EL 2297

*Kneepfer Geo 2650 W Belden Ave

Langhaus-Levy Assoc 315 W Walton WH 4-2120

*Linz Co W M 7135 N Mobile Ave RD 3-3326

Lombard Co V Box 26A (Grayslake) RD 6-1760

*Lund-Hansen Co 1900 Montrose Ave LO 1-2551

McBride Sales Co J J 14107 Merchandise Mart DE 7-3575

Manufacturers' Representative for:

ORRADIO Industries Inc T-120 Marvyn Road Opelika

Alto "IRISH" Recording Tape

RAM Electronic Sales S Buckholz St Irvington-on-

Hudson N Y TV components replacement parts

Stover Co Inc #131 N Saxon Ave Bay Shore

LI NY Mini Springs Tube Shields

*McCarthy Co L C 5933 Addison St KI 5-7976

*Magnuson Edward G 4258 W Irving Park Rd KI 5-4426

*Magnuson Associates 4258 Irving Park Rd PA 5-1170

Memae Sales Co 9 S Clinton AN 3-5728

Miles Paul H 333 N Michigan Ave FR 2-7100

*Monsen Corp 6059 Belmont Ave 7-3226

Newman-Krause Co 3352 N Central Ave PE 6-6776

*Petitt Co G 549 W Washington St RA 6-0582

Powers Co J J 4938 W Irving Pl Rd PA 5-3888

Quackenbush Al 2629 N 77 Ct FR 2-7100

*Ridley Assoc 1551 N Austin Blvd TU 9-2940

*Ritter Sales Co 612 N Michigan Ave SU 7-7759

*Rose & Co J K 2323 W Devon Ave AM 2-5584

Ryan Co Gerald G 549 Washington Blvd ST 2-7665

*Saffro Co 800 N Clark St DE 7-5092

*Sarkis & Co Henry 6560 N Sheridan Rd HO 5-1481

*Smith Co Orin W 221 W Huron St SU 7-7919

*Stamm R Edward 5681 W Lake St CO 1-2227

*Stemm Royal A 21 E Van Buren St WE 9-4840

*Strauss Mae 425 Surf St BI 8-7200

*Sullivan Ralph T 1551 N Austin Blvd NA 2-4074

*Tatro & Assoc F B 6022 N Rogers Ave JU 8-0333

*Taylor Co R F 308 W Washington St AN 3-1808

Twist Co J G 2800 N Milwaukee Ave HU 9-2550

Victoria Sales Co 7522 N Sheridan Rd BR 4-5400

Ward Co E M 8307 S Racine Ave VI 6-6300

*Warner Co D L 15423 Monroe Ave (Harvey) WA 8-8060

*West Jack 6153 N Milwaukee Ave RD 3-3500

Willey Co S J 1737 Howard St AM 2-1319

*Wilson Sales Agency 2750 W North Ave CA 7-7600

LOMBARD

Byrne Harry 15 W Maple St

SPRINGFIELD

Kloppenberg H M 1316 S College St 4323

INDIANA

ANGOLA

*Clancy & Co Joe Wilder Rd 793

Law Instrument Co 519 W Gilmore St 217

FORT WAYNE

*Bleberlich Walter W 2817 Plaza Dr K-2928

*Central Sales Co Central Bldg EA 6251

*Fish & Assoc Bud 419 W Sherman Terr MA 1089

*Hoemig Sales Co 1730 Clover Lane AN 2083

*MacPherson-Thomas 601 Ft Wayne Bank Bldg AN 9460

*Southern Sales Co 1605 Lincoln Tower AN 5278

*Valentine Forrest C 507 Ft Wayne Bk Bldg AN 9122

INDIANAPOLIS

Blind & Co Harrison J 1616 Cord St BE 0191

Chatfield C E 503 Illinois Bldg PL 1838

Crandall & Assoc R M E 56 St CH 8379

*DeVoe Co Leslie M 4010 Washington Blvd HU 1395

*Macnabb V C 909 Westfield Blvd BR 6770

*Nelson Marvin E 5376 E Washington St IR 7664

*Phessant Charles E 18 N Bolton Ave BL 6176

*Quinn Cunningham Assoc 6101 College Ave EL 3222

*Schulz Co Edwin A 721 Sherman Dr BR 1993

*Whitwell & Assoc Robert D 2208 E Washington St MA 8517

*Wright Eng's Co 4241 Melbourne HU 8800

IOWA

BURLINGTON

Kelly Co W G 303 Belleair 1202

CEDAR RAPIDS

*Vrbik Jerry 309 Guaranty Bldg 4-0833

DES MOINES

Sandy F R 2221 34 St 7-7909

Silverman Jack 1201 Grand St 8-7231

KANSAS

IDLA

Russell Sales 315 W Jefferson 64

MERRIAM

*Koenig G L 6359 Antioch Ave 3166

WICHITA

Harris Co Municipal Airport 62-2731

KENTUCKY

LOUISVILLE

Wright Eng's Co 912 S 2 St JA 0295

LOUISIANA

NEW ORLEANS

Bornemann W E 4719 Cortier Ave

Corrigan & Parkerson 504 Delta Bldg RA 5644

Moore Co Earl R 4108 Clermont Dr CR 4182

Redmann Stephen M Box 1325 UP 3767

MARYLAND

BALTIMORE

Dave Bros 385

REPRESENTATIVES ("REPS")

BEVERLY

Kelly & Co W T 90 Lothrop St 65

BOSTON AREA

Abbott & Hastings 1105 Commonwealth Ave AL 4-8100
 *Akroyd A E 2311 John Hancock Bldg MA 6-2433
 *Anderson Sales Co 177 State St CA 7-2980
 Brown, K L 277 Humboldt Ave HI 5-7984
 *Chamberlin Harold A 31 Milk St HU 2-7022
 *Conkley Tim 148 Noodham St (Newton Highlands) DE 2-4800
 Electrical Apparatus Co 1200 Soldiers Field Rd ST 2-7440
 Garner Frank W 110 Arlington St LI 2-7428
 *Gerber Sales Co 739 Boylston St CO 7-0061
 *Goss Co J 1430 Mass Ave (Cambridge) EL 4-7799
 *Greene Dan PO Box 124 (Cambridge) UN 4-2220
 *Hannigan Co Walter T 43 Leon St GA 7-2650
 *Harris Co Stanley A 318 Harvard St (Brookline) LO 6-6400
 Hart Co F H 68 Market St (Lynn) NA 1-0381
 *Holliday-Hathaway Co 238 Main St (Cambridge) EL 4-1751
 *Hooker Samuel C 397 Highland Ave (Winchester) WI 6-2745
 How Inc J D Statler Office Bldg HU 2-4638
 *Lavin Assoc Henry 82 Curve St (Noodham) NE 3-3446
 *MacInnis N R 53 Youle St (Melrose) M & P Sales Co 1116 Gr Plain Ave (Noodham) NE 3-3773
 Nickerson Clayton S 206 Somerset Ave (Winthrop) OC 3-3276
 Herman Norman 55 Lawrence Ave (Roxbury) GA 7-2198
 Parker Blair M 610 Atlantic Ave LI 2-9214
 Pearce Eng'g & Sales 457 Stuart St CO 63532
 *Perron & Co Ray 1870 Centre St 4-1008
 *Pray Sales W B 18 Brewster Rd (Wellesley Hills) WE 5-3199
 Scholl Co C E 89 Brighton Ave AL 4-2005
 Scott Co Michael 90 Edmonds Rd (Wellesley Hills) WE 5-0102
 *Reynolds Co Harrison 313 Washington St (Newton) DE 2-4620
 Segel Co Charles 143 Newbury St KE 6-5785
 Segel Co Inc Henry P 143 Newbury St KE 6-3012
 Phones: Kenmore 6 3012, 6333, 9755, Copley 7 2330
 Treasurer and Gen Mgr—Henry P Segel
 Other personnel covering industrial and distributor sales, electronic engineering and statistical research.

Lines Handled

Bud. Radio—Clarostat—Connecticut Telephone—Dovelle Laboratories—Freed Transformers—Mascon—Turner-Tescon—Wilkor—Garde Mfg. Co
 Territory Covered

All New England States

*Sturgeon P R 25 Huntington Ave CO 7705
 *Waters Inc R A 4 Gordon St (Waltham) WA 5-6900
 *White Sales Co 1116 Great Plain Ave (Noodham) NE 3-3676

LINCOLN

*Stevens & Co K C Box N LI 6-0408

SCITUATE

Hendrickson Wm A Lawson Park 652

SHARON

Clough A P 10 Winslow Rd SH 506

SPRINGFIELD

Rodgers Assoc 198 Farm Rd 3-8428

MICHIGAN

DETROIT AREA

Adams Co R A 17636 Edinborough Rd KE 1-7000
 *ABM Sales 2450 Fennell Ave UN 2-1300
 Beitel Co Wayne 139 W Maple MI 6-0311
 Burcaw & Co K C 22128 Grand River Ave KE 3-7700
 Carrier & Gable 414 Murphy Bldg WO 1-1786
 Eynon-Daking Co 9900 Freeland Ave TE 4-7700
 *Flitzner Co B J 8803 Michigan Ave LU 4-0180
 *Haggerty-Scott Co 10116 Paritan Ave UN 1-4434
 Haggerty-Wells Co 1507 W Saratoga Ave (Ferndale) LI 2-0811
 Hill Co Baryl R 19481 James Couzens Highway VE 8-3460
 Koehler-Pasmore Co 11833 Hamilton TO 8-3322
 Partner Utility Sales—Roland C Koehler
 Partner-Industrial Sales—Clark H Pasmore
 Indus Sales—John C Ailingham Darrell W Drury
 George Elliott
 Utility Sales—Don Baines
 Dist Sales—Robert Gardner Harold Holton
 Office Mgr—Morace Field
 Territory Covered—Lower Peninsula of Michigan—N W Ohio
 *Lee W S 22128 Grand River Ave KE 3-7700
 *Liddle Edwin F 18925 Grand River VE 7-5310
 McCaffry Co J A 13104 W Lincoln (Huntington Woods) LI 4-1380
 *Merchant R C 4829 Woodward Ave TE 1-1677
 *Mills Co Robert 19763 James Couzens Hwy BR 3-2930
 Moore Sales Co 418 Savannah W TU 3-0218
 *Nordstrom & Co R L Davis Bldg (Birmingham) JO 4-6129
 Satallo Co 4512 N Woodward Ave (Royal Oak) LI 9-3910
 *Scott T T 10116 Paritan St
 *Shaffer Co G 16267 James Couzens Hwy UN 3-1227
 Sterling Co S 15310 W McNichols Rd BR 3-2900
 *Thorpe Jack M 4390 Haverhill TU 5-4438
 Vogt Martin 1328 Maxwell Ave (Royal Oak) LI 1-1192
 *Walton Co M E 76 Kercheval TU 1-5858
 *Zaffina Co L F 14611 Alma Ave WA 1-4442

JACKSON

*Brotherson R 744 Audubon 2-9654
 Jordan E H 218 W Winner St 2-0694
 Wilson Sales Gerald 403 2 St 4-3692

MINNESOTA

MINNEAPOLIS
 Allen Inc T H 3918 Beard Ave S WH 3861
 Bartleson Co Bill 330 Oak Grove AT 6709
 Eller Equipment Co 637 Sexton Bldg MA 8881
 Foster Mel 1036 Lumber Exchange Bldg GE 5622
 Franklin Co Merrill 338 E Franklin Ave GE 1805
 Gibb Co C R 1409 Hennepin Ave LI 2550
 Heilmann Co 1711 Hawthorne MA 5457
 Hill Co Fred B 6110 Excelsior Blvd MD 9-6727
 Kirshy Marvin W 437 Oliver Ave S GE 4945
 Oszman E W 10 E 25 St FI 3298
 Pinkney & Hine 552 Plymouth Bldg LI 052
 Richardson & Co H M 9 E 22 St GE 4078
 Warner Co A J 5022 29 Ave S DR 1895

ST. PAUL

Benson Co E R 2651 University Ave MI 5197
 Engelbreiten Co W M 906 Ottawa Ave CE 2338
 *Laub-Date Co 1951 University Ave NE 7911

MISSOURI

CLAYTON
 *Maynard Co L W 139 N Central PA 5-3723

FENTON

*Wellman Co W N Box 166 DA 6-0260 R

JEFFERSON CITY

*Paden Co Ward Box 569 5-1023

KANSAS CITY

Automatic Gen'l Sales 6650B Troost Ave JA 7379
 *Bettis Co Maury E 406 W 34 St LO 0772
 Clemenson R E 210 W 8 St ME 1254
 Everett Assoc 1629 E 31 St AR 9539
 *Farris Co R W 406 W 34 St LO 7495
 *Fry & Co W E 406 W 34 St JE 5236
 *Kay Sales Co 3760 Broadway LO 7640
 *Larabee Co Fred H 6033 Main St DE 2804
 LeeMark Assoc PO Box 8467 VA 7134
 *McGrade Co E W 5326 W 71 St HE 2606
 Melton Co E L 2901 E Meyer Blvd JA 0467
 *Myers-Young-Forrestal 4538 Main St JE 7221
 Pommerenk Co H C 4700 Roanoke Parkway LO 2296
 *Roes & Co H A 2601 Cherry St MA 2036
 *Schmitz Co J O 917 VFW Bldg LO 9824
 *Scholz Co Paul G 210 W 8 St MA 7111
 *Schryver Sales Co Clyde H 4550 Main St WE 4660
 *Sumers & Co F C Grand Ave Bank Bldg GR 1355
 *Terwilliger Sales Co 9304 High Drive MI 0188
 *Thibau Co A R 402 Mfrs Exchange Bldg VI 7057

KIRKWOOD

Winslow Design & Sales Co 20 Hillcrest TA 1-1880

ST. LOUIS

Beneke Co Jules 575 Arcade Bldg CE 1677
 Borghoff Co Wm 1210 Edgewater Dr
 Bullivant F J 1913 Washington Ave CH 6310
 Harris-Hanson Co 5506 S Kings Hwy FL 1-5584
 *Kathrinus & Co 1218 Olive St CE 6300
 Levin Mfg Agency Sidney M Box 405 WI 2869
 *Lowell Theodore B Box 21 Normandy BR MU 7803
 Mayerson-Follman Co 2342 Olive St CH 1-1122
 *McGary Co William T 6635 Dolmar Blvd DE 5-6430
 *Myers-Young-Forrestal 8147 Dolmar Blvd DE 5-7701
 Rose Equipment Co W L 317 W 11 St CH 7247
 *Sebright R D 4030 Chouteau DL 0784
 *Waelterman L F 3938 Lindell Blvd OL 6455
 Wells-White Co 6625 Dolmar Blvd PA 7-7622

UNIVERSITY CITY

Jaques L E 8112 Tolano Ave CA 5349

NEW JERSEY

NORTHERN AREA

*Borber Barrett 10 Highwood Ave (Tonawanda) EN 3-2354
 Braddock E Browning Lane (Haddonfield) 9-0087
 *Brennan Co F X 180 Glenridge Ave (Montclair) 3-2461
 *Bressler Jules J 4808 Bergenline (Union City) UM 4-9577
 Brano-New Jersey, Inc. 12 Hennon Place (Bloomingdale) BU 9-1376
 *Curt & Co Art 744 Broad St (Newark) MI 2-6734
 Detwiller L K 443 Broad St (Newark) HU 5-9000
 *Electronic Components: 81 Lake Dr (Mountain Lakes) BO 8-2921
 Engel E Curtis Box 569 (Ridgewood) GI 4-0878
 *Finlay Rbt Lincoln Bldg (Ridgewood) OL 2-0088
 Gawler-Knoop Co 178 Eagle Rock Ave (Roseland) CA 6-4545

Main office—178 Eagle Rock Ave Roseland N J
 Caldwell 6 4545 & Digby 4 8417
 Branch offices—901 Pershing Dr Silver Spring Md
 Juniper 5 7550 and 835 Glenside Ave Wyncote Pa
 Livingston 8 5480

Lines Handled:

Ballantine Labs (sensitive electronic voltmeters)
 Berkeley Sci Div Beckman Inst (electronic counters-time interval meters-computers)
 Clough-Brenge Co (audio osc RF sig gen)
 Dressen-Barnes Corp (regulated power sup)
 Allen B DuMont Laboratories Inc (cathode ray tubes oscillographs cameras Industrial Instruments Inc. bridges decade boxes megohm meters Machlett Laboratories Inc (power tubes-recifiers)
 Francis L Moseley (XY recorders) Price Electric Corp (relays) Technology Instrument Corp (Z angle meters-phase meters) Teletronics Labs Inc (pulse gen-diode test sets) Rollin Co (standard sig gen) Waveline Inc (microwave instruments & components)

*Hughes Co Kenneth E 4808 Bergenline (Union City) UN 7-3204

Representatives for Manufacturers of Electronic Equipment and Components
 N Y phone OXford 5 0082—N J phone UNIC 7 3204

Territory served—Met NY area including N J Westchester County All of Long Island
 Salesmen—3 all with engineering training and experience

Products Sold—Attenuators Delay Lines Development Engineering Indicating Instruments Misc Test Equipment Oscilloscopes Potentiometers Signal Generators-Solder Fluxes & Pats Toroids & Filters Tube Testers Vac Tube Voltmeters
 Lawton Co 12 Foster Rd (Tonawanda) EN 3-3979
 Lerman Leonard S 1093 Salem Rd (Union) UM 2-9406
 Luce Brlerly Davis Co 332 Springfield Ave (Summit) SU 6-8181

*Miller Co Harry 27 Mechanic St (Red Bank) 6-9300
 Moyer H A PO Box 14 (Haddonfield) 9-6347
 Norton CIIR 60 Park PL (Newark) MA 2-4728
 *NSA Co 15 Park Ave (Rutherford) GE 8-3200
 Phone Geneva 8 4200, TWX RFD 18

Territory—Metropolitan New York—Long Island—Northern New Jersey
 Partner—Richard Gentry
 Partner—Carroll Bonfield

Representing

National Co Inc
 Harvey Wells Electronics
 McCoy Electronics
 American Electronics
 Hawes Engineering
 Jobber and Industrial coverage

*Ryan Assoc John L 263 Edgemont Pl (Tonawanda) TE 6-1075
 Sanford L C 202 Woodland (Rutherford) WE 2-0979
 *Schwartz Adolph 15 Exchange Pl (Jersey City) DE 3-2424
 *Simberloff Sales Co 68 Hudson St (Hoboken) HO 2-5211
 Smith Co 16 Northfield Ave (W Orange) OR 6-6818
 Snyder Sales 194 Freelinghaysen Ave (Newark) BI 2-0349

Walt R Donald Box 153 (Netcong) NE 2-0221

SOUTHERN N J (SEE PHILADELPHIA PA AREA)

NEW MEXICO

ALBUQUERQUE

C G Electronics Corp 305 Dallas NE 6-6121
 Gates Franklin Y 110 Harvard Dr SE
 Kittleson Co 106A Cornell Dr SE 2-9581
 Miller Co Gerald B 327 Wyoming SE 5-8606

NEW YORK STATE

ALBANY

Carso Electric Corp 100 State St 3-3628

BINGHAMTON

*Holliday-Hathaway Co 124 Chenango St 3-1511

BUFFALO

Eyre Phillip B 89 Pearce Dr CI 0534
 *Farber Assoc Maury 1210 Hertel Ave RI 2423
 Fillmore & Fillmore 647 Elmwood Ave SU 3355
 *Jackson Co Robert W 833 Ellcott Sq Bldg MA 3306
 Johnson Agencies 3331 Bailly Ave WI 1431
 Keller Industrial 33 E Hazeltine Ave RI 3938
 Lamb Robert F 1807 Elmwood Ave BE 3757
 Mitscher Co R W 487 Ellcott Sq Bldg WA 2517
 Shea S E 735 Ellcott Sq Bldg WA 8240
 Wink Willis 235 Hendricks Blvd AM 6426

DE WITT

Taylor Co Frank W Box 222 SY 72-5198

FAYETTVILLE

*Andrews Martin P 10 Motz Road 65-8405

Rosen Assoc P O Box 6 655-8917

HAMBURG

Cooper-Morgan Inc Box 152 EM 3405

LIVERPOOL

*Wadsworth Mfg Assoc 509 Balsam St 69-7043

ORCHARD PARK

*Ball Assoc 58 E Quaker St ID 4416

PHELPS

LeRoy & McGuire Inc RD 1 228

ROCHESTER

Gislason Gilbert 617 Case Bldg LO 8323
 Johnson Agencies Inc H C 111 Mt Hope Ave MA 1096
 Telephone Hamilton 1090
 Buffalo-BO 3331 Bailey Ave Windsor 1431
 Schenectady-BO—727 DeCamp Ave Schen 4 5901
 Cook Electric Co
 Fugle-Miller Laboratories
 G M Giannini & Co Inc
 Haydon Mfg Co Inc
 Sigma Instruments Inc
 Stevens Mfg Co Inc
 Torwico Electronics Inc
 Keller Industrial Products 217 East Ave MA 3255
 *LoRoy Gordon C 29 Bancroft Dr CH 3872
 *Richter William J Juniper St CU 7635
 Schmitz A W 82 St Paul St MA 3090
 *Wolfe-Marsey Sales Co 74 Park Ave MO 6228

SCHENECTADY

Johnson Agencies 727 DeCamp Ave SC 4-5901

SYRACUSE

Allan Leonard D 2401 S State St 4-4195
 *Andrews & Andrews 521 Cumberland Ave 72-0531
 *Swank Wally B 2310 Bellevue 4-2141
 Wolfstange Jr F 326 State Tower Bldg 3-8013
 *Zimmerman W H 647 S Warren St 3-6405

REPRESENTATIVES ("REPS")

TROY

Windsill Elec Co 225 River St AS 2-0700

NEW YORK CITY METROPOLITAN AREA

(Exclusive of N. J. Territory)

*Aaron Paul D Professional Bldg (Port Wash) PO 7-5670

Adeiman Co Leon L 25 Chittenden Ave TO 7-1145

American British Tech 57 Park Ave MU 9-2595

Audio & Video Prod Corp 730 5 Ave PL 7-3091

*Baum Sydney M 70-15 Fleet St (Forest Hills) 00 3-8101

*Be-Esco Associates 395 Broadway CA 6-0029

Berger G E 109-01 72 Rd (Forest Hills)

Blalock Assoc Samuel 205 E 42 St MU 4-1655

*Bittan Co D M 53 Park Pl BA 7-2789

Bittan-Safer Sales 120 Liberty St Co 7-0618

*Blalock-Stenberg Co 395 Broadway WO 4-7321

*Bloom Associates Hy B W 18 St BR 5-7565

*Brewer Co R E 250 W 57 St CO 5-0440

Brown Irs 1500 Carroll St (Brooklyn) NY 3-1379

*Brown Assoc Jack 25 Beaumont Circle (Tuckahoe) SP 9-7330

*Burlingame Assoc 103 Lafayette St DI 9-1240

*Camber Marty 1700 York Ave EM 9-4222

*Cardner Sales Corp 164 Duane WA 5-0900

Christie & Co R S 175 5 Ave GR 7-4226

*Cooper DIBLasi 259 W 14 St WA 9-3920

*Diamond Simon 75 West St WN 4-2970

*Egert & Fields Co 11 Park Pl WO 4-0996

Electronic Sales Co 136 Liberty St WO 4-6193

Engel & Assoc G C 149 Broadway RE 2-0091

ERA Inc 10 S Middle Neck Rd (Great Neck) MU 2-9320

*Erde S S 271 Hempstead (Malverne) LY 9-6900

*Forrest Bernard J 256 Greenwich St DI 9-3481

*Forsyth John M 27 Park Pl BA 7-4977

Frazer & Hansen 120 Broadway WO 4-3454

*Freud & Co Leo 420 Lexington Ave LE 2-4771

*Friedman Co A 519 S 5 Ave (Mt Vernon) 4-4866

*Furman Nat 395 Broadway WO 4-7324

Garfunkle Co Wm L 17 E 42 St MU 2-6770

Gary-Martin 1961 Broadway TR 3-3759

Geist-Creaser Assoc 60 E 42 St MU 7-1550

*Gelb B W 1777 Grand Concourse TR 8-6084

Ginsburg Sylvan B W 40 St PE 6-8239

Goldman & Co Louis R 251 W 42 St BR 9-8872

Gray Harold 21-10 33 Rd (Long Island City) AS 4-3641

*Greenberg Jerry 1902 Av L Brooklyn WA 8-5399

Gross Assoc Adolph 23 Park Pl WO 4-8585

Haviland Assoc 1217 California Rd (Tuckahoe)

*Mess Assoc Art 62-07 68th Ave (Brooklyn) NY 7-7498

*Nicks W M & Keeneth J A 42 3rd Ave (Mineola) CA 3-0110

Phone GArden City 3 0110

Radio and TV Components

Electronic Components

Industrial Electrical and Mechanical Devices

Areas Served:

Metropolitan New York

Northern New Jersey

Westchester Putnam and Dutchess Counties

Fairfield County—Connecticut

Selected special accounts—Eastern Seaboard

*Holiday-Hathaway Co 270 Park Ave MU 8-5858

Hovley Sales Co 318 Beach 31 St (Far Rockaway) 7-7588

*Hy-Art Co 136 Liberty St WO 4-5087

Instrument Center 55 Beale St WO 7-1290

*Jacobs & Assoc Jack 1800 E 12 St (Brooklyn) DW 9-4374

*Joseph Ben 521 5th Ave MU 2-0815

*Kaelber & Mark J Park Ave (Manhasset) MA 7-1459

Kahgan Jack J 40 Exchange Pl BO 9-8350

Kahant Assoc 11 Park Pl CO 7-5326

*Kantor F I 4010 Saxon Ave VI 8-5133

*Koppie John 60 E 42 St MU 2-1118

Kubrick Dave 200 W 34 St BR 9-6517

*Land-C-Alr Sales Co 42 Dak Ave (Tuckahoe) 3-5500

*Landis Sales Co Cliff 81-11 Roosevelt Ave (Jackson Hts) IL 8-7900

*Levison Melvins 5 Waverly Pl DR 4-4464

*Lichter Wm 90 W Broadway RE 2-5228

*Markowitz Jesse 10 S Middle Neck Rd (Great Neck)

Masin Co O F 1 Wolf's Lane (Pelham) PE 8-4510

Miller Ben 401 Broadway WA 5-3964

*Mingins Sales Co 107-37 71 Ave (Forest Hills) BO 3-1643

*Morse Sales Irv 150 Broadway CO 7-2913

National Sales Devel Co 7 E 42 St MU 7-7255

*Newhope Corp G E 39 St LE 2-7372

*Nichols Paul 42 Oak Ave (Tuckahoe) TU 3-5500

NIEF Assoc Paul W 7 Greenridge Ave WH 8-1454

*Pickett James M 205 E 66 St TR 9-9520

Regeo S Whittler St (Lynbrook) LY 9-4875

*Rockbar Corp 211 E 37 St Va 6-3463

Ruff William 401 Broadway CA 6-7545

*Sattler Perry 53 Park Pl RE 2-5333

Schoffner & Varman 330 Front St (Hempstead) IV 3-4585

*Schmitt Co F Edwin 136 Liberty St WO 2-6550

*Shaw Co S A 92 S Central Ave (Hartsdale) WH 8-5015

*Shalan & Co Wally 136 Liberty St WO 2-0365

Smith-Bonny Sales Co 11 W 42 St CH 4-1642

*Smith Howard F 259 W 14 St CH 2-2398

Snyder Milton C 205 E 42 St MU 4-1314

*Sobel David 10 Fiske Pl (Mt Vernon) MO 8-9809

*Spillman F C 206 E 4 St (Brooklyn) SO 8-0180

*Sprung Joseph 254 W 31 St LO 5-1820

*Stang Sales 1 Crestwood Lane (New Rochelle) NE 6-6622

Stollmack MW 277 Broadway CO 7-4330

*Susman & Co Jules 130 Lafayette St WO 2-7766

*Taylor Co B B 241 Sunrise Highway (Rockville Ctr) RO 6-1014

*Tobias & Co D F 30 Church St CO 7-4350

Phone: CO 7-4350

Tripplett Electrical Instrument Co

JBT Instruments Inc

Shurite Meters

Schauer Manufacturing Corp

Campbell Industries Inc

Columbia Resistors Inc

Territory Covered: New York and New Jersey

Torney & Beale Bank of Manhattan Bldg (Boyside) 4-4000

Vorster Sales Co 1195 Sherman Ave CY 3-0211

Weber Assoc Jack Lake & Main Sts (Tuckahoe) 3-0893

Wolland G. H. 77-43 166 St (Flushing) OL 8-4061

*Wolfs & Associates W W 509 5 Ave MU 2-8945

*Willgold Electronic Sales 350 5 Ave LO 4-2525

Wineblatt Sales Co E 10 Fiske Pl (Mt Vernon) 4-3216

*Wolfe Michael 136-52 71 Rd (Flushing) BO 3-1400

*Wolf Assoc Irving W 135 Liberty St RE 2-9673

NORTH CAROLINA

CHARLOTTE

Electronic Equip Sales Agency 418 Wilder Bldg 7-6193

Furman & Assoc C M Jr PO Box 2624

Glenn & Larson 123 Brevard Ct 4-3994

Highsmith & Co James L Box 1011 5-6436

*Howard Co Foy M 2908 Hutchinson Ave 5-6646

Ranson, Wallace & Co 116 1/2 E 4 St 4-4244

GREENSBORO

*Atcheson & Adams 429 W Gaston 2-6838

WILMINGTON

*Manufacturers Sales 4924 Oleander Dr 5749

OHIO

CINCINNATI

Beede Equip Co Roselawn Center Bldg JE 2640

Henger Fairfield Co 124 E 7 St MA 4749

Herrick Co G L 2087 Sherman Ave JE 7542

Luing Co W C 3253 Lambert Pl EA 1435

Wahl Co A C 416 W Benson St VA 3270

CLEVELAND AREA

Ambro Jones Co 1085 The Arcade CN 1-7470

*Baehr Albert M 11621 Detroit Ave LA 1-8468

*Baier & Co Arthur H 2138 Lee Rd FA 1-5644

*Brauer & Assoc Walter J 15631 Lakewood Hts Blvd LA 1-7268

Clark Sales Box 708 Warrensville BR 1-2241

Dannenmiller Assoc J R 1791 Oakmont St EV 1-5100

*Daugherty Co F A 1120 Croydon Rd HI 2-3311

*Dietrich Co Earl S 320 Hanna Bldg CH 1-7770

*Dolfuss Jr Chas H 2108 Payne Ave PR 1-0719

*Edwards-Lobbe & Co 2123 E 9 St TO 1-5753



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Manufacturers Representatives covering Greater New York & Northern N. J.

Specializing in Technical Components

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4 Electronic Sales Engineers

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Elliott Co Howard C 3412 E 147 St WA 1-4206
Harrington-Fisher Co Engineers Bldg SU 1-6612
Menger-Fairfield Co 1812 Columbus Rd CH 1-1018

Office and Warehouse

Whitcomb B Fairfield
Raymond A Mack
Horry W Kennedy
Frank W Treadway

Branch Offices

Maumee Ohio—1130 Key Street Paul S Moran
Dayton Ohio—1034 Knott Building Clarence A Moley

Cincinnati Ohio—124 East 7th Street Peter A Troyan • Carl W Arnold Jr
Columbus Ohio—101 No High Street Whitcomb H Fairfield
Canton Ohio—400 4th Street NW Roy J Fenn
Jr

Lines Handled

John E Fast & Co
Hardwick Hinkle Inc
Oak Mfg Co
Appleton Rubber Co
Circle F Mfg Co
Crescent Ins Wire & Cable Co
Insulated Duct & Cable Co

Herrick Co G L 15326 Lorain St WI 1-4406
Hoshins Nell K 210 S Franklin St (Chagrin Falls) CH 7-6136

Jay Eng's Co 5413 Pearl Rd TU-4-4080
Jebell Associates 2036 E 22 St MA 1-0229
*Landfear Co J M 2138 Lee Rd FA 1-4533
Lehner J C 4301 Daisy Ave SH 1-0903

Levin & Assoc Sid 4217 Okalona Rd EV 2-2734
Maatlander Co H C 351 Cornwall Rd (Rocky River) LA 1-0435

*Midwest Sales Co 3219 W 117 St WI 1-2700
*Morrow Co Les A 3123 W 117 St CL 1-5700
*Miss Co Chas R 16956 Van Alen Blvd (Shaker Mts) WY 1-6018

*Nace Allen S 7601 Parkview Rd (Brecksville) JA 6-7300
Odell Co M P 2536 Euclid Ave PR 1-6171

*Olson Co John D 16201 Shaker Blvd WY 1-2624
Rosen Wasser Sales 1581 Coventry Rd (E Clev) FA 1-0463

Roth Sales Co Mike 13947 Cedar Rd YE 2-4262
*Raser Frank W 4144 Marwin Ave ME 1-8350
*Scott & Steffen 1836 Euclid Ave MA 1-1286

Silverman Lou 2300 Payne Ave CH 1-7559
Staff Co R A 1213 W 3 St MA 1-4063
Sterling Co S 13431 Cedar Rd

Valentino Forest C 6408 Euclid Ave EN 1-4343
White & Co C E 637 Baskley Bldg MA 1-8410

COLUMBUS

*Lehner Co J W 367 Brynhild Rd LU 5260
*McFadden William E 150 E Broad St MA 3363
*Pugh Co C L 4500 Dublin Rd KI 4855
*Walter-Raho Co Box 212 (Worthington) FR 2-7819

DAYTON

*Bear Corp Neal 1110 Broad Blvd OX 3041
Boehme Associates 8-4 Talbott Bldg FU 8188
Crossley & Assoc Alfred 53 Park Ave OX 3594
Epps & Fedotin 1434 Vancouver Dr TA 9345
Grimm A N 1731 Ruskin Rd OR 1496
Jay Eng's Co 1517 E 3 St KE 2151
Klein Wm 1472 Earham Dr RA 0943
Mapeo Edward E 5741 Paddington Rd OX 2333
Odell Co M P 2676 Salem Ave OR 4441
Ohmer George H PO Box 34 Sta D WA 3761

LIMA

Hocht Co Fred J 1832 Wendell Ave D-0133

MAUMEE

Honger Fairfield Co 1130 Key St 3-3211

MIDDLETOWN

Wright Eng's 1304 Elwood Ave

WEST RICHFIELD

*ANB Specialties Co Box 518 0150
*Bear Corp Neal 3435 Streetsboro Rd 100

OREGON

PORTLAND

*Borcham Co Don N 510 N W 19 Ave BR 3830
Hawthorne Electronics 700 SE Hawthorne Blvd FI 9375
Lugg Co Richard 2118 SE Division St EM 8918
*Mithorne Co L L 7521 NE Gillson St KE 0010
*Weber Co Dale 234 Sherlock Blvd AT 5403

PENNSYLVANIA

PHILADELPHIA AREA

*Bell Tom Jacksonville Ave (Easterly) RE 5-6837
*Bierbaum John W 835 W Sar Fand Bldg PE 5-3738
*Bligs & Co J Alan Box 450 (Doylestown) 9457
*Bittan-Boenecke 210 N 6 St (Camden N J) WO 4-8650

Blumenstein Assoc 5040 City Line Ave TR 7-4116
*Brookfield R F 55 Cricket Ave (Ardmore) MI 2-6911
Cannon Geo M 16 Trent Rd AR 6052W

*Cordray W Henry 18 W Chelton Ave VI 8-0447
*Dance Corp 1346 Suburban Sta Bldg LO 4-2870
Densham Harry W 250 S 17 Kl 5-1947

Diones Co M L 7341 Woodbine Ave TR 7-7831
*Edmonds E J 102 N Lexington (Havertown)
*Estersohn Harry 7135 Germantown Ave WI 7-1816
*Fairbanks Howard J 1615 Darby Rd (Havertown) GR 2-2467

*Foley Andrew A 640 Federal St (Camden N J) WO 3-2693
*Friedman Martin 1006 Western Sav Fand Bldg PE 5-4778

Gatty Sidney 11 N Clermont Ave (Margate N J) 2-1361
Girard Co W E 715 Fairfield Rd (Glenside) OG 0071

Hilliard Assoc 1125 Old York Rd (Ablington) OG 3249
*Joffries S A 105 Forrest Ave (Warburth) MO 4-8500
*Keefe Electronic Sales Co 201 N 6 St (Camden N J) WO 4-3970

Krieger Sales Co 300 S Broadway (Camden N J) WO 3-5931
Lawton Co 836 Mason Ave (Drexel Hill) SU 9-2146

*Lohan & Graham 1412 Manoa Rd MI 2-9047
Lewis Herman 1622 68 Ave LI 8-1281
*Lowery Inc L D 50 E Wynwood Rd (Wynwood) MI 2-9100

Telephone Midway 2 9100
L D Lowery
George G Scarborough
Robert A Sylvester
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*Macdonald Inc S K 1531 Spruce St KI 5-1205
*Maguire & Co J A 593 Drexel Bldg MA 7-1670
Massey Assoc 529 Brookhurst Ave (Warburth) MO 4-4200

Moyer M A Po Box 14 (Haddonfield N J) 9-6347
*Muggelworth J C 324 Hadden Ave (Collingswood N J) 5-7200

Telephone CO 5-7200 Teletype-TWX-Collingswood
New Jersey 1094
Electrical Engineer—Henry L Crout Jr
Lines Handled

Halipot Corporation
Heppner Manufacturing Company
I T E Circuit Breaker Co (Resistor Division)
Reeves Instrument Corporation
San Fernando Electric Manufacturing Co
Territory Covered

Pennsylvania (Eastern)—New Jersey (Central & Southern)—Delaware—Maryland—District of Columbia—Virginia

*Mandain L Parker Suburban Sta Bldg RI 6-3185
*Newson Jr C N 150 Terminal Ave WI 7-8742
Nolan J J 314 W Sparks St WA 4-1595

Oral Co John F Box 346 (Bryn Mawr) CO 6-2698
Paragon Sales Co 111 S 22 St RI 6-5699
Perna F J 2506 Stoneybrook Lane (Drexel Hill) SU 9-9045

*Quinlan D E 4700 Frankford Ave JE 3-0650
*Randall Co Ken 121 N Broad St LO 4-2151
Rollinger Albert R 8018 Winston Rd WI 7-4935

Slabin & Co Lewis 1067 Drexel Bldg WA 2-6740
Snyder Co V A 1526 Broad St ST 4-9141
Stinson Co J T 219 Sagamore Rd (Havertown) MI 7-0922

*Stratten Co C H 7852 Montgomery Ave (Elkins Park) MA 5-2231

*Tech Representation 25 S Easton Rd (Glenside) TU 1325
*Trinkle Wilmer S 2 Roberts Bloch TU 1075
Weber Lnz Assoc 238 Shalms St CM 3161 J
Williams V W 5 Circle Dr (Margate N J)

PITTSBURGH

Airgood Joseph M 742 Berwin Ave LE 1-3539
Brown Co R E 311 Ross St AT 1-2142
Berka Elco Equip Co 416 Maple Ave PE 1-5357
Clark Co Russell F 1404 Clark Bldg AT 1-8089

Groetzinger Co M W 410 E Goni Robinson AL 1-628C
Kaufman Sales Jerry Plaza Bldg AT 1-0206
Levine Albert 11 Jonquil Pl LO 1-7027
Ligs E C 1565 McFarland Rd FI 1-5100

Lowry-Dietrich Co 1404 Swantok St WA 1-2959
Ludgate Assoc John P 345 4 Ave AT 1-1805
*Macdonald Inc Samuel K 715 State Theatre Bldg AT 1-2253

Mates Hyman 5510 Hobart HA 1-8998
Olson Co John D 2046 Brookfield Rd BR 2083
*Pedolny James H 4716 Coleridge St MI 1-0800
Ransford Co H E 2601 Grant Bldg GR 1-1880

Shaw S J 7308 Church Ave LI 1-4727
Squires Co M B 1202 Grant Bldg GR 1-5566
Stover & Co S H 5495 Penn Ave EM 1-7533
*Tanner & Covert 600 Grant St 1-0131

*Tydings Emmet J 1565 McFarland Rd FI 1-5100

READING

Loose & Co W L 646 Gordon St RE 2-7094

TENNESSEE

CHATTANOOGA Johnson Jesse P 403 Dome Bldg 5-3463

KNOXVILLE

Hough Co A R 3601 Chapman Hwy 7-6660

MEMPHIS

*Cartwright & Bean 1336 Madison Ave 2-1914

Engelman Co A S 3205 Crump Ave 48-6263

Moody Co Joe 1215 Central Ave 2-1607

TEXAS

DALLAS

*Anderson Co Geo E 1901 Griffin St RI 5931
*Aymond Co Edward F 4312 Maple Ave LO 5233
*Berthold Sales Co 4411 Maple Ave LO 8329

*Branam Co 123 Mfg St RI 4995
*Camplin Sales Co 208 W Avery St RA 6620
Communication Service 3209 Cantore St PR 1852

*Corry Co Hal F 3111 Knox St JU 9172
*Crockett-Land & Co 2204 Griffin St RA 5764
*Delzell-Waynard Sales 3409 Oaklawn Ave JU 2411

Engineering Products Co 5005 W Lovens Lane EL 1179
Folsom Sam W 411 N Bishop St YU 9560
Green Co John A 6815 Oriole Dr DI 9918

*Guenther John B 7322 Marquette Ave EM 6286
*Haldenreich Co 6505 Park Lane FO 8-6763
Lipscomb Assoc Earl 3561 Marquette EM 7989

*McKinney Sales Co Jack F 1330 N Industrial Bldg ST 1997
*Schoonmaker Co J Y 2011 Cedar Springs ST 3335
*Smith Co J Earl 505 N Ervay St RA 2966

*Toxport Co 5004 Ross Ave TE 6735
*Wilks Co Ernest I 1212 Camp St RI 4059
*Yount Jack 1431 Pleasant Dr EX 0988

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Harris Co 716 Dan Waggoner Bldg 0738

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Calmes & Assoc D 4605 Locust St MO 5-1704
Harrison Equipment Co 1422 San Jacinto St AT 6315
*Kilgore Co M F Box 3113 JA 8459

*Packard J & D 770 M & N Bldg CA 7349
*Smith Co J Earl 6610 Salem St
*Willison Co G E 1821 W Alabama JU 1634

WACO

Broehenbrough & Sanders 316 Professional Bldg 4-0441

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SALT LAKE CITY Gatos Co 200 S Main St 9-1101

VIRGINIA

ALEXANDRIA

American Eng's Equip 122 N Fayette TE 6-1718

Brown & Assoc W A 3834 Mt Vernon Ave OV 3-6100

RICHMOND

Simpson & Son P M 717 Byrd Park Ct 84-1519

WASHINGTON

SEATTLE

Baeker Co Jas J 2321 2 Ave MA 8811

Carlson Co Fred W 2307 5 Ave EL 6630

*Haight Co Fred H 3212 Eastlake EA 1818

Howell Sales 1250 1 St S EL 4214

Jenson Co Vernor O 2616 2 Ave EL 6871

*Lee Co Dave M 2517 2 Ave MA 5512

*Marsh Agencies 2601 I Ave MA 8762

Morrill Co Ron 120 W Thomas GA 6644

Norris Co George D 3013 1 Ave EL 1344

*Northwestern Agencies 4130 1 Ave S EL 8882

*Parsons & Co C B 3028 1 Ave MU 3933

Porter Co Bart C 4310 Roosevelt Way ME 6829

*Strom Co S W 1612 Broadway FR 7515

*Wedel Co Frank 3215 Western Ave GA 0222

*Wildshind Co M K 216 1st Ave N EL 9881

WISCONSIN

MILWAUKEE

*Aaron & Assoc I I 829 N Marshall St BR 6-8515

Dickinson & Assoc E A 744 N 4 St BR 2-0517

Knaak Co L B 704 E Pleasant St DA 8-3434

Loeb Eugene R 3032 N Shoreland Ave WO 4-2155

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Alphabetical Listing of Manufacturers

WITH THE NEW, EXCLUSIVE LOCALIZER INDEX

A complete listing of the names and addresses of all the manufacturers in the electronic and allied industries. In the LOCALIZER INDEX listings, many manufacturers have listed home office telephone numbers, executive personnel, brand names, products, branch and regional offices as well as local

reps. The LOCALIZER INDEX provides you with the shortest means of contacting any manufacturer. Symbols show type of representation: BO signifies branch office; D distributor; DS distributor sales; GV government sales; IDS industrial & distributor sales; R rep; SE sales engineer

Indented listings are advertisements.

Abn Precision 540 Casanova Bronx 59 NY
 Abn Plastics 6322 N Clark St Chicago 26 Ill
 Adv Mfg Co 32-20 37 Ave Long Island City 1 N Y
 Adv Mfg 715 N Kedzie Chicago 12 Ill
 Accurate Electronics 1312 Ontario Cleveland 13 O
 Accurate Eng'g 2005 Blue Island Chicago 8 Ill
 Accurate Insulated Wire 25 Fox New Haven 13 Conn
 Accurate Mfg 44 Hopworth Pl Gardfield NJ
 Accurate Paper Tube 805 M Peoria Chicago 22 Ill
 Accurate Spring Mfg 3811 W Lake St Chicago Ill
 Acc Coll & Electronics 914 Middlesex Matechcon NJ
 Acc Elec Mfg 1458 Shakespeare New York 52 NY
 Acc Engr & Machine 3644 N Lawrence Phila 40 Pa
 Acc Instrument Co 172 Pacific St Brooklyn 2 N Y
 Acc Mfg Corp Chalfont Pa
 Acc Plastic 91-30 Van Wyck Expressway Jamaica N Y
 Acc Spring Mfg 78 W Houston New York 12 NY
 Acc Electronics Div 800 N Pitt St Alexandria Va
 Accuson Celluloids 1950 Washington Pl Huron Mich
 Ackerman Engravers 458 Broadway New York 13 NY
 Ackerman-Johnson 625 W Jackson Blvd Chicago 6 Ill
 Accu Battery 59 Pearl Brooklyn NY
 Accu Camera Corp 2704 W Olive Ave Burbank Calif
 Accu Coll & Transform 1915 N Ciybourne Chicago 14 Ill
 Accu Electric Corp Cuba NY
 Accu Electric Heating 1217 Washington Boston Mass
 Accu Electronics Sub Aerovox Corp Monrovia Calif
 Accu Folding Box 149 E 25 New York NY
 Accu Industrial 200 N Ladin Chicago 7 Ill
 Accu Oxygen 119 S 4 St Harrison NJ
 Accu Selentite 1450 W Randolph Chicago 7 Ill
 Accu Teletronics 1200 W 3 St Cleveland 13 Ohio
 Accu Tool & Spec Co 224 N Loomis St Chicago 7 Ill
 Accu Wire Co New Haven Conn
 Accu Wire Machine Co 234 E 3 St New York 7 N Y
 Accu Electronics Gibson City Ill
 Acoustical Products Mfg Dorsa Ave Livingston N J
 Acromark Co 601 Morrell Elizabeth 4 NJ
 Acru Mfg 2040E Main Columbus 16 Ohio
 Acru Products 369 Shurs Lane Phila 28 Pa
 Acru Switch Columbus Ohio
 Acru Tool & Die 4554 Brady Chicago 40 Ill
 Acru Transformer & Mfg 26-02 4 St L I City 2 NY
 Actineraft Prods B Sagamore Hill Pt Washington NY
 AC Transformer 21 Prospect St Newark NJ
 Adams Lighting 48 W 27 New York 1 NY
 Adams & Westlake 1025 N Michigan Elkhart Ind
 California-D—The A W Nash Company 2112 South Atlantic Blvd Los Angeles 22 Phone ANgelus 9-7304
 California-D—W C Matheson Company 228 Ninth Street San Francisco 3 Phone MAket 1-7589
 Massachusetts-D—Leo C Pelkus & Company 683 Atlantic Avenue Boston 11 Phone LIBerty 2-1946
 Missouri-D—Wells-White Company 301 Connor Building 6625 Delmar Boulevard St Louis 5 Phone PArtview 7622
 New York-D—E W Rowland Associates 110 Washington Street New York 6 Phone WHitehall 4-8395
 New York-D—Mr Harry R Snyder 5208 South Soling Street Syracuse Phone 92249
 Ohio-D—The Wagner Green Company 1935 Euclid Avenue Cleveland 15 Phone MAin 1-6382
 Pennsylvania-D—Russell F Clark Company Clark Building Pittsburgh 22 Phone ATLantic 1-8089
 Pennsylvania-D—Mr W Henry Cordray 18 West Cheltenham Avenue Philadelphia 44 Phone VICTOR 8-0447
 Texas-D—The William E Brice Company 1512 Pease Avenue Houston 3 Phone CApital 7321
 Washington-D—C 8 Parsons & Company 3028 First Avenue Seattle 1 Phone MUtual 3933
 Colorado-D—Powerlite Devices Limited 233 Dunbar Avenue Montreal 16 P Q Phone REgent 3-5331
 Colorado-D—Powerlite Devices Limited 1870 Davenport Road Toronto 9 Ontario Phone ROdney 1141
 Adv Div GMC Corp 10777 Van Owen Burbank Calif
 Adv Co 33 Key St Eastport Me
 Adv Communications 1 LeFevre New Rochelle NY
 Adv Corp 3800 Corlandt Chicago 47 Ill
 Adv Electric & Relay 2435 N Naomi Burbank Calif
 Adv Electronics 8510 N End Oak Park 37 Mich
 Adv Electronics PO Box 394 Passaic NJ
 Adv Recording Prods 36-12 34 St L I City 1 NY
 Adv Transformer 1122 W Catalpa Chicago 40 Ill

Advanced Electronics Rocky Hill Conn
 Advanced Vacuum Prods 22 Liberty Stamford Conn
 Aerocoll Inc 24 Cliff Jersey City NJ
 Aero-Coupling Corp Burbank Calif
 Aero Electronics 1512 N Wells Chicago 10 Ill
 Aerolite Electronics 507 26 St Union City NJ
 Aeromotive Equip 1632 Central Kansas City 10 Mo
 Aeronautical Comm Equip 3090 Douglas Miami 33 Fla
 Aeronautical Electric 5103 W Lawrence Chicago 30 Ill
 Aeronautical Electronics PO Box 6043 Raleigh NC
 Aeronautical Radio Mfg 155 1 St Minnetonka NY
 Aeroprojects Inc W Chester Pa
 Aeroquip Corp 300 S East Jackson Mich
 Aero-Tone Mfg 4836 Joy Detroit 4 Mich
 Aerovox Corp 740 Belleville New Bedford Mass
 Aetna Felt 204 Centre St New York 13 NY
 Affiliated Photo Co 21 W 45 New York 36 NY
 Affiliated Products 4802 N Broad St Philadelphia 40 Pa
 Ahrendt Instrument Co 4910 Calvert College Park Md
 Ainslie Electronic Prods 312 Quincy Quincy Mass
 Air Associates Inc Teterboro NJ
 Airborne Accessories 1414 Chestnut Hillside 5 NJ
 Airborne Electronics Co Van Nuys Calif
 Airborne Instruments Lab 160 Old County Mineola LI NY
 Aircraft Armaments 4415 Reisterstown Baltimore 15 Md
 Aircraft Electronics 94 Silas Deane Hwy Rocky Hill Conn
 Aircraft Marine Prods 2100 Paxton Harrisburg Pa
 Aircraft Radio Corp Beantown NJ
 Aircraft Transformer Corp Long Branch NJ
 Airdesign Inc 241 Fairfield Upper Darby Pa
 Airdraulics Engg 30 Burtis New Canaan Conn
 Airbyte Electronics 21 Cottage Bayonne 8 NJ
 Airceltron Inc 295 Bloomfield Ave Caldwell N J
 Air-Marine Motors 369 Bayview Amityville LI NY
 Airpax Products PO Box 137 Baltimore 20 Md
 Airplane & Marine Instruments Clearfield Pa
 Air-Tone Sound 1527 Chestnut Philadelphia 2 Pa
 Airtron Inc 1109 W Elizabeth Linden NJ
 Albuquerque-R—H A Kittleson Co 210 Caqua Drive NE Albuquerque 6-3437
 Chicago-R—Hower & Protol 4 N Cicero Ave COlumbus 1-3146
 Dallas-R—Jack F. McKinney Sales Co 1330 N Industrial Blvd Sterling 1997—PRospect 5246
 Dayton-R—Andy Grimm 1731 Ruskin Rd OREGON 1496
 Kansas City-R—W E Fry & Co Broadway at 34th Jefferson 5236
 Los Angeles-R—Kittleson Co 7614 Melrose Ave WHitney 1167
 San Francisco-R—Kittleson Co 2166 Market St HEMlock 1-5304
 Seattle-R—Ron Merritt Co 120 W Thomas St GARfield 6644
 Airtrex Devel Corp 20 W 22 New York 10 NY
 Air-Up Tower 350 E Bdw Muskegon Heights Mich
 Ajax Condenser 932 W Wrightwood Chicago 14 Ill
 Akaley Camera & Instrument 345 Hudson New York NY
 Akron Rubber Co 53 Warren St New York 7 NY
 Aladdin Radio Ind 703 Murfreesboro Rd Nashville Tenn
 Alamo Electronics 1415 N Brazos St San Antonio Tex
 Alcar Instruments 20-21 Wagaraw Rd Fairlawn NJ
 Alco Electronics Mfg 3 Walcott Ave Lawrence Mass
 Alco Mfg 4011 Coming St Omaha 3 Neb
 Alcon Metal Prods 1750 N Kimball Chicago 47 Ill
 Aiden Electronics PO Box 125 Westboro Mass
 Aiden Products 117 N Main Brockton 64 Mass
 Alfax Paper & Eng'g Co Westboro Mass
 Alina Corp 401 Broadway New York 13 NY
 All Channel Antenna 70-07 Queens Blvd Woodside 77 NY
 Allegany Instrument 1000 Oldtown Rd Cumberland Md
 Allegany Ludlum Steel Oiler Bldg Pittsburgh 22 Pa
 Allen & Allen 3947 W 59 Pl Los Angeles 43 Calif
 Allen-Bradley 1326 S 2 St Milwaukee 4 Wisc
 Allen Co L B 6751 Bryn Mawr Ave Chicago 31 Ill
 Allen Mfg 133 Sheldon St Hartford Conn
 Alliance Mfg 100 Lake Pk Blvd Alliance Ohio
 Phone: 15361
 Executive Vice Pres—John Bentio
 Atlanta-R—Maitland K Smith 317 Forrest Ave NE WAInut 6094-6095
 Buffalo-R—Fillmore & Fillmore 647 Elmwood Ave Summer 3355
 Camden NJ-R—Andrew A Foley 640 Federal St WOODlawn 3-2693

Chicago-R—Jerry Golien Co 2750 W North Ave Everglade 4-5959
 Chicago-R—George Pettitt 349 Ashland Ave River Forest Ill Phone COlumbus 10342
 Cleveland-R—C J Perrier 1010 Euclid Ave Cherry 1-7766
 Columbus-R—C L Pugh Co 4500 Dublin Rd Kingswood 4855
 Dallas-R—Crockett & Lund 2204 Griffin St RANDolph 5764
 Denver-R—W H Connors Co 5532 E Colfax FREmont 0566
 Detroit-R—H E Walton Co 76 Kercheval Grosse Pointe Tuxedo 1-5858-1-5859
 Fort Wayne-R—M W Fisch 419 Sherwood Terrace W HARRison 1089
 Kansas City Mo-R—W Farris Co 406 W 34th St LOGan 7495
 Los Angeles-R—Jack Beriman 1141 South La Cienega Bradshaw 7-2387
 Minneapolis-R—H M Richardson & Co 9 E 22nd St Geneva 4078
 San Francisco-R—E L Barman Co 758 Natoma St UNDERhill 3-0317
 Seattle R—George D Norris Co 3010 First Ave ELiot 1344
 Export—Joseph Plasencia Export Agent 401 Broadway NY 13 NY Dlgby 9-1612
 Allied Alloys Mach 141 River Rd Nutley NJ
 Allied Asphalt & Mineral 217 Bdw New York NY
 Allied Control 2 E End Ave New York 21 NY
 Allied Electronic 425 Brannan St San Francisco 7 Calif
 Allied Engraving & Stamping 161 Elliott Buffalo 3 NY
 Allied Industries 2500 Woodland Ave Louisville 10 Ky
 Allied Intl Inc 230 Park New York 17 NY
 Allied Mfg Corp 605 61 St W New York N J
 Allied Photo Engravers 153 W Huron St Chicago Ill
 Allied Radio 100 Northwestern Ave Chicago 12 Ill
 Allied Recording 32-32 Greenpoint Long Island City 1 NY
 Allied Research & Eng 1041 N Las Palmas Hwy 78 Calif
 Allis-Chalmers 935 S 70 St Milwaukee 1 Wisc
 Allis Co Louis 427 E Stewart Milwaukee 7 Wisc
 Allison Steel Mfg PO Box 6067 Phoenix Ariz
 Allmetal Screw Prods Garden City NY
 Alloy Metal Wire Prospect Park Pa
 All Star Prods Defiance Ohio
 All-tronics Inc 2 Secatoga Pl Washington NY
 Alonge Products Inc 163 W 23 St New York 11 N Y
 Alpar Mfg Box 152 Redwood City Calif
 Alpha Electronics 53 Bergen Tpk Little Ferry NJ
 Alpha Erection Corp Iowa City Iowa
 Alpha Metals 56 Water Jersey City NJ
 Alpha Wire 430 Broadway New York 13 NY
 Alprodeco Inc Mineral Wells Texas
 A L Products Co 311 Hickory St Kearny N J
 Altee Lansing 9356 Santa Monica Beverly Hills Calif
 Aluminum Co of America 1715 Golf Bldg Pittsburgh 19 Pa
 Aluminum Mfg Co 1629 Portland Ave Louisville 3 Ky
 Amalgamated Electronics Clinton Corners NY
 Ambroid Co 305 Franklin Boston 10 Mass
 American Barograph 599 Sackett St Brooklyn 17 N Y
 American Brass Co Waterbury 20 Conn
 American Bridge Co Frick Bldg Pittsburgh 19 Pa
 American Chemical Paint Co Ambler Pa
 American Chronoscope 316 W 1 St Mt Vernon NY
 American Cladmetals PO Box 544 Carnegie Pa
 American Communications 306 Bdw New York 7 NY
 American Condenser 4410 N Ravenswood Chicago 40 Ill
 American Cynamid Co 30 Rockefeller Pl New York 20 NY
 Amer Diathermy Prods 11858 Miss Los Angeles 25 Calif
 American Electric Cable 181 Appleton Holyoke Mass
 Amer Elec Motors 4811 Telegraph Los Angeles 22 Calif
 American Electrical Heater 6110 Cass Detroit 2 Mich
 American Electro Metal 320 Yonkers Yonkers 2 NY
 American Electroforming 2040 Colo Santa Monica Calif
 American Electronic Mfg Culver City Calif
 American Electronics 1203 Bryant Ave New York N Y
 American Electronics Labs 641 Arch St Philadelphia Pa
 American Electronics 157 Marion Blvd Columbus Ohio
 American Elite 1775 Bdw New York 19 NY
 American Genl Thermostat 2060 Bronx New York 60 NY
 American Gyro 1509 Colorado Ave Santa Monica Calif
 American Hard Rubber 11 Mercer St New York 13 NY
 American Hinge 206 Wallabout Brooklyn NY
 American Hydromath 145 W 57 St New York 19 NY

ALPHABETICAL LISTING of MANUFACTURERS with LOCALIZER INDEX

- American Instrument Co** Silver Spring Md
American Laubscher 333 W 52 New York 19 NY
American Lava Corp Chattanooga 5 Tenn
American Mach & Fdry 1085 Commonwealth Boston Mass
American Measuring Instr 21-25 44 Ave L 1 City 1 N Y
American Mercantile Co 33 W 42 St New York 36 N Y
American Metaseal 3337 Lincoln Franklin Park Ill
American Mica Insulation Co Manasquan N J
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American Molding Powder 703 Bedford Brooklyn 6 NY
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American Prods 8127 Oleander New Orleans 18 La
American Radio Co 445 Park Ave New York 22 N Y
American Radio Hdwe 152 MacQuesten Mt Vernon NY
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American Solder & Flux 2152 E Norris Phila 24 Pa
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American Steel & Wire Rockefeller Bldg Cleveland 13 O
American Thermo-Electric 198-11 Hollis Hollis 12 NY
American Time Prods 580 5 Ave New York 36 NY
American Tower Co Box 29 Shelby Ohio
American TV 5050 Bway Chicago 40 Ill
American TV & Radio 300 E 4 St Paul 1 Minn
American Vacuum 11779 Santa Monica W Los Angeles Calif
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Anchor Metal 244 Boerum St Brooklyn 6 NY
Anchor Plastics 36-36 36 St Long Island City 6 NY
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Automatic Mfg 65 Governor St Newark 4 NJ
Automatic Metal Prods 315 Berry Brooklyn 11 NY
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 Baltic Metal Prods 1200 Saiton Brooklyn 22 N Y
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 Bodde Screen Co 8829 Venice Los Angeles 34 Cal
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 Boeing Airplane PO Box 3107 Seattle 14 Wash
 Boesch Mfg Danbury Conn
 Boetsch Bros 221 E 144 New York NY
 Bogart Mfg 315 Seigel St Brooklyn 6 NY
 Bogen Co David 29 9 Ave New York 14 NY
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 Bohn Sound Eng'g Co Lincoln Highway E Ft Wayne Ind
 Boley Corp 118 E 25 St New York 10 NY
 Bolta Corp 70 Garden St Lawrence Mass
 Bomas Labs Beverly Mass
 Bond Electric Div Olin Industries New Haven 3 Conn
 Bond Electronics 60 Springfield Ave., Springfield NJ
 Bone Eng'g 701 W Bday Glendale 4 Calif
 Bonney Forge & Tool Allentown Pa
 Boom Electric Corp 5226 W Grand Ave Chicago 39 Ill
 Boonton Radio Intervalo Rd Boonton NJ
 Booth Co A E 265 S Alexandria Ave Los Angeles 4 Cal
 Boots Aircraft Mat 55 John Stamford Conn
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 Boston Insul Wire & Cable 65 Bay St Boston Mass
 Boulin Instrument 65 Madison New York 16 NY
 Bourns Labs 6135 Magnolia Ave Riverside Calif
 Bow Solder Prods 251 Freeman St Brooklyn 22 NY
 Bowen & Co Bethesda Md
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 Bowser Tech Ref Div Bowser Inc Terryville Conn
 Boyle Metalcraft 150 Sullivan St Brooklyn 31 NY
 Bozak Co R T 114 Manhattan St Stamford Conn
 Brach Mfg 200 Central Ave Newark 4 NJ
 Brack Industries Sysset LI NY
 Bracke-Selb X-Ray 293 3 Ave New York 10 NY
 Bradley Labs 168 Columbus Ave New Haven 11 Conn
 Brady Co 727 W Glendale Ave Milwaukee 12 Wisc
 Brainin Co G S 320 Washington St Mt Vernon NY
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 Rochester—R Wolfe-Marsey Sls 74 Park Ave MO 6278
 Covers NY outside Met area Erie Pa
 Snn Francisco—R David Ross 1355 Market St
 KL 2-2311 Covers N Cal Reno Nev
 Seattle—R Frank Werfel 3215 Western Ave GA 0222
 Covers Wash Ore British Col Alberta
 University Heights Ohio—R M Roth 13947 Cedar Rd
 Yellowstone 2-4262 Covers Ohio W Pa W Va
 Buffalo Instrument 1780 Elmwood Ave Buffalo NY
 Buggie & Co M H 726 Stanton St Toledo 1 Ohio
 Buhl Optical 1009 Beech Ave Pittsbarh 12 Pa
 Bulova Watch Co 450 5 Ave New York NY
 Bundy Taping Co 8109 E Jefferson Ave Detroit 14 Mich
 Bunnett & Co J H 81 Prospect Brooklyn 1 NY
 Burgess Battery Freeport Ill
 Burke Electric 12th & Cranberry Erie Pa
 Burke & James 321 9 Washash Ave Chicago 4 Ill
 Burling Instrument 16 River Rd Chatham N J
 Burlington Instrument 203 N 3 St Burlington Iowa
 Burney Eng'g Norwalk Conn
 Burnell & Co 45 Warburton Ave Yonkers N Y
 Phone YOnkers 5-6800 01 02 03 04 05
 Administration—Norman Burnell
 Chief Eng—Lewis G Burnell
 Gen Mgr—Michael Palmieri
 Prod Mgr—Leo Weiss
 Sls Mgr—Leo Schwartz
 Purchaser—Vincent Triwedi
 Binghamton—R—Holliday-Hathaway Inc 124 Chenago
 St Binghamton 3-1511 covers New York State
 Cambridge—R—Holliday-Hathaway Inc 238 Main St
 Elliott 4-1751 covers N Eng
 Canaan—R—Holliday-Hathaway Inc P O Box 797
 covers New England
 Chicago—R—Caine Sales Co 3020 North Cicero Ave
 Spring 7-4022 covers Ill Ind Mich Iowa-Wis-
 Minn
 Cleveland—R—Les Morrow Co 3123 W 117 St Clear-
 water 1-5700 covers W Po-Ohio
 Dallas—R—Edward F Aymond Co 4310 Maple Ave
 Logan 5233 covers Ark-La-Tex-Okl
 Dayton—R—Myron P Roebuck 9 Moss Oak Dr WAI-
 nton 1638 covers Dayton Ohio
 Fort Myers—R—Arthur H Lynch P O Box 466 5-6762
 covers Florida
 New York City—R—H & M Dev Co 270 Park Ave
 Suite 614-A Murray Hill 8-5858 covers Met
 NY NJ Westchester
 Continued next page

ALPHABETICAL LISTING of MANUFACTURERS with LOCALIZER INDEX

Burnell & Co (continued)

Pasadena R—Gordon S Marshall Co 40 S Los Robles RYon 1-8345 covers Calif-N Mex-Ariz
 Philadelphia R—Massey Assoc Inc 529 Brookhurst Ave Norberth Pa Mohawk 4 4200
 Rochester R—Halliday-Hathaway Inc 182 Mayflower Dr Monroe 3143 covers New York State
 Tulsa R—Jack Rogge 730 N Evinston covers Oklahoma
 Washington R—Massey Assoc Inc 1 Thomas Circle N W National 8-1957 covers Md Va N Cor Eastern Canada—JRG McVity & Company 51 Dalewood Road Toronto 12 Ontario Covers Toronto Montreal and Ottawa
Burnley Battery Elay St E North Pa
Burroughs Corp 1209 Vine St Philadelphia 7 Pa
 Telephone LOcust 7 1401
 General Manager—Perry C Smith
 Sales Manager—Lawrence T LaPatka
 Albuquerque N M—R—Gerald B Miller Co 327 Wyoming S E Albuquerque 5-8606
 Belmont Calif—R—Gerald B Miller Co 1334 Old County Rd Lyell 3-3438
 Chicago—R—Alfred Crossley & Associates 4501 N Ravenwood Ave UPlown 8-1141
 Dallas—R—Earl Lipscomb Associates P O Box 8042 Elmhurst 5345
 Dayton—R—Alfred Crossley & Assoc 53 Park Ave OXmoor 3594
 Detroit—R—S Sterling Co 15310 W McNichols Rd BROADway 3 2900
 High Point N C—R—Bivins & Caldwell Security Bank Bldg High Point 3672
 Hollywood Cal—R—Gerald B Miller Co 1550 N Highland Ave HOLLYwood 9 6305
 Pittsburgh—R—H E Ransford Co Grant Bldg Grant 1-1880
 St Louis Mo—R—Harris Hanson Co 5506 Kings Highway SWeebriar 5584
 St Paul 14 Minn—R—Alfred Crossley & Assoc 2388 University Ave PRIor 4955
 Seattle—R—Gerald B Miller Co King County Airport Room 101 LAnder 3320
 Tuckahoe N Y—R—Land C Air Sales 42 Oak Ave Tuckahoe 3 5500
Burton-Rogers 292 Main St Cambridge 42 Mass
Burwood Corp 4921 Exposition Blvd Los Angeles Calif
Bussmann Mfg Co University at Jefferson St Louis 7 Mo
Butler Mfg 3150 Randolph Bellwood III
B/W Controller Corp 2200 E Maple Rd Birmingham Ala

Cable Electric Products Providence RI
Cadell-Burns 40 E 2 St Mineola LI NY
Cadillac Electronics 19 W 26 New York NY
Cadre Industries Corp 19 Delaware Ave Endicott N Y
Calbest Eng's 828 N Highland Hollywood 38 Calif
Caledonia Electronics & Transformer Caledonia NY
Caldyne Co 120 Cross St Winchestr Mass
Califone Corp 1041 N Sycamore Hollywood 38 Calif
Calif Electronics 21332 Ventura Woodland Hills Calif
Caltrif Mfg 15 Union Lawrence Mass
Calresin Corp 4543 Brazil St Los Angeles 39 Calif
Caltech Electronics 8930 Lindblade St Culver City Calif
Caltron Prods 1310 S Hubart Los Angeles 6 Calif
Cal-Tronics Corp 11307 Hindry Ave Los Angeles 45 Calif
Calvide Tube 5232 W 104 Los Angeles 45 Calif
Calvin Co 1105 Truman Rd Kansas City 6 Mo
Cambridge Instrument Grand Cent Term New York 17 NY
Cambridge Thermionic 445 Concord Cambridge 38 Mass
Cambern Inc 32-40 57 Woodside 77 NY
Cambern Sales & Mfg PB Box 408 Battle Creek Mich
Camcar Prods 919 N Michigan Chicago 11 Ill
Camera Equip 1600 Bdwy New York 19 NY
Camera Mart 1845 Bdwy New York 23 NY
Cameron Craft 942 Brockhurst Oakland 8 Calif
Camloc Fastener 420 Lexington Ave New York NY
Campbell Industries Chattanooga 9 Tenn
Campbell X-Ray 110 Cummington St Boston 15 Mass
Canadian Radium & Uranium 630 S Ave New York 20 NY
Cannon Co C F Springfield NY
Cannon Electric 3209 Humboldt Los Angeles 31 Calif
 Atlanta Georgia—Glenn & Larson E B Glenn 172 Simpson St NW Tel Walnut 4906 4907
 Baltimore 12 Maryland—Robt L Wilkinson Co Massalea Dr Tel Volley 3-7800
 Boston 32 Massachusetts—Ray Perron & Company 1870 Center St Tel Fairview 4-1008
 Camden 2 New Jersey (Philadelphia area)—Robt L Wilkinson Company (Branch) Finance Bldg 6th and Cooper Sts Tel Lombard 3-6413
 Charlotte 1 North Carolina—Glenn & Larson Frank P Larson Jr 123 Brevard Court Tel 4-3994
 Chicago 35 Illinois—Leroy W Beier 6518 W North Ave Tel BErkshire 7-2420
 Cleveland 18 Ohio—Arthur H Boier 2138 Lee Rd Rm 18 Tracy Bldg Tel FAirmount 1-5644—1-5690
 Dallas 19 Texas—Edward F Aymond Co P O Box 6595 4312 Maple Ave Tel Logan 5233
 Denver 4 Colorado—Franklin Sales Co 1219 California St Tel TAbor 8245—8246
 Detroit 36 Michigan—H E Walton Co 76 Kercheval St Tel TLuxedo 1-5858—1-5859
 Indianapolis 44 Indiana—Wright Engineering 4241 Melbourne Rd Tel HUmboldt 8800 Box 7807
 Kansas City 5 Missouri—E L Mellon Co 2901 E Meyer Blvd Tel JACKson 0467
 Minneapolis 15 Minnesota—George Sturman 704 Portland Ave South Tel Geneva 6512
 New Orleans 22 Louisiana—Earl K Moore Co 4108 Clermont Drive Tel CRescent 4182
 New York New York—O F Mosin Co 1 Wolf's Lane Pelham 65 N Y Tel PEIham 8-4510

Pittsburgh 16 Pennsylvania—Branch Office John O Olsen Co 1262 Shadycrest Dr Tel LOcust 1-3273
 Salt Lake City Utah—Gates Company 200 S Main St Tel 9 1101
 St Louis 9 Missouri—Harris-Hanson Co 5506 S Kings Highway Tel Sweetbriar 5584
 San Francisco 3 California—Wm V Brainard 721 Clementina Tel UNDERhill 1-2569
 Seattle 1 Washington—Jos J Becker Co 2321 2nd Ave Tel Main 8811
 Syracuse (DeWitt) New York—Frank W Taylor Co P O Box 222 DeWitt N Y 4508 Genesee St Tel Syracuse 72-5198
Canoga Corp 5955 Sepulveda Blvd Van Nuys Calif
Capchart-Farnsworth Div IT&T Ft Wayne 1 Ind
Capitol Records 5515 Melrose Hollywood 38 Calif
Capitol Stage Lighting 527 W 45 New York 36, NY
Carad Corp 2850 Bay Rd Redwood City Calif
Carbennas Industries Grand Rapids Mich
Carborandum Co Global Div Niagara Falls NY
Cardwell Mfg Allen D Plainville Conn
Cargo Packers 73 Rutledge Brooklyn 11 NY
Carling Electric 505 New Park W Hartford 10 Conn
Carlson & Nicholson 497 Maynard Buffalo 21 NY
Carol Cable Co 190 Middle St Pawtucket RI
Carol Electronics 141 E 25 New York 10 NY
Carpenter Steel 101 W Bern Reading Pa
Carroll Mfg 415 S Aberdeen St Chicago Ill
Carruthers & Fernandez 1501 Colo Santa Monica Calif
Carter Motor 2644 N Maplewood Chicago 47 Ill
Carter Parts 213 Institute Pl Chicago 10 Ill
Cascade Research Corp 53 Victory Lane Los Gatos Calif
Cascade TV 153 Chestnut St Irvington NJ
Cass Machine 691 Antoinet Detroit 1 Mich
Castlewood Mfg 1430 S 12 Louisville 10 Ky
Cast Optics 1010 Post Rd Riverside Conn
Catalin Corp of America 1 Park Ave New York 16 NY
Caterpillar Tractor Co Peoria Ill
C-B-C Electronics 1310 Callowhill Phila 23 Pa
CBS-Columbia 3400 47 Ave Long Island City 1 N Y
CBS-Hytron 100 Endicott Danvers Mass
Celanese Corp 180 Madison New York 16 NY
Celomat Corp 521 W 23 New York NY
Celsoedse Prods Rochester Ill
Centralab Div Glove-Union 900 E Keefe Milwaukee 1 Wis
 President—Wm S Parsons
 Sls Mgr—Mechanical Elec Section (Switch Var Resistors)—Walter Peek
 Sls Mgr—Ceramic Electronics Section (Capacitors P, E, C, J)—Douglas E Thatcher
 Sls Mgr—Distributor Div—Robert A Mueller
 Assistant Sls Mgrs—
 Variable Resistors—James A Hannan
 Switches—Wm J Fay
 Capacitors—H E Moore
 Sealable Ceramics—J R West Sr
 Printed Electronics Circuits—W G Tuscani
 Export Mgr—Paul B Lombay
 Canada—Centralab Canada Ltd 804 Mt Pleasant Rd Toronto
Atlanta-IDS—Frank Nickerson 901 Bernine Ave NE LAmar 6878 Covers N R S Carolina-Georgia E Florida
Boston-IDS-S A Harris 318 Harvard St Longwood 6-6400 Covers Conn-Me-Mass-NH-RI-Vt
Camden-IS—Keele Elect Sls 201 N Sixth St WO 4-2215 Covers S NJ-Philadelphia
Cedar Rapids-IDS-Jerry Vrbik 309 Guarantee Bldg 4-0833 Covers Iowa-E Neb Rock Island Ill
Chicago-BO-F L Triegs 5359 W Fullerton BE 7-0129 Covers Chicago-Rock Island only
Chicago—Earl Champion 6459 Sheridan Rd AM 2-3565 Covers DS Chicago-IDS N Ill-Gary-Wis (S of LaCrosse)
Cleveland-IDS-Chas Moss 16956 Van Aken Blvd Wy 1 6018 Covers Ohio (Ex Dayton) & Cinn-Erie area of Pa
Dallas—J Earl Smith 505 N Erway RAndolph 2566 Covers DS only Oklahoma-W Arkansas-Louisiana-Texas (except W of Pecos) Also IS E Louisiana
Dallas-IS—Robt E Nesbitt 1330 N Industrial Blvd PRespect 5824 Covers W Arkansas-W Louisiana and Texas (except W of Pecos)
Denver-IDS Wm Cliff McCloud 5528 E Colfax Freemant 3067 Covers Colo-E Idaho-Mont-N Mex-Utah-Wyo-W Neb-Texas W of Pecos
Detroit-IDS-Ross Merchant 4829 Woodward TE 1-1677 Covers Mich
Indianapolis-IDS-L M DeVoe Co 4010 Washington Blvd Humboldt 1395 Covers Ind ex Gary-Ky-Dayton-Cincinnati
Jersey City-IS-D P Galasso 921 Bergen Ave JO 4-7277 and DI 4-1763 Covers NYC N New Jersey
Los Angeles-IS—Carl A Stone Assoc 1102 S Western Ave RE 2-8103 Covers S Cal Ariz
Memphis-IDS—Al S Engelman 3205 Crump Ave 48-6263 Covers Tenn-Miss-Ala-W Fla-E Arkansas
Los Angeles-DS—Richard L Stone 5864 Hollywood Blvd HO 2-1133 Covers S Calif-Arizona-Clark County Nev
Minneapolis-IDS-Merril Franklin 338 E Franklin Geneva 1805 Covers Minn-N Dak-S Dak-N Wis
New York-DS-James M Pickett 205 E 66th TR 9-9520 Covers NYC-N NJ
Philadelphia-S K MacDonald 1531 Spruce St KI 5-1205 Covers IDS Del-Md-Pa (ex Erie & Phila)-Wash DC-W Va-DS only in Phila-S NJ
Rochester-IS-Wm Richter 3 Juniper St Culver 7635 Covers NY ex NYC
Rochester-DS-Gordon LeRoy R D #1 Phelps, Phone 3F-16 Covers NY ex NYC

St Louis-IDS—Theo B Lowell Box 21 (Noyman) Mulberry 7803 Covers S Ill-Missouri-Kansas
 San Francisco-IDS-Logan Sls Co 530 Gough & Hemlock 1-5127 Covers N Cal-Nev
Seattle-IDS-J J Becker 2321 Second Ave Main 8811 Covers W Idaho-Ore-Wash
Toronto-IS—P J Heenan 804 Mt Pleasant Rd M 2236 Covers E Can
Toronto-DS—Roly H Kahner Box 99 (Willowdale) Covers E Can
Vancouver-IDS-D E McLennan 2191 W 1st Bayview 2898 Covers W Can
Central Call 1720 N Luett Indianapolis 22 Ind
Central Electronics 1247 W Belmont Ave Chicago 13 Ill
Central Electronics San Fernando W Los Angeles 39 Cal
Central Eng's 560 Providence Hwy Norwood Mass
Central Paper 2440 Labshore Muskegon 28 Mich
Central Porcelaine PO Box 42 Colombiana Ohio
Central Research Labs Red Wing Minn
Central Sales & Mfg Denville NJ
Central Scientifice 1700 Irving Park Chicago 13 Ill
Central Screw 3501 S Shields Chicago 9 Ill
Central Stamping Pole Ill
Central Transformer 910 W Jackson Chicago 7 Ill
Centran Inc PO Box 168 Greensburg Ind
Centronics Co 21-04 122 College Point 56 NY
Century Electric 1806 Pine St Louis 3 Mo
Century Electronics 14844 Darnard Van Nuys Calif
Century Geophysical 1333 N Utica Tulsa Okla
Century Lighting 521 W 43 St New York 36 NY
Century Projector Corp 729 7 Ave New York 19 NY
Ceramaseal Co Box 25 New Lebanon Conn N Y
Ceramic Heater Cathode Resistor Keyport NJ
Cerro de Pasco Copper 40 Wall St New York NY
Certified Radio Labs 5507 13 Ave Brooklyn 19 NY
C.G.S Labs 391 Ludlow St Stamford Conn
C & H Supply Boeing Field Seattle 8 Wash
Chadsey Corp Box 1858 Hartford 1 Conn
Champion Lamp 600 Broad Lynn Mass
Channel Master Corp Ellenville NY
Channer Corp 1488 Skokie Blvd Highland Park Ill
Chase Brass & Copper 236 Grand Waterbury Conn
Chase Resistor 9 River Morristown NJ
Chatham Electronics 630 W Mt Pleasant Livingston N J
Chattlain & Sons John 93 Cliff St New York 38 NY
Chattin Eng's Assoc 1401 Middle Harbor Oakland Calif
Cherry Channer 1488 Skokie Blvd Highland Park Ill
Cherry Rivet 1224 E Delhi Santa Ana Calif
Chester Cable 1000 Hill Chester NY
Chester Electronics 3922 W Central Toledo Ohio
Chester-Morton Electronics Corp Chester Pa
Chicago Condenser 3255 W Armitage Chicago 47 Ill
Chicago Dial 2917 S LaSalle St Chicago 16 Ill
Chicago Dio Mold 4001 Wrightwood Ave Chicago 39 Ill
Chicago Electronic Eng's 3223 Armitage Chicago 47 Ill
Chicago Expansion Bolt 1338 W Concord Pl Chicago Ill
Chicago Industrial 536 W Elm Chicago 10 Ill
Chicago Magnetic Control 1616 Damon Ave Chicago Ill
Chicago Standard Transformer 3580 Elston Chicago Ill
Chicago Telephone Supply 1142 W Beardsley Elkart Ind
Chicago Tool & Eng'r 8383 S Chicago Chicago 17 Ill
Chromatic Television Labs 703 37 Ave Oakland Calif
Church Co G M 5109 Hallfax Ave Minneapolis Minn
Churchill Lighting 344 Franklin Melrose 76 Mass
Ciba Co 627 Greenlich New York 14 NY
Cima Corp 119 Bralntree Allston Mass
Cinch Mfg 1026 S Homan Chicago 24 Ill
 President—Lester W Torr
 VP & Gen Mgr—E J Pool
 Sls Mgr—S Pannstiel
 VP & Dev Engr—S M DelCamp
 Credit Mgr—E L Hvale
 Purch Agt—T A Hopkins
 Adv Mgr—D T Campbell
 Export Mgr—Carrington H Stone
 Traffic Mgr—T A Hopkins
 Plastics Engr—G F Mangin
Atlanta—Cartwright & Bean 4030 Club Dr NE Cherokee 2483
Buffalo 21—R D Holt 643 Huxley Dr Parkside 0984
Chicago—Clough & Weisjes Covers Ind-Ohio-Ky P G Tony Covers Iowa-Minn B F Becker Covers Wis Nevada 2-2000
Detroit 11—R T Hall 2832 E Grand Blvd Trinity 3-9500
Kalamazoo—R H Eggericks 5006 Lake Forest Dr Phone 5-5686
Los Angeles 14—A C Maynard 1709 W 8th St DUinkirk 7-5371
Memphis—Cartwright & Bean 1336 Madison Ave Phone 2-1914
Newtonville Mass—E P Cogswell 459 Watertown St LaSalle 7-8400
New York 10—G S Maynard Jr A R Kubitz 15 E 26th St MURray Hill 3-9356
Philadelphia 40—W C MacFadden 3701 N Broad St Radcliffe 5-4775
Hamilton Ont—R M Healy Gage Ave & Beach R Phone 4-5791
Montreal Que—J R Johnston 502 University Tower Bldg Marquette 8609
Toronto 5—Arb H Morash—W C Miller 2657 Davenport Rd Princess 2157
Cinch-Jones Sls Div Cinch Mfg 1026 S Homan Chicago Ill
 President—Lester W Torr
 VP & Gen Mgr—E J Pool
 Sls Mgr—S Pannstiel
 VP & Dev Engr—S M DelCamp
 Credit Mgr—E L Hvale
 Purch Agt—T A Hopkins
 Adv Mgr—D T Campbell
 Export Mgr—Carrington H Stone

inch-Jones Sls Div (continued)

Traffic Mgr—T A Hopkins
Sls Mgr H B Jones Div—C W Nelson
Plastics Engr—G F Mongin
Atlanta—Cartwright & Bean 4030 Club Drive NE
Cherokee 2483
Boston—Ray Perron & Co 1870 Centre St Fairview 4-1008
Charlotte—M Cartwright & Son PO Box 9203 Plaza Station
Chicago—B F Becker Covers Wisc—P G Tomy Covers Iowa-Minn Nevada 2-2000
Cleveland—Scott & Steffen Inc 1836 Euclid Ave Main 1-1286
Detroit—Howard B Jones Div 2832 E Grand Blvd Trinity 3-9500
Kalamazoo—H B Jones Div 5006 Lake Forest Dr Phone 5-5686
Los Angeles—Howard B Jones Div 1709 W Eighth St DUNKirk 7-5371
Memphis—Cartwright & Bean 1336 Madison Ave Phone 2-1914
New York—M A Sachs 15 E 26th St Murray Hill 3-9356
Philadelphia—Samuel K Macdonald Inc 1531 Spruce St Kingsley 5-1205
Pittsburgh—Samuel K Macdonald Inc 335 Fifth Ave Atlantic 2253
Washington DC—Samuel K Macdonald Inc 3308 14th St NW Columbia 3938
Hamilton Ont—Howard B Jones Div Gage Ave & Beach Rd
Cincinnati Molding 2037 Florence Cincinnati 6 Ohio
Cincinnati Sub-Zero Prods Reading Rd at Paddock Cincinnati 0
Cincinnati Ventilating Corvinton Ky
Cinecolor Corp 2800 W Olive Ave Burbank Calif
Cinema Eng'g Div Aerovox Corp Burbank Calif
Cleveland IDS—Edwards Lohse Co 2123 E Ninth St Tower 1-5753
Dallas IDS—Robert E Nesbitt 1925 Cedar Springs Prospect 5824
Minneapolis IDS—A J Warner Co 5022 29th Ave S Drexel 1895
New York City 80—Cinema Engineering Co 101 Park Ave Murray Hill 6-6268
Philadelphia IDS—W Henry Cordray 18 W Chelena Ave Victor 8-0447
San Carlos Calif IDS—David H Ross Co 534 El Camino Real LYiel 3-8224
Seattle IDS—Jas J Backer Co 2321 Second Ave Main 8811
Winchester Mass IDS—Samuel C Hooker Inc 397 Highland Ave Winchester 6-2745
Circle Mfg Co PO Box 152 Little Falls NJ
Circon Component Co 17544 Raymer St Northridge Calif
Circuit Controls Co 3201 Peona St Steger Ill
Circuit Corp 2448 N Cicero Chicago Ill
Circuitron Inc 115 E Main St Rockville Conn
Citation Prods 233 E 146 St New York 51 NY
Clare & Co C P 3101 W Pratt Blvd Chicago 45 Ill
Claremont Labs Westbury LI NY
Clark Controller 1146 E 152 St Cleveland 10 Ohio
Clark Cooper Co Market St Palmyra NJ
Clark Crystal 2 Farm Rd Marlboro Mass
Clark Electronic Labs Box 165 Palm Springs Calif
Clarostat Mfg Co 1 Washington St Dover N H
Pres—Victor Mucher
Exec VP—George J Mucher
VP Sls—I James Youngblood
Sls Mgr Dist Div—Fran J Chamberlain
Pur Aqt—Emil O Schramm
Credit Mgr—Al Wilkens
Adv Mgr—Austin C Lescarbour
Export Div—M Simons & Son 25 Warren St New York NY
Atlanta IDS—James Millar Asso 1036 Peachtree St NE FLgin 0919
Atlantic Highlands NJ—I—Norman K Freeman 84 Bay Ave
Boston IDS—Henry P Segal Co Inc 131 Newbury St Kenmore 6-3012 6-6333 6-9755
Buffalo IDS—Leonard D Allen Inc Robert Bush 128 Knox Ave WOODlawn 1530
Chicago DS—Bruce Cumming & Asso 6029 W Belmont Ave MErimac 7-3770
Chicago IS—Henry Sorkis 6560 N Sheridan Rd HOLlycourt 5-1481
Cincinnati IDS—John O Olsen Co William F Needles 4061 Diehl Ave MEIrose 1361
Cleveland IDS—John O Olsen Co Richard H Villroy 16201 Shaker Blvd Wyoming 1-2624
Dallas IDS—J Y Schoonmaker Co (also W R Hays Jr) 2011 Cedar Springs STerling 3335
Denver IDS—W H Connors Co 5532 E Colfax St FR 0566
Detroit IS—H E Walton Co 76 Kercheval Ave TUxedo 1-5858
Detroit DS—Robert Milk Co 19367 James Couzens Highway BRoadway 3-2930
Fort Wayne IS—E S Needer 5302 Fairfield Ave Phone H-55492
Kansas City Mo DS—A R Thibau Co 402 Mfrs Exch Bldg Victor 7057
Kansas City Mo IDS—Myers-Young Forristal Inc Zell Myers 4538 Main St JERerson 4343
Los Angeles IDS—Perlmuth-Colman & Asso 2419 South Grant Ave Richmond 7-5524
Morion Ind DS—Victor Musser P O Box 331 MA-ri-on 835
Minneapolis IDS—A J Warner Co 5022 29th Ave S DRevel 1895
New York DS—Levin Adelman Co 25 Chittenden Ave TOMpkins 7-1145
New York IS—Samuel Bialek 205 E 42nd St MUR-roy Hill 2-518
Philadelphia DS—Leban & Graham 1412 Manoa Rd ARdmore 5515-J
Philadelphia IS—Clarence W Henderson 1629 Woodmere Way Havertown Upper Darby Hilltop 6-2932

Pittsburgh IDS—Lowry Dietrich Co 1404 Swontek St WALnut 1-2959
St Louis IDS—Myers-Young-Forristal Inc Ed Young 8147 Delmar Blvd DELmar 7701
Seattle IDS—Samuel N Stroum Co 1612 Broadway Franklin 7515
Silver Springs Md IDS—Charles Lienau 9427 Georgia Ave
Syracuse IDS—Leonard D Allen Inc 2401 S State St Phone 4-4195
Toronto IDS—Canadian Marconi Co 830 Bayview Ave Midway 0976
Export ID—M Simons & Son Co Inc 25 Warren St New York BRailey 7-5513
Clary Multiplier 408 Junipero San Gabriel Calif
Clearbeam TV Antenna 100 Prospect Burbank Calif
Clear Watch Agency 521 S Ave New York 17 NY
Cleo Div Reed Roller Bit 5125 Clinton Houston Texas
Clegg Labs 142 S Livingston Ave Livingston N J
Clement Mfg 6650 S Narragansett Chicago 38 Ill
Cleveland Container 6201 Barberton Cleveland 2 Ohio
Cleveland Electronics 6611 Euclid Cleveland 3 Ohio
Cleveland Wire Cloth 3573 E 78 St Cleveland 5 Ohio
Clifford Mfg Co 152 Grove St Waltham 54 Mass
Clifton Conduit Co 1278 Orville Ave Memphis Tenn
Clifton Radio & Photo 103 Lafayette New York NY
Clippard Instr Lab 7390 Colarain Cincinnati 24 Ohio
Clough-Brengle 6014 Broadway Chicago 40 Ill
Clum Mfg Co 611 W National Ave Milwaukee Wisc
Coast Coil 5352 W Wash Los Angeles 16 Calif
Coastal Connector 35 N 2 Mt Vernon NY
Codetyper Labs 550 S Ave New York 19 NY
Cohan-Egner 142 W 14 St New York 11 NY
Cohn Corp Sigmond 121 S Columbus Mt Vernon NY
Colicraft Inc Jandus Rd Cary Ill
Coil Eng'g & Mfg Co Roanoke Ind
Coil Winders New York Ave Westbury LI NY
Coil Winding Equip 19 Maxwell Oyster Bay NY
Cole Radio Works 86 Westville Caldwell NJ
Coleman Cable & Wire 4515 W Addison Chicago 41 Ill
Coleman Instruments 318 Madison Maywood Ill
Coleman & Sons D 4515 W Addison St Chicago Ill
Cole Steel Equip Co 285 Madison New York 17 NY
Coles Corp 3211 Woodland Phila 3 Pa
Colgate Mfg Lindenhurst NY
Collectron Corp 216 E 45 New York 17 NY
Collins Audio Prods 126 Park Westfield NJ
Collins Machine Buchanan NY
Collins Radio 855 33 NE Cedar Rapids Iowa
Collyer Insulated Wire Pawtucket RI
Colonial Insulator 907 Grant St Akron 11 Ohio
Color Television 973 E San Carlos San Carlos Calif
Colorone Electronics 238 William St New York 38 NY
Colorvision Plastics 247 Atlantic Boston Mass
Columbia Electric 4319 Hamilton NE Cleveland 14 O
Columbia Metal Box 260 E 143 New York 5 NY
Columbia Process Co State & Maple Columbus Ind
Columbia Records 1473 Barnum Bridgeport 8 Conn
Columbia Resistors 23 W Washington Ave Pearl River N Y
Columbia Technical 5 E 57 New York 22 NY
Columbia Wire & Supply 2850 Irving Park Chicago Ill
Columbus Process State & Mapleton St Columbus Ind
Colvin Labs 12 Court St Morristown NJ
Comar Electric 3349 Addison Chicago 18 Ill
Combustion Control 718 Beacon Boston 15 Mass
Comet Corp McHenry Ill
Commercial Plastics 2812 W North Chicago 47 Ill
Commercial Radio Monitoring Box 7037 Kansas City Mo
Commercial Research 20 Bartlett Detroit 3 Mich
Communication Accessories Hickman Mills Mo
Communication Devices 2331 12 New York 27 NY
Communication Equip 5646 Race Chicago 44 Ill
Communication Measurements 350 Leland Plainfield NJ
Communication Parts 7466 W Irving Pl Chicago 34 Ill
Communication Products Marlboro NJ
Communications Co 300 Greco Coral Gables Fla
Compeco Corp 2251 W St Paul Chicago 47 Ill
Component Mfrs 38-01 23 Ave Long Island City 5 N Y
Computer Control Co 106 Concord Ave Belmont Mass
Computer Corp 149 Church New York 7 NY
Computer Instruments 1964 Utica Ave Brooklyn 34 N Y
Computer Research Corp Hawthorne Calif
Conant Labs 6500 14th St Lincoln 5 Neb
Concert Halls See 250 W 57 New York 19 NY
Condenser Mfrs Inc 1018 Paarl St Nashville 4 Tenn
Condenser Products 7517 N Clark Chicago 26 Ill
Condor Radio Mfg 116 N Montezuma Prescott Ariz
Conn-Cord Progress Ave & Monroe Sts Union N J
Conn Hard Rubber 407 East New Haven 9 Conn
Conn Ltd C G Elhart Ind
Conn Marine Instrument Essex Conn
Conn Telephones & Electric Morlon Conn
Connector Corp 6025 N Keystone Chicago Ill
Conras Inc 19217 E Foothill Glendora Calif
Consolidated Eng'g 300 N Sierra N V Pasadena 15 Cal
Consolidated Molds Prods 309 Cherry Saranton 2 Pa
Telephone Diamond 2-7886
President—John O'Connell
Vice Pres & Sales Mgr—J W Pillingier
Vice Pres & Production Mgr—E W Birney
Binghamton N Y—J E Gwyn 105 Highland Avenue Phone 9-1659
Carmel Indiana—John R Wainwright P O Box 91—Phone 1-2102
Cleveland Ohio—F W Luther 3297 Chadbourne Road—Phone Skyline 1-8990
Detroit Michigan—R J Scothorn 550 Maccabees Bldg—Phone Temple 2-1550
Marblehead Mass—R M Boley 157 1/2 Jersey Street—Phone Neptune 2-3198
New York City—1740 Broadway—Phone JUdson 5-1700
Philadelphia Penn—James W Simmons 512 Jefferson Bldg 1015 Chestnut Street—Phone Market 7-3118
Stratford Conn—F E Kauer 35 Soundview Avenue—Phone DRevel 8-0489
Consolidated Producing 540 W Congress Detroit 26 Mich
Gens Productions Broward Airport Ft Lauderdale Fla
Consolidated Radio Prods 350 W Erie Chicago 10 Ill

Consolidated Vacuum 735 Ridge Rd W Rochester 3 NY
Cons Valtex Aircraft 3302 Pac Hwy San Diego Calif
Cons Wire & Assoc Co's 1635 S Clinton Chicago 18 Ill
Constable Eng'g J M 101-05 77th Ozona Park 17 NY
Constad Labs 214 W 29 St New York 1 N Y
Constantin & Co LL Rt 46 Ludl NJ
Constantine Eng'g Labs P O Box 471 Manwah N J
Contact Inc 238 Main Cambridge 42 Mass
Continental Carbon 13900 Lorain Cleveland Ohio
President—J W Jiro
Chairman of the Board—N Lifson
Treasurer—B S Lifson
Vice President—W M Wood
Secretary—K B Lifson
Cambridge Mass IDS—Holliday Hathaway Inc 238 Main St ELiar 4-1751
Chicago Ill IDS—Leroy W Beier Co 6518 W North Ave BEIshire 7-2420
Cleveland O IDS—John O Olsen Co 16201 Shaker Blvd Wyoming 1-2624
Decorat Co IDS—Avis McCorvey 307 Church St CRecent 6167
Detroit Mich IDS—Grant Shaffer Co 16267 James Couzens Hwy UNIVERSITY 3-1227
Farr Wayne Ind IDS—W T Brase 1804 Kentucky Ave EAsbrook 2527
Greeley Col IDS—Gordon F Moss PO Box 428 GReeley 770
Houston Tex IDS—M F Klicnera PO Box 3113 JACk-son 8459
Kansas City Mo IDS—Paul G Scholz Co 210 W 8th Suite 519 HARRison 7111
Los Angeles Calif IDS—W Bert Knight Co 10373 W Pico Blvd BRADshaw 2-5647
Minneapolis Minn IDS—Robert W Marshall 6106 Excelsior Blvd—MOhawk 9-6444
New York N Y IDS—Holliday Hathaway Co Inc 270 Park Ave MU 8-5858
New York NY IDS (Met NY)—F Edwin Schmitt Co 136 Liberty St WOrth 26550
Philadelphia Pa IDS—S Victor S Malta 1135 Slocum St Waverly 4-8688
Portland Ore IDS—Leonard L Minthorne Co 7521 NE Glison St
San Francisco Calif IDS—Mouthrop & Hunter 140 10th St HEMlock 1-2624
Ajax Ont Can IS—Boyley Engr Ltd 5 First St Waverly 6866
Continental Connector 30-30 Northern Blvd LIC NY
Continental Corp 553 W Randolph St Chicago 6 Ill
Continental-Diamond Fibre Newark Del
Continental Electric 715 Hamilton Geneva Ill
Continental Electric 325 Ferry Newark 5 NJ
Continental Electronic 4212 S Buckner Blvd Dallas Tex
Continental Electronics 302 Oakland Brooklyn 22 NY
Continental Electronics 4212 S. Buckner Dallas 10 Tex
Continental Sewer New Bedford Mass
Continental Textile & Supply W Armitage Chicago 39 Ill
Central Corp 718 Central Minneapolis 14 Minn
Control Devices 9918 Charlevoix Ave Detroit Mich
Control Electric PO Box 68 Gracie Sta New York 28 NY
Control Electronics 1925 N Y Ave Huntington Station NY
Control Eng'g Corp 560 Providence Hwy Norwood Mass
Control Instrument 67 35 St Brooklyn 32 NY
Control Products 306 Sussex Harrison NJ
Cook Ceramic Mfg 501 Prospect Trenton 1 NJ
Cook Electric 2700 Southport Chicago 14 Ill
Cook Labs 114 Manhattan Stamford Conn
Co-Operative Industries 100 Oakdale Chester NJ
Cooper Co Clark 379 N Market St Palmyra NJ
Cooper Electronic Prods 4500 Melrose Phila 24 Pa
Copperweid Steel Co Glassport Pa
Coradio Inc 196 Albion Paterson NJ
Cordware Eng'g 2195 42 Ave Oakland 1 Calif
Cornell-Dubilier Electric 333 Hamilton S Plainfield NJ
Corning Glass Works Corning NY
Sales Manager—Campbell Rutledge Jr
Corning office covers all products
New York SE—M R Berell 718 Fifth Avenue Circle 6-8224 Covers New England Metropolitan New York Philadelphia New Jersey
Los Angeles SE—H E Gumbart P O Box 887 EXbrook 5-8929 Covers West of Rockies
Cornish Wire 50 Church New York 7 NY
Corona Eng'g Service 94-52 Corona Elmhurst LI NY
Coronet Radio & TV 1451 E 27 Brooklyn 10 NY
Corrugated Paper Prods 2233 Utica Ave Brooklyn NY
Corry-Jamestown Corry Pa
Corson Electric Mfg 540 39th Union City NJ
Cortland Industries 4545 W Cortland Chicago 39 Ill
Cosa Corp 405 Lexington New York 17 NY
Cosmic Radio Corp 853 Whittier Bronx 59 NY
Coto-Cell Co 68 Pavilion Providence 5 RI
Cottrel Paper 88 Purchase St Fall River Mass
C-O Two Fire Equip PO Box 390 Newark 1 NJ
Counter & Control Corp 5225 W Electric Milwaukee Wis
Counand & Co E L Box 177 Hays do Grace Md
Counter Electric Products Bayo City Mich
Casino Inc 2325 Madison Ave Toledo 2 Ohio
Cox & Co 115 E 23 St New York NY
Craft Mfg 3949 W Schubert Chicago 47 Ill
Craig Machine Inc 90 Hutton St Danvers Mass
Cramer Co R W Box 49 Centerbrook Conn
Crane Packing 1800 Caylor Ave Chicago Ill
Crawford Dimension 456 N Rodeo Dr Beverly Hills Calif
Creative Eng'g 10816 Burbank Blvd N Hollywood Calif
Creative Plastics Corp Stony Brook N Y
Crescent Co Pawtucket RI
Crescent Industries 5900 W Toshi Chicago 31 Ill
Crest Transformer 1834 W North Chicago 22 Ill
Croname Inc 3701 Ravenswood Chicago 13 Ill
Crosby Enterprises 5030 Sunset Los Angeles 46 Calif
Crosby Labs Box 233 Hicksville LI NY
Crosley Div Aveo Mfg Cincinnati 25 Ohio
Cross Co M 15 Beekman New York 38 NY
Crowley & Co M L 1 Central Ave W Orange NJ
Crown Controls 124 S Washington New Bremen Ohio
Crown Engg 3821 Commercial NE Albuquerque N Mex
Cresible Steel Co 1000 S 4 St Harrison N J

ALPHABETICAL LISTING of MANUFACTURERS with LOCALIZER INDEX

Cryen Inc 1138 Mission S Pasadena Calif
 Crystal Labs 640 N Main St Wichita Kans
 Crystal Research 29 Allyn St Hartford Conn
 C-S Mfg 4089 Lincoln Blvd Venice Calif
 C-Thru Ruler 827 Windsor Hartford Conn
 Cubic Corp 28-31 Canon San Diego 6 Calif
 Calbertson Co G K 8371 Leroy San Gabriel Calif
 Cummins-Chicago N 4740 Ravenswood Chicago 40 Ill
 Cunningham Son & Co James Rochester 8 NY
 Carran Machine 31-25 45 St Long Island City NY
 Carlis Devel & Mfg 3266 N 33 Milwaukee 16 Wis
 Carlis-Wright Carlstadt NJ
 Custom Electronics 738 Speedwell Morris Plains NJ
 Custom Electronics 813 Chartres New Orleans La
 Catter-Hammer 436 N 12 Milwaukee 1 Wis
 Catter Metal Prods 1025 Line St Camden 3 NJ
 Cycle Electronics 356 Glenwood E Orange NJ
 Cyclotron Specialties Moraga Calif

Daco Machine & Tool 202 Tillary Brooklyn NY
 Dade Bros Old Country Rd Mineola NY
 Dage Electric Co Beech Grove Ind
 Dage Electronics Beech Grove Ind
 Dage Laboratories 1454 E North St Decatur Ill
 Dale Products Inc Box 1 Columbus Neb
 Phone: 2139
 President—George Risk
 Sec-Treas—Raymond Arndt
 Sales Mgr—R H Engstrom
 Controller—M A Woodworth
 Albuquerque NM-R—The Gates Co 110 Harvard Dr SE 3 8010

Atlanta R—Southeastern Sales Co C W Thomas Pres 84 Peachtree St N W Cypress 7381
 Baltimore-R—Robt L Wilkinson Co Maxalea Dr Valley 3-7800
 Buffalo-R—Maury Forber Assoc 1210 Hertel Ave Detroit 424
 Camden NJ R—Robt L Wilkinson Co & R Cooper St Lombard 3 6413
 Charlotte R—Glenn & Larson Co 123 Brevard Ct Phone 4 3994
 Chicago-R—Leroy W Beier Co 6518 W No Ave Berk shire 7-2420
 Cleveland-R—Scott & Steffen Inc 1836 Euclid Ave MAin 1-1286
 Dallas R—John A Green Co 6815 Oriole Dr Dixon 9918

Dayton R—(Wright Field Only) Edward E Maqee 5741 Paddington Rd Route # 7 OXmoor-2333
 Indianapolis R—Robert O Whitesell 2208 E Wash St Market 8517
 Kansas City-R—Boutros Instrument Lab 1627 E 31 St Wabash 1642
 Los Angeles—Thomas L Stevens Co 1151 S Broad way Richmond 7 5691
 Minneapolis-R—Merrill Franklin Co 338 E Franklin Ave Geneva 1805
 New York City-R—Koelber & Mack 1270 Broadway Wisconsin 7-7986
 New York City-R—Pan Mar Corp 1270 Broadway Pennsylvania 6-2203
 Oakland-R—W V Brainard Co 1010 Grosvenor Pl Olympic 3 2799
 Portland-R—Jas J Backer Co 5635 SE Ash St Empire 6023

Salt Lake City-R—The Gates Co 200 Main St Phone: 9-1101
 Seattle R—Jas J Backer Co 2321 2 Ave MAin 8811
 Toronto R—Ontario Teletronics Ltd 590 Yonge St PRincess 3127
 Da-Lite Screen 2711 N Palaski Rd Chicago 29 Ill
 Dailons Labs 5066 Santa Monica Los Angeles 29 Calif
 Dalmo Victor Co 1414 El Camino Real San Carlos Calif
 Dalmotor Co 1375 Clay Santa Clara Calif
 Dalmotron Co 534 Laurel St San Carlos Calif
 Danbury-Knudsen Inc 15 Thorpe St Danbury Conn
 Danbury Transformer 27 River Danbury Conn
 Danc Electronic Labs 316 Stuart Boston Mass
 Danforth Mfg Co 531 S 3 St Monmouth Ill
 Daniels Inc C R Box 6908 Baltimore 16 Md
 Dano Electric 93 Main Winsted Conn
 Dante Electric Mfg PO Box 6 Bantam Conn
 Davelle Labs 145-68 228 St Springfield Gardens N Y
 Davon Co 191 Central Ave Newark 4 NJ
 Davize Labs 4705 Queensbury Rd Riverdale Md
 Davize Molding Harry 1428 N Wells Chicago 10 Ill
 Davis & Co J W 9212 Denton Dr Dallas 9 Tex
 Davis Electric Cape Girardeau Mo
 Davis Electronics 4002 Burbank Blvd Burbank Calif
 Daystrom Electric Corp 221 N LaSalle St Chicago 1 Ill
 Dayton Aviation Radio & Equip Corp RR #3 Troy Ohio
 Dazorg Mfg 4885 Duncan St Louis 10 Mo
 Deagan Inc J C 1770 W Berteau Chicago 13 Ill
 Deal Products Easton Pa

Dean Electronic 35 S Ave Brooklyn 17 NY
 Dearborn Glass 2400 W 21 Chicago 8 Ill
 Decoda Instrument Box 153 Caldwell NJ
 Decatur Electronic 1620 Decatur Brooklyn 27 NY
 Decca Records Inc 50 W 57 St New York NY
 Decimeter Inc 1430 Market Denver 2 Colo
 DeCoursey Engg PO Box 235 Los Angeles 25 Calif
 Deco Electric 1101 N Paulina Chicago 22 Ill
 Defender Instrument 815 Clark Ave St Louis 2 Mo
 Deltz Co S J 38 River Edge Rd River Edge NJ
 DeJor-Ameco 45-01 Northern Blvd L I City 1 NY
 Phone: Astoria 8-1040
 President—Ralph A DeJor
 Sec-Treas—Harry DeJor
 Sls Mgr—George Weinman
 Sls Eng—C Mayer
 Sls Eng—E Steiker
 Sls Eng—Les Collan
 Chf Eng—Ken Lindsay

Ind Adv Mgr—David A Markov
 Adv Mgr—Edward Bassuk
 Beverly Hills-R—R C Dudek 405 No Maple Drive Crestview 5-5518 covers S Cal-Ariz
 Chicago-R—William E Burgoyne 7001 No Clark St Holly Ct E 5-2112 covers Ill-Ind
 Dallas-R—Campion Sales Co 208 W Avery St Randolph 6620 covers Texas-Ark-La
 Detroit-R—K C Burcow & Co Suite 207 22128 Grand River Ave KENwood 3-7700 covers O-Mich
 Kansas City-R—Maury E Bettis Co 406 W 34th St Logan 0772-3 covers Mo-Kan-Okla
 Milwaukee-R—J Aaron & Assoc Inc 829 N Marshall St BR 6-8515 covers Wis-Minn-Iowa
 Orchard Park-R—Ball Assoc Inc 54-58 E Quaker St ID-4416 covers Upstate New York
 Philadelphia-R—Henry Cordray 18 W Chelton Ave Victor 8-0447 covers E Pa-Balt Md
 San Carlos-R—Electronic Eng Assoc Ltd 1040 Brittan Ave LYell 3-2189
 Seattle-R—Northwestern Agencies Inc 4130 First Ave So Elliot 8882 covers Wash-Ore-Id-Mont
 Wellesley Hills-R—W B Pray Co 18 Brewster Rd Wellesley 5-3199 covers New Eng States

Delaware Optical Labs Lansdowne Pa
 Delco Radio Div Genl Motors Corp Kokomo Ind
 Delta-Remy Div Genl Motors Corp Anderson Ind
 Delmhorst Instrument Bounton NJ
 Delta Electronics 259 Green St Brooklyn 22 N Y
 Delta Electronics 1803 La Ave New Orleans 1 La
 Delta Radio 115 Worth New York 13 NY
 Deltron Inc PO Box 192 Glenside Pa
 DeLuxe Colls Wabash Ind
 deMars Eng'g & Mfg Co Lawrence Mass
 Demco Products P O Box 5042 Philadelphia 11 Pa
 Dement Labs New Fildner Bldg Portland 5 Ore
 Deming Indicator 1016 Acorn Dr Dayton 9 Ohio
 DeMornay-Bonardl 780 S Arroyo Pkway Pasadena Calif
 Demuth Glass Works P O Box 629 Parkersburg W Va
 Denrad Mfg 310W Woodward Denison Tex
 Designers for Industry 2915 Detroit Cleveland 13 Ohio
 Detectolab Inc 6544 Sheldon Rd Chicago 26 Ill
 Detect-Ray 2622 N Halsted Chicago 14 Ill
 Detetron Co 5631 Cahoon Blvd N Hollywood Calif
 De-Tec-Tronic Labs 1711 Terra Cotta Pl Chicago 14 Ill
 Detroit Controls 1650 Bway Redwood City Calif
 Detroit Diesel Engine 13400 W Outer Dr Detroit Mich
 Deutschmann Corp Tobe Providence Hwy Norwood Mass
 DeVry Corp 111 Armitage Ave Chicago 14 Ill
 Devtronics 221 N Hermitage Ave Trenton N J
 DeWald Radio 35-15 37 Ave Long Island City 1 NY
 DeWitt Devel Co 3008 W 127 Blue Island Ill
 Diallight Corp 60 Stewart Brooklyn 37 NY
 Dial Screw Prods 32-21 58 St Woodside NY
 Diamond Drill Carbon 244 Madison Ave New York N Y
 Diamond Mfg Corp 7 North Ave Wakefield Mass
 Diamond Microwaves 7 North Ave Wakefield Mass
 Diamond Power Specialty Lancaster Ohio
 Diamond Wire & Cable Sycamore Ill
 Diatron Co 3327 Dixie Dr Houston Tex
 Dia Co J W 1 Enloe St Englewood NJ
 Dictograph Prods 95-26 149 Jamaica L I NY
 Dielt Mfg 1186 Finderna Ave Somerville NJ
 Dielact Inc P O Box 827 Perth Amboy N J
 Dielcetric Materials 5315 N Ravenswood Chicago 40 Ill
 Dielcetric Prods 126 Virginia Ave Jersey City 5 NJ
 Dietz Co Henry G 12-15 Astoria Blvd L I City 2 NY
 Dietz Design & Mfg Grandview Mo
 Dietzen Co Eugene 2425 Sheffield Ave Chicago Ill
 Digital Instrument 212 Almaria Ave Coral Gables Fla
 Digital Products 7643 Fay Ave LaJolla Calif
 Dielctrix Corp 211-48 Jamaica Ave Queens Village N Y
 Dieltron 2661 S Myrtle Ave Mirvola Calif
 Dilks Co Seymour Conn
 Dillon & Co W C 14620 Keswick St Van Nuys Calif
 Dimco-Gray 207 E 6 St Dayton 2 Ohio
 Dinlon Coil Co Caledonia N Y
 Dirigo Compass & Instrument Box 37 Seattle B Wash
 DIV-MCO Inc 505 W 9 St Kansas City 5 Mo
 Division Lead 836 W Kinzie St Chicago 22 Ill
 Dixie Controls Box 7013 Norfolk 9 Va
 Dixon Crucible Co Joseph Jersey City 3 NJ
 D & M Products 13316 Hamilton Ave Detroit 3 Mich
 DoAll Co 254 N Laurel Des Plaines Ill
 Dinbeckman Co 3301 Monroe Cleveland 13 Ohio
 Doehler Metal Farn 192 Lexington Ave New York 16 NY
 Doelcem Corp 1400 Soldiers Field Rd Boston 35 Mass
 Doepte Mfg Co Chas Wm Rossmoyne Ohio
 Dolin Metal Prods 315 Lexington Ave Brooklyn 16 NY
 Dolinke & Wilkens 1901 Summit Ave Union City NJ
 Dolph Co John C Monmouth Junction NJ
 Dondar Devices 321 E 6 St Medford Ore
 Donham Craft Inc Thomaston Conn
 Donnelly Electrical 3050 Washington Boston Mass
 Donner Scientific 2829 7 St Berkeley 10 Calif
 Dormeyer Indus 3418 N Milwaukee Ave Chicago 14 Ill
 Dormitzer Electric 5 Hadley Cambridge Mass
 Dorn Equipment 88 Broad Boston 10 Mass
 Dorne & Marcollin 30 Sylvester Westbury NY
 Dorthea Mechanisms 81-01 Broadway Elmhurst L I N Y
 Douglas Alchraft Santa Monica Calif
 Douglas Inst Labs 176 Norfolk Ave Boston Mass
 Douglas Microwaves 11 Beechwood Ave New Rochelle N Y
 Dow Chemical Midland Mich
 Dow Corning Midland Mich
 Dow-Kay Co Warren Minn
 Downing Crystal Co 921 E Fort Ave Baltimore 30 Md
 D & R Ltd 402 E Gettysburg Santa Barbara Calif
 Drake Co R L 18 E Central Ave Miamisburg Ohio
 Phone: Miamisburg 6-2479—Dayton MO 6-2479
 Sales Manager—Gerald E Wolf
 Chief Engineer—Milton A Sullivan

Products: Filters for elimination of radio and television interference designed for manufacturer's special applications. Filters are either adjustable or pre-set and include high pass, low pass broad-band rejection filters and traps. Standard units for field and service work available from jobbers.
 Drake Electric Works 3656 Lincoln Chicago 13 Ill
 Drake Mfg 1713 W Hubbard Chicago 22 Ill
 Telephone Chesapeake 3-4462
 General Manager—H Ken Faute
 Director of Distribution—Rex Munger
 Sales Manager—Verne Smith
 Chief Sales Eng'r—Harry Wasielec
 Products
 Dial light sockets-miniature lamp assemblies signal lights-jewels
 Representatives
 Atlanta 6-R—Henry W Burwell Inc 1133 Ponce de Leon Ave NE Elgin 7517 Covers Ala-Fla-Ga-Miss-NC-SC-Tenn
 Boston 16-R—Gerber Sales Co 739 Baylston St Copley 7-0061 Covers New England
 Detroit Mich—Grant Shaffer Co 16267 James Couzens Hwy University 3-1227 Covers Mich
 Ft Wayne 5-R—Walter W Bieberich 2817 Plaza Dr Kenmore 2928 Covers Ind
 Kansas City 2 Mo-R—Myers-Young-Forsittal Inc 4550 Main Jefferson 4343 Covers So Ill-Iowa-Kan-Mo
 The Goory Sales Company 19555 Henry Rd Cleveland Ohio
 Los Angeles 5-R—Radio Prod Sales Co 1501 S Hill Prospect 7471 Covers So Cal
 New York 11-R—Howard Smith 259 W 14th Chelsea 2-2398 Covers Metrop NY
 Rochester 18 NY—The Hutchins Co 1795 Monroe Ave Hillside 3934 Covers Upper NY
 San Francisco 3-R—Wm J Purdy Co 79 Ninth UN demith 1 4321 Covers No Calif-Nev
 Seattle R—Fred H Haight 3212 Eastlake Ave East 1818 Covers Ida W Mont Ore Wash-Br Col-Alaska
 Teaneck NJ R—Jack Ryan 263 Edgemont Pl 6-1075 Covers NJ-E Pa
 Toronto 28-R—Atlas Radio Corp 560 King St W Waverly 4761 Covers Canada

Drabenfeld & Co B F 45 Park Pl New York 7 N Y
 Drassen-Barnes Corp 250 N Vinado Ave Pasadena Calif
 Dresser Electric 942 E Larned Detroit 7 Mich
 Driver Co Wilbur B 150 Riverside Newark NJ
 Driver-Harris Harrison NJ
 Drive-In-Theater Mfg Co 505 W 9 Kansas City Mo
 Drive-Lok Pin 605 W Wash Chicago 6 Ill
 Duaba Co Box 78 Coal Fork W Va
 Dabbings Co 41-10 45 St Long Island City 4 N Y
 Dubois Co Jean 2214 Dahlia St Denver 7 Colo
 Dabrow Devel Co 235 Penn St Burlington NJ
 Da-Co Ceramics Box 587 Butler Pa
 Deacomman Co M 580 S Ave New York 36 NY
 Dudgeck & Bock 2100 W Falton Chicago 12 Ill
 DuKane Corp St Charles Ill
 Dumont-Airplane & Marine 15 William St New York 5 N Y
 DuMont Labs Allan B 750 Bloomfield Ave Clifton N J
 DuMont Labs Inst Div 760 Bloomfield Ave Clifton N J
 DuMont Labs Inc Allen B 1500 Main St Clifton N J
 DuMont Labs Allen B 35 Market St E Paterson NJ
 DuMont Labs Inc Allen B 2 Main Ave Passaic NJ
 Damore Co 1300 17 St Racine Wis
 Dawson & Bayley 785 Hart Ave Buffalo 7 NY
 Dayton Co M W 7 Golf St Providence RI
 Dayton Co Keyport NJ
 dePant deMemoirs E I Wilmington 98 Del
 Durable Rubber Prods 549 W Falton St Chicago 6 Ill
 Durakool Inc 1010 N Main St Elkhart Ind
 Duranmark Inc 2 Seaton Ave Pt Washington NY
 Durant Mfg Co 1950 N Buffum St Milwaukee 1 Wis
 Durez Plastics & Chemicals N Tonawanda NY
 Duro Specialty B Bennett St Lynn Mass
 Duro Test Co 2321 Hudson Blvd N Bergen NJ
 Dwyer Mfg Co F W 317 S Western Ave Chicago 12 Ill
 DX Radio Products 2300 W Armitage Chicago 47 Ill
 Dynakon Corp 9623 Clinton Cleveland Ohio
 Dyna-Labs 1075 Stewart Ave Garden City NY
 Dynamic Air Engr 7412 Mate Ave Los Angeles 1 Calif
 Dynamic Electronics 73-39 Woodhavan Blvd Brooklyn N Y
 Dynavox Co 40-05 21st Long Island City NY
 Dzus Fastener PO Box 185 Babylon NY

Eagle Electric 23-10 Bridge Plaza, Long Island City NY
 Eagle Penclt 703 E 13 New York NY
 Eagle-Picher Co American Rids Cincinnati 1 Ohio
 Eagle Signal 202 20 St Moline Ill
 Eagle Speaker Co 4056 W Roosevelt Rd Chicago 23 Ill
 Eastern Air Devices 385 Central Ave Dover N H
 Eastern Heat Treating 250 W 54 New York 19 NY
 Eastern Industries 100 Regent St E Norwalk Conn
 Eastern Metals Inds 250 W 54 St New York 19 NY
 Eastern Mite-Stand 56 Christopher Brooklyn 12 NY
 Eastern Prec Resistor 130-11 90 Ave Richmond Hill NY
 Eastern Smelting 109 W Brooklyn Boston 18 Mass
 Eastern Specialty 3617 N B St Phila 40 Pa
 Eastgap Co 285 Columbus Boston 14 Mass
 Eastman Chemical Prods Kingsport Tenn
 Eastman Kodak Co Rochester 4 NY
 Easy-Up Tower 427 Rossmoyne Racine Wis
 Eberhard Faber Penclt 37 Greenpoint Brooklyn 22 NY
 Ebert Electronics 212-26 Jamaica Ave Queens Village N Y
 Eby Inc Hugh H 4700 Stenton Phila 44 Pa
 Ecco High Frequency 7020 Hudson Blvd N Bergen NJ
 Eckert-Mauchly Div Remington-Rand PHla 29 Pa
 Eckstein Radio-TV 3400 E 42 Minneapolis 6 Minn
 Ecligso-Pioneer Div Bendix Aviation Teterboro NJ
 Economy Fuse 2717 Greenview Ave Chicago 14 Ill

Electronics 425 S Sandusky Delaware Ohio
 Ed Products 7 Garden Pl Baldwin L I N Y
 Ed Baker 4711 North Ave Chicago 39 Ill
 Ed Eng'g Co 1568 S 1 St Milwaukee 4 Wis
 Ed Garbushausen & Grier 160 Brookline Boston Mass
 Ed 207 Main Worcester 8 Mass
 Ed Inc Thomas A 93 Lakeside W Orange NJ
 Ed 5929 E Danes Hwy Gary 5 Ind
 Ed Electronic 204 W Houston New York 14 NY
 Ed College Point 56 NY
 Ed Salas 150-45 12th Whitestone NY
 Ed Lab 107-56 113 St Richmond Hill 19 NY
 Ed Inc 1501 W Congress Chicago 7 Ill
 Ed Engg 770 S 13 Newark 3 NJ
 Ed Electronic 1902 N 3 Temple Tex
 Ed McCullough 798 San Mateo San Bruno Calif
 Ed Gen Mgr—G F Wunderlich
 Dir of Research—Harold E Sorg
 of Field Eng—O H Brown
 of Tech Services—Winfield G Wagener
 Personnel Mgr—Roberta McMahon
 Tech Agt—Donald Rogers
 Asst Mgr—Berley J Baker
 Asst R—J E Joyner 7524 Jenny Wren Lane SW
 PO Box 341 Station A AMhurst 1101
 Asst R—Tim Coakley Sales Office 148 Needham
 St Newton Highlands Decatur 2 4800
 Chicago R—Royal J Higgins Co 10105 So Western
 Ave Cedarcrest 3-7388
 Dallas R—Jack Yount 1431 Pleasant Drive Express
 0988
 Denver R—McCloud & Raymond Co 5528 E Colfax
 Ave Fremont 3067
 Jersey City R—Adolph Schwarz 15 Exchange Place
 Room 919 Delaware 3 2424
 Kansas City R—Clyde H Schryver Sales Co 4550
 Main St Room 224 Westport 4660
 Los Angeles R—Herb Becker 1140 Crenshaw Blvd
 Webster 1-1257
 San Francisco R—Export Agents—Frazar & Hansen,
 Ltd 301 Clay St EXbrook 2-5112
 Seattle R—Dove M Leo Co 2517 2nd Ave MAin 5512
 Etanilo Stop West 2330 Vauxhall Rd Union NJ
 Eng Corp 190 W Glenwood Phila 40 Pa
 Etan Tool & Screw 1930 Broadway Rockford Ill
 Etan Mfg 436 E Manchester Ave Los Angeles Calif
 Etan Corp 5827 E Beverly Blvd Los Angeles Calif
 Etan of N Y 70-72 E 2 St Mineola L I N Y
 Etanlab Inc 105 1 St Cambridge Mass
 Etan Mfg 2537 Madison Kansas City Mo
 Pres—Gordon Groth
 VP & Sales Mgr—R 1 Seymour
 Asst Sales Mgr—John Lane
 Chief Eng—R A Jarboe
 Ardmore Pa R—R F Brookfield 53 Cricket Ave
 Chicago R—T B Hunter 4441 W Irving Park Rd
 Cleveland R—Service Equip Co 4500 Euclid
 Dallas R—W N Wright 5738 N Central Expressway
 Denver Mass R—A F Loranz Centre St
 Kansas City R—Harris Hanson Co 7916 Paseo
 Los Angeles R—Eastman Pacific Co 2320 E 8
 Mineola NY R—Hicks-Keene Co 42 Third Ave
 Montreal R—S C Hooker Ltd 4 Valois Circle
 New Haven R—C D Hammond Westville PO 3062
 New York R—S Ginsburg W 40th (Export)
 St Louis R—Harris-Hanson Co 5506 S Kingshighway
 St Paul R—G Ragan 1406 W Idaho
 Seattle R—M K Widdick 216 1st Ave N
 Syracuse R—W H Zimmerman 647 S Warren
 Washington DC R—J W Whitfield 6006 Onondago
 Rd
 Winchester Mass R—S C Hooker 397 Highland
 Electron Mfg 1901 Ciybourn Chicago 14 Ill
 Electric Auto Lite Port Huron Mich
 Electric Controller 2700 E 79 Cleveland 4 Ohio
 Electric Cord Co 195 William St New York 38 N Y
 Electric Design & Mfg Burlington Iowa
 Electric Eye Equip & Mfg Fairchild Danville Ill
 Electric Furnace Co Salem Ohio
 Electric Indicator Co Camp Ave Springdale Conn
 Electric Mch Mfg 1331 N E Tyler Minn 13 Minn
 Electric Products 1727 Claratone Rd Cleveland 12 Ohio
 Electric Regulator Corp Norwalk Conn
 Electric Soldering Iron Deep River Conn
 Electric Specialty 211 South Stamford Conn
 Electric Storage Battery 42 S 15 Phila 2 Pa
 Electrical Communica 765 Clementina San Fran 3 Calif
 Electrical Indus Div Ampex 44 Summer Ave Newark 4 NJ
 Electrical & Physical Instr Corp 42-19 27 St Long Island
 City 1 NY
 Engineering Office 42-19 27th St LIC 1 NY
 Phone Longacre 4-2265
 Phone Stillwell 4-6389
 Harris Groder
 William Hovemeyer
 Sales and business office 25 W 43rd St NY 36
 Phone Longacre 4-2265
 Takhoe NY R—Land-C-Air Sales Co 42 Oak Ave
 Phone Woodbine 1-4700-1-2
 Electrical Refractories E Palestine Ohio
 Electrical Service 1271 Mission San Francisco Calif
 Electrical Tower Service 206 S Wash Paolo 2 Ill
 Electrical Utilities 2427 St Vincent's LaSalle Ill
 Electrical Winding 2015 N Kelmar Chicago 39 Ill
 Electroil Transformer Ossining NY
 Electro Assemblies 2935 W Belmont Chicago 18 Ill
 Electrochemical Industries Worcester 3 Mass
 Electro Connector 190 W Glenwood Philadelphia 40 Pa
 Electro Craft 5 Milton Ave Dorchester 24 Mass
 Electro Devel 6006 W Wash Culver City Calif
 Electrodyne Co Endicott St Norwood Mass
 Electro Engg 6021 College Oakland 18 Calif
 Electro Engg 627 W Alexandria Detroit 1 Mich
 Electro Engg Prods 609 W Lake Chicago 10 Ill
 Electrofax Corp New Canaan Conn
 Electrofilm Corp 7116 Laurel Canyon N Hollywood Calif
 Electro-Impulse Lab 62 White Red Bank NJ
 Electro-math Corp 70 Westmoreland White Plains N Y
 Electromatic Mfg 88 University New York 3 NY

Electro Measurements 4312 S E Stark Portland Ore
 Electro-Mechanical Inst 812 Chestnut Parkside Pa
 Electro-Mechanical Prods Riverhead L I NY
 Electro-Mech Research 64 Main Ridgefield Conn
 Electro-Mech Specialties 6819 Melrose L A 38 Calif
 Electro-Mac Lab 21-09 43 Ave Long Island City N Y
 Electro-Medical Lab S Woodstock 10 Vt
 Electro-metric Inc Woodstock Ill
 Electro-motive Corp 45 Crocker Rochester NY
 ElectroMotive Mfg Willimantic Conn
 Electron Enterprises 6917 W Stanley Berwyn Ill
 Electronic Apparatus Elkhart Ind
 Electronic Assemblies 122 W 5 Kansas City Mo
 Electronic Associates Long Branch NJ
 Electronic Batteries 34 35 St Brooklyn 32 NY
 Electronic Beam 923 Old Negerperhan Yonkers NY
 Electronic Brazing 140 Glenridge Montclair NJ
 Electronic Coils 33 Lyman Springfield Mass
 Electronic Components 835 N Larrabee Chicago 10 Ill
 Electronic Computer 160 6 Ave New York 13 NY
 Electronic Control 2138 Westwood Los Angeles Calif
 Electronic Control 1573 E Forest Detroit 7 Mich
 Electronic Creations 367 Greenwich New York NY
 Electronic Devel Lab 43-07 23 Ave L I City 5 NY
 Electronic Devices 429 12th Brooklyn 15 NY
 Electronic Eng 362 W Bowery Akron 7 Ohio
 Electronic Eng 180 S Alvarado St Los Angeles Calif
 Electronic Enterprises 65 7 Ave Newark 4 NJ
 Electronic Fabricators 682 Broadway New York 12 N Y
 Products: EFCON miniature plastic film capacitors—
 Silvered mica capacitors
 Binghamton R—Holliday-Hathaway Co Inc 124
 Chenango St Binghamton 3-1511 Covers New
 York state
 Chicago R—R Edward Stemm 5681 W Lake St
 COLUMBUS 1-1566 Covers Illinois—Indiana—
 Wisconsin—Iowa—Minnesota
 Pasadena R—Allen Bell Co 385 E Green St Ryan
 1-5497 Covers Southern California—Nevada—
 New Mexico—Arizona
 Rochester R—Holliday-Hathaway Co Inc 182 May-
 flower Dr Monroe 3143 Covers New York State
 Somerville Mass R—John E Boeing Co 70 Cross St
 E Somerset 6-5300 Covers New England
 Utica R—Holliday-Hathaway Co Inc 23 Bradley Rd
 Utica 2-1602 Covers New York State
 Washington R—Associated Engineering Services Inc
 1 Thomas Circle NW National 8-0072 Covers
 District of Columbia—Maryland—Virginia
 Electronic Heating Newton Highlands 61 Mass
 Electronic Instruments 84 Withers Brooklyn 11 NY
 Electronic Machine Parts 204 Lafayette St New York N Y
 Electronic Mfg 20 Orange St Newark NJ
 Electronic Measurements Eatontown NJ
 Electronic Measurements 280 Lafayette New York 12 NY
 Electronic Mechanics Clifton NJ
 Electronic Parts 508 25 St Union City NJ
 Electronic Processes Los Altos Calif
 Electronic Prods 4755 Telegraph Los Angeles 22 Calif
 Electronic Prods Box 450 Red Bank NJ
 Electronic Prods 111 E 3 St Mt Vernon NY
 Electronic Rectifiers 2102 Spann Ave Indianapolis 3 Ind
 Electronic Research 1420 E 25 Cleveland 3 Ohio
 Electronic Research 11550 39th NE Seattle Wash
 Electronic Research Assoc 715 Main St N Caldwell N J
 Electronic Signal Williston Park L I NY
 Electronic Specialty 3456 Glendale Los Angeles 39 Calif
 Electronic Systems 578 E 161 New York 56 NY
 Electronic Transformer 207 W 25 New York 12 N Y
 Electronic Tube 1200 E Mermald Lane Phila 18 Pa
 Electronic Workshop 26 W 8 St New York 11 N Y
 Electronics Research Evansville Ind
 Electro-Nite Carbon 1133 E Columbia Ave Phila 25 Pa
 Electron Radar Prods 1041 N Palaski Rd Chicago Ill
 Dickens 2-5885
 Factory Lab—North Aurora Ill
 Phone—Aurora 8285
 Management Sales—J J Bailey
 Engineering—O T McIlvoine
 Production—W A Bailey
 Purchasing—C W Wright
 Electrons Inc 127 Sussex Newark 4 NJ
 Electro-Physical Labs 65 Harvard Stamford Conn
 Electro-Physics 287 Bdry New York 7 NY
 Electro Precision Prods 139-30 34 Rd Flushing N Y
 Electro Prods Labs 4501 N Ravenswood Chicago Ill
 Electro-Pulse Inc 11811 Major St Culver City Calif
 Electro-Seal 946 North Ave Des Plaines Ill
 Electro-Search 4337 N 5 St Philadelphia Pa
 Electro-Snap Switch 4218 W Lake Chicago Ill
 Electro-Sound Corp 115 Halleck St Boston Mass
 Electro Supply 405 N Broom Madison 3 Wis
 Electro Switch Corp 167 King Weymouth 88 Mass
 Electro Tec 4 Romanelli S Hackensack NJ
 Electro-Tech Equip 308 Canal New York NY
 Electro-voice Corp Azusa Calif
 Electro Vision Lab 4227 Francis Lewis Blvd Bayside NY
 Electro-Voice Buchanan Mich
 Electrovox Co 60 Franklin St E Orange NJ
 Electyome Motor Products Genoa Ill
 Elex Co 150-50 Melbourne Ave Flushing N Y
 Elgin Metalformers Corp 901 N Liberty St Elgin Ill
 Elizabeth Iron Works PO Box 360 Elizabeth NJ
 Elk Electronics Labs 333 W 52 New York 19 NY
 Ellar Woodcraft 431 W 28 New York 1 NY
 Ellanar Chemical 2308 Oakton St Evanston Ill
 Ellis Associates Box 77 Pelham 65 NY
 Ellison Draft Gage 548 W Monroe Chicago 6 Ill
 Ellis Table Co 130 W 3 New York NY
 Elm Labs 18 E Broadway Hobbs Ferry NY
 El-Rad Mfg 2800 W Cullom Chicago 18 Ill
 Phone: IRVing 8-7300
 Sls Mgr—Part—J A Snow
 Prod Mgr—Part—E Plank
 Chief Eng—John T Clark
 Purch—W Plank
 Fort Wayne 4 Indiana R—Wm Meily 4017 So Har-
 rison Phone Ken 2441
 Eltran Corp 113 W Station St Anno Ill

El-Tronics 437 N 5 St Philadelphia 23 Pa
 Embassy Engg 224 E 204 St New York 58 NY
 Emeloid Co 1239 Central Hillside NJ
 Emerald Mfg 6025 N Keystone Chicago 30 Ill
 Emerson & Cuming 869 Washington St Canton Mass
 Eric W Anderson—Phone Canton 6-1066
 New York 80—35 W 53rd St Plaza 7 0524
 Washington DC R—David J Shamp 1500 Mass Ave
 HUDSON 3 4167 covers District of Columbia
 Virginia—Maryland
 Wellesley Mass R—Robert W Gray Inc 572 Wash St
 WES-5296 covers New Eng
 Emerson Electric 8100 Florissant St Louis 21 Mo
 Emerson Radio & Phono 111 8 Ave New York 11 NY
 Emmett Mach 2249 14 St SW Akron 14 Ohio
 Empire Coll Beechwood & 2 St New Rochelle NY
 Empire Devices 38-25 Bull Blvd Bayside 61 NY
 New York R—Burlington Asso Ltd 103 Lafayette St
 Covers NY-NJ Conn-E Pa-DC-DeI-Md-New Eng
 Digby 9 1240
 Chicago R—R Edward Stemm 5681 W Lake St Covers
 Ill Ind-Wisc E Iowa-E Minn COLUMBUS 1-1566
 Denver R—Allen I Williams Co 124 W 12 Ave
 Covers Col-Neb-New Mex Utah-Wyo SE Idaho-
 W Kan MAin 3 0343
 Ft Worth R—Mitchell F Speirs P O Box 11033
 Covers Texas Webster 4254
 Los Angeles R—Carl A Stone Asso Inc 1102 S West-
 ern Ave Covers Cal-Ariz-Nev Republic 2-8103
 Montreal Que-R—Cassor (Canada) Ltd 758 Victoria
 Sq Covers Canada University 6-5149
 Export R—Lear International Export Corp 9 E 45 St
 NYC MURray Hill 2-3760
 Empire Electronics Co 166 River St Paterson N J
 Empire State Labs 2608 Morrish Bellmore L I NY
 EMSCO Derrick PO Box 1289 Houston 1 Tex
 Endevo Corp 689 S Fair Oaks Ave Pasadena Calif
 Engco Farm Equip Monticello Iowa
 Engco Associates 434 Patterson Dayton 9 Ohio
 Engco Co 27 Wright St Newark NJ
 Eng's Developments Box 1046 Portsmouth RI
 Eng Devel Labs 5929 E Danes Highway Gary Ind
 Eng Labs 602 E 4 St Tulsa 3 Okla
 Eng Res Assoc Div Remington-Rand St Paul 4 Minn
 Engg Research & Devel Addison Ill
 Engis Equip 431 S Dearborn Chicago 5 Ill
 Ensign Coll 2516 S Palaski Chicago 23 Ill
 Entwhistle Co James L 1475 Elmwood Providence 7 RI
 EPCO Electronics 140 Liberty New York NY
 Epeco Products 2500 Atlantic Brooklyn 7 NY
 Eppley Labs 126 Sheffield Ave Newport RI
 Egrad Co 1206 Cherry Toledo 4 Ohio
 Epsco Inc 126 Mass Ave Boston 15 Mass
 Equip & Service 6815 Oriole Dallas 9 Tex
 Equipo Div Aurora Equip Co Aurora Ill
 Eraser Co 1068 S Clinton Syracuse 4 NY
 ERCA Tool Die 19 Ash Brooklyn 22 NY
 Erco Radio Labs Garden City NY
 Erlson Mfg 5029 Euclid Cleveland 3 Ohio
 Erie Resistor Corp 644 W 12 Erie Pa
 President—G R Fryling
 VP—W H Fryling
 VP Gen Mgr—B B Minium
 Treas & Asst Sec—J E Ditleman
 VP Sales—Allen K Shenk
 VP Res & Sng—J D Heible
 Mgr Distributor Sales—R A Elliot
 Mgr Industrial Sls—E S Willis
 Credit Mgr—J Forkus
 Boston IDS—W T Hannigan 43 Leon St Garrison
 70238 Covers Me NH Vt Conn Mass RI
 Camden BOISGV—W H Davis Broadway Stevens Bldg
 300 Broadway Rm 701 Covers Phil S NJ
 Chicago-DS—W J Doyle 333 N Mich Ave Frankln
 2 7100 Covers Ill & Wis
 Chicago-BOISGV—W R Crotty 3204 N Central Ave
 Avenue 3 8411 Covers Ill Mich Wis
 Chicago-BOISGVSE—J T Zuravleff 3204 N Central
 Ave Avenue 3 8411 Covers Ill-Mich Wis
 Cliffside Park BOISGV—M E Dorrin 650 Anderson
 Ave Cliffside 6-7031 covers Metropolitan NY
 Cliffside Park-BOISGV—D N Sawtelle 650 Anderson
 Ave Cliffside 6-7031 covers Metropolitan NY
 Columbus-DS—J W Lehner 367 Brynhild Rd Ludlow
 5260 covers Ohio-W Pa & W Va
 Dallas IDS—J Y Schponmaker 2011 Cedar Springs
 Justin 3335 covers Ark La Okla & Texas
 Denver-IDS—Allen I Williams & Co 124 W 12 St
 MAin 3 0343 covers Colo N M Utah & Wyo
 Detroit DS—Hogerty-Scott Co 10116 Puritan Uni-
 versity 1 4434 covers Mich
 Erie BOISGV—R N Sisson 644 W 12 St Phone 21481
 covers N Ohio Unper NY N W Pa
 Ft Wayne BOISGV—W J Wery 3101 S Broadway
 Harrison 9669 Covers Ind-S Ohio
 Greensboro-IDS—Acheson & Adams Inc PO Box 2158
 Phone 2 6838 covers Ala Fla-Ga Miss N C S C
 Tenn Va
 Indianapolis-DS—E A Schulz 721 Sherwood Dr
 Broadway 1993 covers Ind Ky
 Los Angeles-BOISGV—George H Osborn 1054 Brox-
 ton Ave ARIZONA 97781 covers Ariz-S Calif-Nev
 Los Angeles-DS—R E Osborne 1044 S Parkview
 DUnkirk 81039 Covers S Calif-Ariz
 Merriam Kan-IDS—Koenig Sales 6539 Antioch Ave
 Hedrick 3166 covers Iowa Kan Mo Neb
 Mexico-IDS—Kenneth H Jones Apartado 2250 Rio
 Elba 32-104 covers Mexico
 Newark-DS—Art Cerf & Co 744 Broad St Mitchell
 2 6734 covers N NJ NY
 San Carlos-IDS—David H Ross Co 534 El Camino
 Real LYelll 3 8224 Covers N Calif Nev
 Seattle-IDS—Verner O Jensen 2616 2 Ave Mutual
 2929 covers Idaho-Mont Ore-Wash
 Toronto-IDS—ATR Armstrong Ltd 700 Weston Rd
 MURray 7535 Covers Canada
 Washington-BOISGV—Howard C Roher Borr Bldg
 Executive 3-2113 Covers Wash DC

Continued next page

ALPHABETICAL LISTING of MANUFACTURERS with LOCALIZER INDEX

Erle Resistor Corp (continued)

Wynnewood Pa-DS—L D Lowery Inc 50 E Wynnewood Rd Midway 2-9100 Covers DC-Del-E Pa-Va S NJ-Md

Erwood Inc 1770 W Berneau Chicago 13 Ill
Esc Corp 578 E 161 St New York 56 NY
Esco Mfg Co Box 344 Summit Ill
Espey Mfg 528 E 72 New York 21 NY
Ess Instrument 96 S Washington Bergenfield NJ
Essex Electronics Berkeley Heights NJ
Essex Wire 1601 Wall Ft Wayne 6 Ind
Esterline-Angus PO Box 596 Indianapolis 6 Ind
Estey Co W 6331 Hollywood Blvd Hollywood 28 Calif
Etched Prods 3901 Queens Blvd Long Island City 1 NY
Etraco Mfg Woods Church Rd Flemington NJ
Euclid Electric Madison Ohio
Eureka TV & Tube 69 S Ave Hawthorne NJ
Eureka X-Ray Tube 3250 N Kilpatrick Chicago 41 Ill
Eutectic Welding Alloys 40-40 172 St Flushing NY
Everlast Wire & Cable Haverstraw NY
Executone Inc 415 Lexington New York 17 NY
Extruders Inc 3232 W El Segundo Hawthorne Calif

Factory Enterprises Inc Box 4025 Pittsburgh 1 Pa
Fada Radio & Electric 525 Main St Belleville NJ
Fahnstock Electric 46-44 11 St Long Island City NY
Fairchild Camera & Instrument Corp Potentiometer Div
225 Park Ave Hicksville LI NY
Phone Hicksville 3-4500
Manager—H Erwin Hale
Sls Mgr—Stuart Ederly
Chicago 80—Fairchild Camera & Inst Corp 11 W Washington St Rm 1057
Pasadena 80—Fairchild Camera & Inst Corp 53 W Union Street

Fairchild Engine & Airplane Corp Wyandanch L I N Y
Fairchild Recording Equip Whitestone 57 NY
Fair-Rite Products Co Wallkill NY
Falmer Mfg 312 N Walnut St Youngstown 2 Ohio
Falstrom Co 53 Falstrom Ct Passaic NJ
Falcon Metallurgical 2200 Sheridan Rd N Chicago Ill
Farmer Electric Waban 68 Mass
Farmers Engg Irwin Pa
Farnam Mfg Co P O Box 5098 Asheville N C
Farrand Optical 4401 Bronx Blvd New York 66 NY
Farrelloy Co 1245 N 26 St Phila 21 Pa
Farrington Mfg Co 76 Atherton St Boston Mass
Fast & Co John E 3129 N Crawford Chicago 41 Ill
Fay Co Neal 427 Olive St Santa Barbara Calif
Federal AC Switch Corp 72 Kingsley St Buffalo N Y
Federal Cash Register P O Box 2265 Kansas City Mo
Federal Electric 6446 Santa Monica Los Angeles Calif
Federal Electric Prods 50 Paris Newark 5 NJ
Federal Engg 37 Murray St New York 7 NY
Federal Instrument 14-02 Bdw Long Island City NY
Federal Mfg & Engg 211 Steuben St Brooklyn 5 NY
Federal Products 1144 Eddy Providence RI
Federal Screw Prods 224 W Huron St Chicago 10 Ill
Federal Shock Mount 1077 Intervale Ave Bronx 59 NY
Federal Telecommun Labs 500 Washington Pl Nutley NJ
Federal Telephone & Radio Co Int'l Tel & Tel Corp
100 Kingsland Rd Clifton NJ
President—R S Perry
Vice Pres—G T Scharffenberger
Vice Pres-Apparatus Div—T M Blouglas
Vice Pres-Components Div—S J Powers
Vice Pres & Wks Mgr-Camp Div—W P Maginnis
Vice Pres Dir Purchases—C G Sherwood
Comptroller—R de F Osborne
Treasurer—W E Ogilvie Jr
General Sales Mgr—J A Frabutt
Components Sales Mgr—E W Butler
Government Sales Mgr—J J McDevitt Jr
Sales Mgr PTM & Wire Transm—W D Siddall
Export Sales Mgr—A G Deane
Mgr Mobile Radio Comm Dept—B J Donnelly
Sales Mgr Service Paris—J C Giguere
Mgr R R Industry Sales—T A Benner
Mgr Adv & Sales Promotion—Crump Smith
Selenium Rectifiers—Coaxial Cable
Germanium Diodes

Atlantic City-IDS—Victor W Williams 5 Circle Drive
Margate Atlantic City 2-7859 Covers Maryland-District of Columbia-Delaware (Counties of Kent and Sussex)-Virginia

Boston-DS—Abbott & Husis 1105 Commonwealth Avenue Algonquin 4-8100 and 4-8101 Covers Maine-New Hampshire-Vermont-Massachusetts-Rhode Island-Connecticut (except Counties of Fairfield, New Haven and Middlesex)

Boston-DS—Robert W Gray Inc 572 Washington Street Wellesley 81 Wellesley 5-5296 Covers Connecticut (except Counties of Fairfield, New Haven and Middlesex) Maine-Massachusetts-New Hampshire-Rhode Island Vermont

Buffalo-IDS—R W Mitscher Ellicott Square Building Washington 2517 Covers New York (except Counties of Bronx, Kings, Nassau, New York, Queens, Richmond, Rockland, Westchester, Suffolk)

Chicago-IDS—Leroy W Beier Company 6518 West North Avenue 8E1Kshire 7-2420 Covers Illinois-Wisconsin (South of an East-West Line through La Crosse but not including the City of La Crosse and East of a North-South Line through Ironwood, Michigan)

Dallas-IDS—Campion Sales Company P O Box 4116 Station "A" Randolph 6620 Covers Oklahoma-Arkansas-Louisiana and Texas (except El Paso County)

Denver-IDS—Dick Hyde Company 3250 South Dexter Street Skyline 6-7151 Covers Colorado-Wyoming-Utah-Montana (Eastern half of the State to the boundaries of Hill, Choteau, Judith Basin,

Wheatland, Sweetgrass and Park Counties-Idaho (Southern half of State including the counties of Washington, Gem, Boise, Custer, Clark and Fremont)-New Mexico-Texas (El Paso County)

Detroit-IDS—K C Burcow and Company Suite 207 22128 Grand River Avenue Kenwood 3 7700 Covers Michigan

Indianapolis-IDS—Quinn Cunningham & Associates 6101 College Avenue Glendale 3222 Covers Indiana-Kentucky

Kansas City-IDS—F C Somers 18th and Grand Avenue City Bank Building Jackson 0791 or Grand 1355 Covers Iowa-Nebraska-Missouri-Kansas

Los Angeles-DS—J W Marsh Company 4216 W Jefferson St Republic 2 0145 Covers California-Nevada-Arizona

Los Angeles-IDS—Maydwell and Hartzell Inc 427 West Fifth Street D Cady Dist Mgr Mutual 7245 Covers Arizona-California (Southern half of State including Counties of San Benito, Merced, Monterey, Madera, Mariposa, Fresno, and Inyo)

Memphis-IDS—Cartwright and Bean 1336 Madison Avenue Memphis 2-1914 Covers Alabama-Florida-Georgia-Mississippi-North Carolina-South Carolina-Tennessee

Minneapolis-IDS—H M Richardson* 9 East 22nd Street G Eneva 4078 Covers Minnesota-North Dakota-South Dakota-Wisconsin (the Section North of an East-West Line through LaCrosse including the City of LaCrosse and West to a North-South Line to Ironwood Michigan)

Philadelphia-IDS—J R Benge Technical Representation 25 S Easton Road Suite 200 Glenside Pa Turner 1325 and 1326 Covers Delaware (New Castle County)-New Jersey—Radio Corp of America at Princeton, the City of Phillipsburg, the City of Trenton and Pennsylvania (all the area West to and including the Counties of Tioga, Lycoming, Northumberland, Dauphin, and York)

Philadelphia-IDS—J P Benge Technical Representation 25 South Easton Road Suite 200 Glenside Pa Turner 1325 and 1326 Covers Maryland-District of Columbia and Delaware (counties of Kent and Sussex)

Phoenix-DS—J W Marsh Company 4142 N 18th Street Harry Moore Covers California-Nevada-Arizona

Portland-IDS—Maydwell and Hartzell Inc 1238 N W Glison Street W L Bright Dist Mgr ATwater 4173 Covers Oregon

San Francisco-DS—J W Marsh Company 1258 Fitzgerald Avenue Valencia 4-6714 Covers California-Nevada-Arizona

San Francisco-IDS—Maydwell and Hartzell Inc 158 Eleventh Street F A Mulvany Dist Mgr HEmlock 1-1630 Covers California (Northern half of State to boundaries of Monterey, San Benito, Merced, Mariposa, Madera, Fresno, and Inyo Counties)-Nevada

Seattle-DS—Fred H Haight Company 3212 East Lake Avenue Covers Oregon-Washington-Idaho (Northern half of the State including Counties of Adams, Wallley, Lemhi, Beaverhead, Madison, and Gallatin)-Montana (Western half of State including Counties of Hill, Choteau, Judith Basin, Wheatland, Sweetgrass, and Park)

Seattle-IDS—Maydwell and Hartzell Inc 306 Dexter Avenue E J Reichwein Dist Mgr SEneca 2368 Covers Idaho (Northern half of State including Counties of Adams, Wallley, and Lemhi)-Montana (Western half of the State including Counties of Hill-Choteau-Judith Basin-Wheatland-Sweetgrass, and Park)-Washington

Westfield N J-IDS—H G Richter 467 Hillside Avenue Westfield 2-4651 and Mings Sales 107-37 71st Avenue Forest Hills Long Island New York BOulevard 3-1643 Covers New York City (including Counties of Nassau, Rockland, Westchester, and Suffolk)-New Jersey (except Princeton, Phillipsburg, Trenton and the area South of Trenton)-Connecticut (Counties of Fairfield, New Haven, and Middlesex)

West Richfield Ohio-IDS—Neal Bear Corporation* West Richfield 100 Covers Ohio, West Virginia, Pennsylvania (that portion of the State lying West of but not including the Counties of Tioga, Lycoming, Northumberland, Dauphin, and York)

Germanium Diodes Only

Columbus-IDS—Jack W Lehner 367 Bryhill Road Covers Ohio-West Virginia-Pennsylvania (that portion of the State lying West of but not including the Counties of Tioga, Lycoming, Northumberland, Dauphin, and York)

Dallas-IDS—Delzell Maynard 3409 Oaklawn Ave Justin 2411 Covers Oklahoma-Arkansas-Louisiana-Texas (except El Paso County)

*Selenium Rectifiers and Coaxial Cable Only

Federal Tool Eng'g 1384 Pompton Ave Cedar Grove N J
Federal Tool & Mfg 3600 Ala Ave Minneapolis Minn
Federated Metals 120 Bdw New York 5 NY
Federal Corp 125 Barclay New York 7 NY
Feller Engg 8026 N Monticello Ave Skokie Ill
Felner & Sons Inc P 522 W 45 St New York 36 NY
Folker Mfg 128 Border Torrance Calif
Felsenthal & Sons 4100 W Grand Ave Chicago 51 Ill
Feltors Co 210 South St Boston 11 Mass
Felt Products 1504 Carroll Chicago 7 Ill
Felts Corp Mierodot Div S Pasadena, Calif
Fenton Co 15 Moira St New York 4 NY
Fenwal Inc Pleasant St Ashland Mass

Ferner Co RY 110 Pleasant St Malden 48 Mass
Ferranti Electric 30 Rockefeller Pl New York 20 N
Ferricore Inc 16 School St Yonkers NY
Ferris Instrument 110 Cornelia Boonton NJ
Ferris TV Labs 1057 W Wellington Chicago Ill
Ferro Electric Prods Kirkland Ill
Ferroxcube Corp 233 E Bridge St Saugerties NY
Fidelitone Inc 1616 Devon Chicago 26 Ill
Fidelity Amplifier 703 W Willow Chicago 14 Ill
Fidelity Chem Prods 470 Frelinghuysen Newark 5 NJ
Fidelity Electric Co 332 N Arch St Lancaster Pa
Fidelity Products 2 Lackawanna Pl S Orange NJ
Field Electrical Instr B M Manheim Blvd New Paltz
Field Instruments 2920 N 4 St Phila 33 Pa
Film Capacitors 3400 Park Ave New York 56 NY
Filters Inc 30 Sagamore Hill Dr Pt Washington N Y
Filltron Co 131-15 Fowler Ave Flushing L I N Y
Fink Electronics 518 E 95th St Chicago 19 Ill
Finn & Co T R 333 Jackson Bronx 54 NY
Finney Co 4612 St Clair Ave Cleveland 3 Ohio
Fischer & Co R A 525 Commercial Glendale 3 Calif
Fischer & Porter Hatboro Pa
Fisher Co Oscar 1000 N Division St Peekskill N Y
Fisher Radio Corp 21-21 44th Dr Long Island City N Y
Fisher Research 1961 University Palo Alto Calif
Fish-Schurman 70 Portman New Rochelle NY
Five Star Co Plantsville Conn
Flader Inc Fredric 583 Division N Tonawanda NY
Flatto Mgt 70 W 40 St New York 18 NY
Flott Lab 3711 Marshall Rd Drexel Hill Pa
Flexaust Co 100 Park Ave New York 17 N Y
Flexible Taping Guilford Conn
Flexonics Corp 1315 S 3 Ave Maywood Ill
Flexrock Co 3609 Filbert St Philadelphia 1 Pa
Flight Research PO Box 1-F Richmond Va
Flippen Mfg 132 S Main Orange Calif
Flock Process 26 Fahey St Springdale Conn
Fluko Mfg John 1111 W Nickerson St Seattle 99 Wash
Flush Wall Radio 1012 Cleveland Clearwater Fla
F & M Sales 1054 Cahagna Blvd Hollywood 38 Calif
Fonotalk Corp 11 S LaSalle Chicago Ill
Forbes & Wagner 339 Central Silver Creek NY
Ford Engg 129 E A St Upland Calif
Fordham Mfg 2220 Pearsall New York 69 NY
Ford Instrument 31-10 Thomson Long Island City 1 N Y
Ford Radio & Mica 536 63 St Brooklyn 20 NY
Foredom Electric 27 Park Pl New York 7 NY
Forest Electric 7216 Circle Ave Forest Park Ill
Forman Co B G 238 William New York 38 NY
Formatic Co 178 Bridge St Naugatuck Conn
Formica Co 110 K St S Boston 27 Mass
Formica Co 4644 Spring Grove Cincinnati 32 Ohio
Forsberg Mfg Co 125 Seaview Ave Bridgeport 1 Conn
Forter-Teichmann Clark 81d Pittsburgh Pa
Forty-Niner Co 5245 Grand River Detroit 8 Mich
Foster Transformer 3820 Colerain Ave Cincinnati 23 O
Fostoria Pressed Steel Fostoria Ohio
Foxboro Co., 38 Neponset Foxboro Mass
France Mfg Co 10325 Berea Rd Cleveland 2 Ohio
Franeon Mfg 161 Washington New York NY
Frankel Connector 27 Vestry St New York NY
Franklin Control 1975 S Allis Milwaukee 7 Wisc
Franklin Electronics 415 W Pike St Philadelphia Pa
Franklin Fibro-Lamitex Wilmington Del
Franklin TV Labs 18 Johnson Brooklyn 6 NY
Fraser Devel Lab Box 73 Huntington Station NY
Frazier Engg 1965 Peck Mustang Mich
Freed Electronics 200 Hudson New York 13 NY
Freed Transformer 1718 Weirfield Brooklyn 27 NY
Freeland Products 700 Dryades New Orleans 12 La
Froepport Sulphur Port Sulphur La
Freeway Washer & Stamping PO Box 1756 Cleveland 5 O
Frenchtown Porcelain 8th & Harrison Frenchtown NJ
Frequency Standards PO Box 504 Ashby Park NY
Fretco Inc 406 N Craig St Pittsburgh 13 Pa
President—Joseph V Fisher
Vice Pres—Frank H Robinson
Products: Antennas—TV installation accessories—open wire lead-in—ground wire—masts—mounts—tubing
Brand Names: Fretray—Fretline—Souerline—M Tee-Ray—Screwball—Strat-O-Ray—Bo-Ti
Representatives:
Calif—Nickerson & Rudat 381 Brannon St San Francisco Territory: San Francisco & Sacramento Calif
Calif—R E Osborne 1044 S Parkview Los Angeles Territory: 5 Calif
Missouri—Honk J Jobe Jr., 1287 W 71 Ter Kansas City Territory: Kansas Mo—Neb—Colo—low (South of Des Moines, including Des Moines)—Cheyenne & Casper Wyoming
Ohio—Edward T Conrad 516 38th St N W Canton Territory: All states except those covered by mfrs reps
Ohio—Don Roudebush 2729 S Union Ave Alliance Territory: S W Ill—S Ind—Ky—W Va—S O Pa—Anton C Fischer 803 Highway Road Pittsburg Territory: N Ind—Central Ill (except Chicago)—N Ohio—Mich—N W Pa (including Erie, Sharon)—New York (except Metropolitan Area) Pa—Dove Hall Webster Hall Hotel Pittsburgh Territory: Ala-Fla-N C-S C-Danville & Bristol Va Miss-Tenn-Hopkinsville Ky
Po—Herman Lewis 1622 68th Avenue Philadelphia Pa Territory: Del—Md—N J—E Pa
Texas—Don Ryser 2022 Chippendale Road Houston Territory: Texas (except El Paso), La—Oklahoma—Ark
Wash—M K Widdelkind 216 1st Ave N Seattle Territory: Idaho—Montana—Oregon—Washington

Friez Instrument Div Bendix Aviation Baltimore 4 Md
F-R Machine Works 44-14 Astoria Blvd LI City NY
Frost & Co L H 44 Ionia S W Grand Rapids 2 Mich
Frychey M P PO Box 28 Hackensack NJ
Frying Mfg Co 639 W 12 St Erie Pa
Fugle-Miller Labs 398 Main St Metuchen NJ
Fulton-Syphon Div Robertshaw-Fulton Knoxville 4 Tenn
Furnas Electric Co 1000 McKee St Batavia Ill
Furst Electronics 3322 W Lawrence Chicago 25 Ill
Fusite Corp 6000 Fernview Cincinnati 13 Ohio
Gables Engg 247 Greco Coral Gables Fla
Gabriel Electronics Div Gabriel Co Norwood Mass
Gadgets Inc 3629 N Dixie Dr Dayton 5 Ohio
Gardner Radio 3612 Maple Los Angeles 11 Calif
Galbraith & Son 450 6 Ave New York 11 NY
Galetronics Inc Pasadena Calif
Gallerup D W 5437 N Santa Monica Milwaukee Wis
Galvanic Prods 110 E Hawthorne Valley Stream NY
Gamewell Co Newton Upper Falls 64 Mass
Ganz Co W J 40 E 49 St New York 17 N Y
Gardo Mfg 588 Eddy Providence 3 RI

D B Buchanan 5130 Powers Ferry Road NW Atlanta Georgia
George L Herrick Co 15326 Lorain Avenue Cleveland Ohio
Willard Spencer 20158 Sonto Rosa Drive Detroit 21 Mich
Perlmuth-Colman & Associates 2419 South Grand Avenue Los Angeles 7 California
David G Quinlan 4700 Frankford Avenue Philadelphia Pennsylvania
George Sheffer Company P O Box 1587 Phoenix Arizona
Arthur J Ellis Company 1607 Howard Street Chicago 26 Illinois
Richard H Foulkner 896 Woodbine Drive Webster Groves 19 Missouri
Anthony P Mascoli 81 Irving Avenue Brooklyn New York
Arthur F Schultz 96 Oxford Road New Hartford New York
Henry P Segel Company 131 Newbury Street Boston 16 Massachusetts
Consolidated Manufacturers and Distributors 1156 Yonge Street Toronto Canada

Gardner Electric Emeryville 8 Calif
Gardner Lab Henry A Bethesda 14 Md
Garlock Packing 402 E Main Palmyra NY
Gard Radio 70 Washington Brooklyn 1 NY
Garrard Sales Corp 164 Duane St New York 13 NY
Garrett Co G K D & Tloga Sts Phila Pa
Gasket Engg 2444 Charlotte Kansas City Mo
Gaston Power Tools 14829 Loomis St Harvey Ill
Gates & Co G W Franklin Sq L I NY
Gates Electric Co 65 W Broadway New York N Y
Gates Radio 123 Hampshire Quincy Ill
Gatti Inc Aurele M 524 E Wash St Trenton NJ
Gavitt Mfg Brookfield Mass
Gear Specialties 2635 W Medill Chicago 47 Ill
Gee-Lar Mfg 819 Elm Rockford Ill
Gelb Co 1757 N Central Ph Chicago Ill
Gent Aniline & Film Johnson City NY
Gent Armature & Mfg PO Box 370 Lock Haven Pa
Gent Cable Corp 420 Lexington New York 17 NY
Gent Cement Mfg 919 Taylor Rockford Ill
Gent Ceramics & Steatite Keasbey NJ
General Communication 681 Beacon St Boston 15 Mass
General Communications Inc 169 Ft Atkinson Wis
Gent Control 801 Allen Glendale Calif
Gent Control 1200 Soldiers Field Rd Boston 34 Mass
General Crystal Co P O Box 9 Burlington Wis
General Devices P O Box 253 Princeton N J
Gent Dry Batteries 13000 Athens Cleveland 7 Ohio
Gent Elec Co Con Mat Div 1285 Boston Bridgeport 2 Conn
Gent Electric Chemical Div Pittsfield Mass
Gent Electric 11177 E 8 Mile Rd Detroit 32 Mich
Gent Electric Apparatus Div 1 River Rd Schenectady NY
Gent Electric Co Tube Div 1 River Rd Schenectady NY
Gent Elec Co Electronics Park Syracuse NY

Broadcast Equipment Div:
Complete Monochrome and Color Equipment for UHF and VHF Television
Manager-Sales—Albert F Wild
Atlanta—T F Bost Jr-J M Comer Jr-R F Lauterbach
300 Red Rock Building Cypress 2581
Boston—J H Painter 963 Commonwealth Ave Hubbard 2 1800
Chicago—G E Webster 1122 Merchandise Mart Whitehall 4-3915
Cincinnati—John Wall 215 W Third St MAIn 5022
Cleveland—G F Oberender 710 Williamson Building Superior 1-6822
Dallas—J H Douglas 3200 Maple Avenue Prospect 4296
Houston—H W Granberry 1100 E Holcombe Blvd Justin 0657
Los Angeles—F R Walker 3460 Wilshire Blvd Rm 618 DUnkirk 5-2391
New York—M M Heortig 570 Lexington Avenue Plaza 1-1311
Philadelphia—J W I Cody 1405 Locust St PENNY-pancker 5-9000
San Francisco—C T Hoist 235 Montgomery St Douglas 2-3740
St Louis—W R Chapin 4227 Lindell Blvd Jefferson 5-8873
Syracuse—W G Broughton Onondaga County Savings Bank Bldg 2-3308
Washington D C—L F Page 777 14th Street NW Executive 3-3620
Broadcast Field Service
Syracuse—Roy Duncan 920 Erie Blvd East 2-9121
Night phone 2-2163

General Electric Communication Equipment
Electronics Park Syracuse NY—2-Way Radio-Carrier Current-Microwave Equipment
Mgr of Sls—L Robert Sheeley
Atlanta—J W Bryant Reg Mgr 404 Henry Grady OF Bldg 26 Cain St Alpine 5811
Chicago—G P Foster Reg Mgr 1122 Merchandise Mart Plaza Whitehall 4-3915
Dallas—J W Rondel Reg Mgr 3200 Maple Ave Prospect 4296
Detroit—G F Reed Reg Mgr 2512 Book Tower Bldg Woodward 3-3601
New York—J T Harrington Reg Mgr 570 Lexington Ave Plaza 1-1311
San Francisco—M Ellis Reg Mgr 235 Montgomery St Douglas 2-3740
General Electric Germanium Products
Complete line of Germanium Diodes Rectifiers-Tron
Manager-Marketing—J H Sweeney
Manager-Sales—R H Rudolph
District Sales Managers
Clifton New Jersey—200 Main Avenue J B Jolly
New England States—L Emmel Metropolitan
New York Area—C J Goodman Atlantic Coast States
Chicago Illinois—3800 North Milwaukee Avenue A C Oeinc-East Central District H F Hodson
Central District V J Hutton-West Central District
Los Angeles—11840 West Olympic Boulevard W O Hooverman Western District

General Electric Industrial Electronics
Building 1 Room 6 Syracuse 76-4411
1. MEASURING EQUIPMENT—Oscilloscopes, Power Supplies, and all equipment for quality Industrial, Laboratory, and TV Receiver Testing R P White Est 2301
2. INDUSTRIAL TELEVISION—Complete line of color cameras, large color projectors and associated closed-circuit color television equipment for all industrial, hospital and related applications R S Yeandle Est 772

Genl Electric Co Lamp Div Nela Ph Cleveland 12 Ohio
Genl Electric Co 95 Hathaway St Providence 7 RI
Genl Electronics 101 Hazel St Paterson NJ
Genl Electronics 32 W 22 St New York 10 NY
Genl Fese 7 Roberts St S River NJ
Genl Hermetic Sealing Valley Stream L I NY
Genl Industries Co Elyria Ohio
Genl Instrument 829 Newark Elizabeth 3 NJ
Genl Insulated Wire 69 Gordon Providence RI
Genl Laminated Prods 2857 S Halsted St Chicago 8 Ill
Genl Magnetic 10001 Erwin Detroit 34 Mich
Genl Magnetics 135 Bloomfield Bloomfield NJ
Genl Photo Prods 15 Summit Ave Chatham NJ
General Plastics Corp 165 3rd Ave Paterson N J
Genl Plate Div Metals & Controls Attleboro Mass
Genl Precision Lab 63 Bedford Pleasantville NY

President—H G Place
Vice Pres & Managing Director—R L Garman
Vice Pres & Eng Products Mgr—J W Murray
Vice Pres & Mgr Com'l Mfg—Blair Foulds
Chief R & D Eng—F N Gillette
Mgr Gov't Sls—W C Cooper
Mgr Com Prod—A C Haemen
Mgr TV Dept—Arthur Hungerford
Mar Expt Sls—R Rocke 13 40 St N Y
Pleasantville NY—N M Marshall Eastern Regional Manager
Atlanta Ga—992 Peachtree St NW—E J Manzo
Southeastern Regional Manager
Chicago Ill—188 W Randolph St R H Johnston
Midwestern Regional Manager
Dallas Texas—4212 So Buckner Blvd W M Whitty
Southwestern Regional Manager
Glendale Calif—1607 Flower St J M Cunningham
Western Regional Manager

Genl Products Union Springs N Y
Genl Radio Co 275 Mass Ave Cambridge 39 Mass
Chairman of Board—H J Richmond
President—E H Locke
Chief Engr—D B Sinclair
V P Manufacturing—C C Corey
V P Sls—F L Tucker
V P Sls—A E Thiessen
Sales Mgr—M T Smith
Publicity Dir—C E Worthen
Advs Mgr—J M Clouton
Service Mgr—H H Dowes
Dir of Purchases—C E Kelly
Chicago—BO—K A Adams & W M Ihde 920 S Michigan Ave WAhnh 2-3820 Covers Ohio Ind Mich Ill Wis Iowa Minn Mo
Los Angeles—BO—F Ireland & J G Hussey 1000 N Seward St HOLlywood 9-6701 Covers Cal Ore Wash Ariz N Mex Nev
New England—BO—R B Richmond 275 Massachusetts Ave Cambridge Mass TRObridge 6-4400 Covers New England except Conn & NY
New York—BO—W R Thurston & G C Ross 90 West St WOrth 4-2722 Covers Greater NY Incl West Chester Co & L I Conn NJ Penn Del

Genl Railway Signal 801 West Ave Rochester 2 NY
Genl R-F Fittings 702 Beacon Boston Mass
General Riveters Elmwood & Hertel Buffalo 7 N Y
General Test Equip Co 38 Argyle Ph Buffalo 22 N Y
Genl Tire & Rubber Washburn Ind
Genl Transformer 18240 S Harwood Homewood Ill
Genlsoo Inc 2233 Federal Los Angeles 64 Calif
Generator Corp Manassas Va
George Co P D 5200 N 2 St St Louis Mo
Geotechnical Corp 3712 Haggard Dr Dallas 9 Texas
Geotronic Labs 1314 C-4th Mill Ave Dallas 11 Tex
Gerbor Scientific 162 State Hartford Conn
Gerret Corp M A 724 W Wabash St Milwaukee 5 Wis
Gerling Products N 7 & Monroe Ave Kentworth NJ
Gerlyng Eng'g Co 2151 N Damen Ave Chicago 47 Ill
Germanium Products 26 Connelton Jersey City NJ

Gortsch Products 11846 Miss Ave Los Angeles 25 Calif
G & M Wood Prods 75 N 11 St Brooklyn 11 NY
Glennini & Co G M Pasadena 1 Calif
Gilmora Industries 5713 Euclid Ave Cleveland 3 Ohio
Glass Fibers 1810 Madison Toledo 2 Ohio
Gibbs Mfg Co 450 N Main Janesville Wis
Gibson Electric 8350 Franklin Pittsburgh 21 Pa
Gillian Bros 1815 Vanhook Blvd Los Angeles Calif
Gilman Electronics Capetone Calif
Girard-Hopkins 1000 40 Ave Oakland 1 Calif
Girdler Corp 224 E Bdry Louisville 1 Ky
Gisholt Machine 1245 E Wash Ave Madison 3 Wis
Gits Molding 4600 W Haron Chicago 44 Ill
Glaser Lead Co 31 Weyhoff Ave Brooklyn NY
Glass & Bro 10 Van Cortlandt Ave E New York N Y
Glass Eng'g Labs 601 O'Neill Ave Belmont Calif
Glass Fibers 1810 Madison Ave Toledo 2 Ohio
Glass Prods Co 6911 S Chicago Ave Chicago 37 Ill
Glass Solder Eng'g 300 N Lake Ave Pasadena 4 Calif
Glasser-Steers 2 Main St Belleville NJ
Glastic Corp 1823 E 40 St Cleveland 3 Ohio
Gleason-Avery 45 Aerolius Ave Auburn NY
Glenco Corp Metuchen NJ
Glen Falls Lab Glen Falls NY
Globe Div Carborandum Niagara Falls NY
Globe Industries 1784 Stanley Ave Dayton 4 Ohio
Globe Phone Mfg Co 2 Linden St Reading Mass
Glyco Products 26 Court Brooklyn 2 NY
G & M Equip Co 7315 Varna Ave Los Angeles Calif
G-M Labs 4300 N Knox Chicago 41 Ill
Goat Co Fred 308 Dean St Brooklyn 17 NY
Godfrey Mfg 2642 S Michigan Chicago 16 Ill
Goldo Mfg Co 4888 N Clark St Chicago 40 Ill
Goldsmith Bros 111 N Wabash Chicago 2 Ill
Gombas Co John 103 Montgomery Irvington NJ
Gonset Co B01 S Main Burbank Calif
Good-All Electric Oqualla Neb
Good Inc Don 1014 Fair Oaks S Pasadena Calif
Goodrich Chem B F 324 Rose Bldg Cleveland 15 Ohio
Goodyear Aircraft Akron 16 Ohio
Goodyear Tire & Rubber Chemical Div Akron Ohio
Gordon Co Clard S 3000 S Wallace St Chicago 16 Ill
Gordon Specialties 59 E Madison Chicago 3 Ill
Gorn Electric Co 845 Main St Stamford Conn
Gorrell & Gorrell Haworth NJ
Gorson Elec Mfg 540 39 St Union City NJ
Gostin Electric 2921 W Olive Burbank Calif
Gotham Audio Devel 2 W 46 St New York 36 N Y
Gotham Instrument Sellersville Pa
Gotham TV Corp 123 W 64th St New York 23 N Y
Gothard Mfg 2110 Clear Lake Springfield Ill
Gould Corp J F 1562 DeKalb Ave Brooklyn 37 N Y
Gow-Mac Instrument Co 100 Kings Rd Madison N J
Graef R F 780 West End Ave New York 25 N Y
Grafo Colloids Sharon Pa
Graham Mfg 47 Bridge St E Greenwich RI
Graham Transmissions Inc Menomonee Falls Wis
Gramer Transformer 2734 N Palaski Chicago 39 Ill
Granco Prods 36-17 20 Ave Long Island City 5 NY
Grant Palley & Hdw 31-85 Whitestone Flushing 54 NY
Graphite Metallizing 1015 Nepperhan Yonkers NY
Grason-Stadler Co 106 Hampshire St Cambridge 39 Mass
Grass Instrument 101 Old Colony Ave Quincy Mass
Gravelly Novelty Furn Ridgeway Va
Graybar Electric Co 420 Lexington Ave New York 17 NY
Grayhill 561 Hillerose Ave La Grange Ill
Gray Instrument 64 W Johnson St Philadelphia Pa
Grayling Eng'g Co 12243 Ave "B" Chicago 33 Ill
Gray-O'Reilly 480 Lexington Ave New York 17 NY
Gray Radio 501 Forest Hill W Palm Beach Fla
Gray Research & Devel 658 Hilliard Manchester Conn
Great Lakes Electric 17 S Desplaines St Chicago 6 Ill
Green Electric W 130 Cedar New York 6 NY
Greenleaf Mfg 7814 Maplewood Ind Ct St Louis Mo
Green Instrument 396 Putnam Cambridge 39 Mass
Greene Co L Charlton 314 Washington Newton 58 Mass
Greenlee Tool 2136 12 St Rockford Ill
Greibach Instruments 212 Durham Ave Metuchen NJ
Gremar Mfg Co Wright St Lynn Mass
Greibach Research 80 Pryer Terr New Rochelle NY
Gries Reproducer Corp 5 2nd St New Rochelle N Y
Grieve-Hendry 1815 W Lake Chicago 12 Ill
Griesby-Allison Arlington Heights Ill
Griffin Co John 2157 James St Paul 5 Minn
Grinnell Industrial Grinnell Iowa
Grissold Machine 412 Main Pt Jefferson NY
Groov-Plm Corp 1125 Hendricks Caseway Ridgefield NJ
Guardian Electric Mfg 1621 W Walnut Chicago 12 Ill

Telephone: Chesapeake 3 1100
President—F F Rowell Jr
Vice Pres Sales—J J Rowell
Treasurer—G G Rowell
Purch Agent—W A Rowell
Comptroller—F A Chandler
Dir of Engr—T J Obzorny
California, Glendale 4—Ray Renz 207 S Orange St Citrus 4 3214
California, San Francisco 2—Lagan Sales 530 Gough St HEmlock 1 5127
Connecticut, Bridgeport 3—Harrison Reynolds Assoc 211 State St 5 9634
Florida, Tampa—Stanley K Wallace Assoc 207 W Alfred St Tampa 24 4221
Georgia, Atlanta—Stanley K Wallace Assoc 2151 Beecher Rd S W Raymond 8463
Illinois, Chicago 12—Guardian Elec Mfg Co 1621 W Walnut St CHesapeake 3-1100
Massachusetts, Newton 58—Harrison Reynolds Assoc 313 Washington St DEcatur 2-4620
Michigan, Detroit—Guardian Elec Sales Ofc 600 Michigan Bldg Woodward 3-1913
Minnesota, St Paul—J I Aaron & Assoc 1951 University Ave Midway 0027
Missouri, Kansas City 2—W E Fry 406 West 34th St Jefferson 5236
New York, New York 11—Guardian Elec Sales Ofc 160 Fifth Ave CHelsea 2-9063
New York, Rochester 4—Giselson-Slocum Company 82 St Paul St Locust 8323

Continued next page

ALPHABETICAL LISTING of MANUFACTURERS with LOCALIZER INDEX

Guardian Electric Mfg (continued)

North Carolina, Charlotte—Stanley K Wallace Assoc
526 Belton St Charlotte 5-5188
Ohio Cleveland—Guardian Elec Sales Ofc 603 Cax-
ton Bldg Superior 1-8644
Pennsylvania, Pittsburgh 18—Burke Elec Equip Co
416 Maple Ave PENHURST 1-5357
Pennsylvania, Philadelphia 24—Guardian Elec Sales
Ofc 2158 Friendship St DEVONSHIRE 2-1389
Tennessee, Donelson—Stanley K Wallace Assoc 123
Overhill Dr 567 M
Texas, Dallas 1—J F McKinney Sales Co 1330 N
Industrial Blvd Sterling 1997
Utah, Salt Lake City 1—Franklin Y Gates Co 200
South Main St 9-1101
Washington, Seattle 1—Lloyd Marsh Agencies 2601
1st Ave Main 8762
Wisconsin, Milwaukee 2—1 Aaron Assoc 829 N
Marshall St BRADWAY 6-8515
Canada, Toronto 12, Ontario—A C Simmonds &
Sons Ltd 100 Merton St Mayfair 9111
Export—Sylvan Ginsbury 8 West 40th Street New
York 18 N Y PENNSYLVANIA 6-8239
Geobrad Bros 225 W 34 St New York 1 NY
Geodman Co 9200 Exposition Blvd Los Angeles Calif
Geodman Co 340 W Huron Chicago 10 Ill
Phone Delaware 7-7400

Products
Main Plant—Chicago 10—340 W Huron St Capacit-
ors Fixed paper dielectric plastic film dielec-
tric metallized paper Filters Low pass high pass
band pass noise suppression
Chelsea Mich—20401 U S 17 W Capacitors Dry
electrolytic ceramic capacitors
Sunnyvale Calif—102 N Sunnyvale Ave Capacitors-
Paper
Los Angeles Calif—9200 Exposition Blvd Pulse
Transformers-Delay Lines

Representatives
Upper New England States—Cambridge Mass—
Halliday & Hathaway Inc 238 Main St Elliot
4-1751
Lower New England States—Canaan Conn—Halli-
day & Hathaway Inc Box 797 Taylor 4-7215
North & South Carolina & Bristol Tenn—Charlotte
NC—Glenn & Larson 123 Brevard Court Phone
4-3994
Chicago Area—Chicago Ill—Bauman & Bluzat 2753
W North Ave Humboldt 6-6809
Los Angeles Area—El Monte Calif—Ash M Wood
Co Box 150 CUMBERLAND 3-1201
Indiana Area—Indianapolis—Joe Murphy 2505 E
39 St CHERRY 9197
Mo Iowa Kansas Kansas City Mo—W E Fry & Co
510 Porter Bldg 406 W 34 St JEFFERSON 5236
Philadelphia Area—Narberth Pa—Massey Assoc
529 Brookhurst Ave MOHAWK 4-4200
Wash Area—Washington DC—Massey Assoc 1
Thomas Circle NATIONAL 8-1957
Metropolitan N Y—New York 19—Ed Glass Assoc
1775 Broadway JUDSON 6-8440
New York State—Rochester—James I Semple 1795
Monroe Ave HILLSIDE 3934
Carlton Mfg 212 Durham Metuchen NJ
Cordlach Mfg Co Fairport NY
Curley W & L R 514 Fulton Troy NY
Custafson Mfg Co D 5328 N Kedzie Chicago 25 Ill
Cuth Co E F 2615 Wash Blvd St Louis 3 Mo
Cuthman & Co E I 15 S Throop Chicago 7 Ill
G-V Controls 28 Hollywood Plaza E Orange NJ
Pies & Treats—C D Geer
Chf Engr—W C Braekhusen
Prod Mgr—H I Weinberg
Sales Engr—G A Complan
Off Mgr—O R Denecke
Baltimore R—L G White & Co 516 Rossiter Av
BELMONT 5-5351
Camden R—James W Wyatt 312 Cooper St EMER-
SON 5-4533
Chicago R—Kelburn Engineering Co 600 W Jackson
Blvd DEARBORN 2-2828
Kansas City Mo R—Harris Hanson Co 7916 Puseo
Ave HILAND 6744
Los Angeles R—M A Stolaroff Co 4614 Northridge
Dr AKMINSTER 3-6717
Orange NJ R—John W Richardt Co ORANGE 6-7719
Rochester NY R—David R Peet 146 University Ave
HAMILTON 8910
St Louis R—Harris Hanson Co 5506 S Kingshighway
SWEETBRIAR 1344
Seattle R—Burt C Porter Co 4310 Roosevelt Way
METROSE 4829
Silver Springs Md R—L G White & Co 8641 Coles
ville Road JUMPER 8-2808
Winston-Salem NC R—L G White & Co PO Box
2354
G W Astne PO Box 2263 El Segundo Calif
Gyromechanisms Inc Malesite L I N Y
Hackensack Cable 110 Orchard Hackensack NJ
Hadley Co R M 5112 S Hoover St Los Angeles Calif
Haff & Sons 950 Kent Brooklyn 5 NY
Haley Electronics 57 William New York NY
Hall Inc F Summer Amityville N Y
Halliderson Transformer 4500 Ravenswood Chicago 40 Ill
Hallen Corp 3503 W Olive Burbank Calif
Haller Raymond & Brown State College Pa
Hallitt Mfg 1601 W Florence Inglewood Calif
Hallcrafters Co 4401 W 5 Ave Chicago Ill
Hall Mfg 3901 Wesley Terr Schiller Park Ill

Halowax Prods Div Union Carbide 30 E 42 St New York
Hamilton Electronics 2726 Pratt Chicago 45 Ill
Hamilton Glass 2750 W Grand Ave Chicago 12 Ill
Hamilton-Hall Mfg 227 Water St Milwaukee 2 Wis
Hamilton Kent Mfg Co Kent Ohio
Hammarland Mfg 460 W 34 New York 1 N Y
Hamlyn Electronics 32 Holman Blvd Hicksville N Y
Handy & Harman 82 Fulton New York 38 N Y
Manover Devel 401 E 74 New York 21 N Y
Manovia Chemical 233 N J RR Ave Newark N J
Mansell Inc U 50 Liberty Westerly R I
Hansen Co Wm 165 Silverbrook Niles Mich
Hansen Mfg 1934 Virgil Blvd Princeton Ind
Hanson-Gorrell-Brian 1 Continental Hill Glen Cove NY
Harder Co Donald C 3338 India San Diego 1 Calif
Hardman Co H V 571 Cortlandt St Belleville 9 N J
Hardwick Hindle 40 Hermon Newark 5 N J
Harmon Electronics Independence Mo
Harnett Electric 138 Haven Pt Washington N Y
Harper Co M M 8200 Lehigh Morton Grove Ill
Harper Electric Furnace 39 River Buffalo 2 N Y
Harrison Mfg 1446 N St Louis Chicago 51 Ill
Hart Mfg 110 Bartholomew Hartford Conn
Hart Moisture Gage 126 Liberty St New York 6 N Y
Hartford City Paper Hartford City Ind
Hartman Eng'g Co 182 Oakland St Springfield 8 Mass
Hartley & Co H A 521 E 162 St Bronx 5 N Y
Harvey Radio Labs 447 Concord Cambridge 38 Mass
Harvey-Wells Electronics Southbridge Mass
Harwood Mfg 466 W Superior Chicago 10 Ill
Harworth Service 409 El Camino Real Menlo Park Calif
Hastall Inc John P O Box 2240 Westbury L I N Y
Hastings Instrument Hampton Va
Hathaway Instrument 1315 S Clarkson Denver 10 Colo
Hatheway Mfg 1500 RR Ave Bridgeport Conn
Hawley-Lord 61 W 56 St New York N Y
Hawley Products 333 N & 6 St St Charles Ill
Hayden Mfg 173 N Peoria Chicago 7 Ill
Haydon Co A W 232 N Elm Waterbury Conn
Haydon Mfg Torrington Conn
Haydon Products 1801 S Ave Brooklyn N Y
Haydon Switch 232 North Elm St Waterbury Conn
Hayda Bros Plainfield N J
Haygen Electronic 436 18 St Brooklyn 15 N Y
Haynes Labs C W 69 Chandler Springfield 4 Mass
Hays Corp E 8 St Michigan City Ind
Hays Mfg Co 12th & Liberty St Erie 6 Pa
Hazard Insulated Wire Wilkes Barre Pa
Hazelline Electronics Little Neck L I N Y
HD Electric Co 760 Osterman Ave Deerfield Ill
Healy-Ruff Co 772 Hampden St Paul 14 Minn
Heath Co Benton Harbor 24 Mich
Hedco Mfg 161 W Huron Chicago 10 Ill
Hedin Tele Tech 640 W Mt Pleasant Livingston N J
Heiland Research 130 E 5 Denver 9 Colo
Heinemann Electric Penn & Plum Trenton 2 N J
Heinze Electric 685 Lawrence St Lowell Mass
Heider Mfg Corp 238 Lewis St Paterson N J
Hell-Coil Corp Danbury Conn
Helipot Corp 916 S Meridian S Pasadena Calif
Heiko Products 243 W 55 St New York 19 N Y
Helwig Co 2544 N 30 St Milwaukee 10 Wis
Hemlinway & Bartlett 500 S Ave New York N Y
Hempel-Claus Co Fremont Ohio
Henry & Miller Industries 424 W 33 New York 1 N Y
Henry Valve Co 3215 North Ave Melrose Park Ill
Hepner Mfg Co Round Lake Ill
President—F A Heppner
Treas—Noel D Baird
Factory Mgr—J O Mojo
Sls Mgr—R F Cuny
Dir of Engineering—Myron Heppner
Purchasing Agt—Inaer Johnson
Collingswood NJ-SE—James C Mugglesworth 506
Richey Ave W Phone 5-3515
Fort Wayne Ind-SE—Ralph Hoffer RRI US 27 Cold
water Rd EASTBROOK 7778
Los Angeles SE—Irv M Cochrane Co 408 S Alvarado
St DUNKIRK 5-1715
New York SE—John J Kopple 60 E 42 St MURRAY
Hill 2-1118
Hercules Elec Mach 1442 E Wash Los Angeles 21 Calif
Hercules Powder 900 Market Wilmington 99 Dela
Herlee Corp 6 & Beech St Grafton Wis
Hermaseal Co 1101 Lafayette Elkhart Ind
Hermes Plastics 13 University Pl New York 3 N Y
Hermelle Seal Products 29 S 6 Newark 7 N J
Hermelitte Corp 702 Beacon Boston 15 Mass
Hertner Electric 12690 Elmwood Cleveland 11 Ohio
Herzog Min Lamp 12-23 Jackson Long Island City N Y
Hetherington Inc Sharon N H Pa
Hevl Duty Electric 4212 W Highland Milwaukee 1 Wis
Hewlett-Packard 395 Page Mill Palo Alto Calif
Hexacon Electric 157 W Clay Roselle Park N J
Heyer Products 471 Cortlandt Belleville 9 N J
Heyman Mfg 600 Michigan Kenilworth N J
H & W Prods Box 2333 Terminal Annex Los Angeles Calif
Hickoh Electrical Inst 10514 Dupont Cleveland 8 Ohio
Atlanta-Il—Hollingsworth & Still 407 Whitehead
Building MAIN 5878 covers Southeastern terr
Boston-Il—Cookley Sales Ofc 148 Needham St
Newton Highlands Boston 61 Moss DECATUR 2
4800 covers New England
Buffalo-Il—R W Mitscher 487 Ellicott Sq Bldg
WASHINGTON 2517 covers NY State
Chicago-Il—L C McCarthy 5933 Addison St KILDARE
5-7976 covers Chi Terr
Cleveland-Il—J M Landfear Co J M Landfear 2138
Lee Rd FAIRMOUNT 1-4533 covers: Ohio, W Va-
W Pa
Dallas-Il—J Earl Smith 505 N Evoy St RA 2966
covers Southwest terr
Detroit-Il—George Kangas 18427 Woodbine KEN-
WOOD 3-8620 covers Mich-Ind-Ky

Greeley Colo-Il—Gordon G Moss PO Box 428 1530
13 Ave Tel: 770 covers Rocky Mt Terr
Havertown Pa-Il—John T Stinson 219 Sagamore Rd
Hilltop 7-0922 covers Middle AN. Terr
Kansas City-Il—Terwilliger Sls Co 9304 High Drive
Kansas City 13 FELLOWS 6122 Covers Midwest
territory
Minneapolis-Il—Nick J Laub Co 4710 Quail Ave
North Orchard 7-7000 covers N W Terr
New Orleans-Il—Earl K Moore Co 4108 Clermont
Dr CRESCENT 4182 covers Miss Terr
New York-Il—Kenneth E Hughes Co 4808 Ber-
genline Ave Union City NJ UNION 7-3704 covers
N Y City Industrial
River Edge NJ-Il—George Ksander 309 Von Saun
Dr Diamond 2-4168 covers NY City Jobber
San Francisco-Il—Arthur A Barricks 615 Belvedere
St MONTROSE 4-7857 covers W Coast & Pacific
Northwest
High Vacuum Equip 349 Lincoln St Hingham Mass
Highland Egg Malt & Urban Westbury N Y
High Speed Hammer 313 Norton Rochester N Y
High Voltage Eng 7 University Rd Cambridge Mass
Hill Electronic Eng'g & Mfg Co New Kingstown Pa
Hilbarn Electronic Prods 55 Nassau Btlyn 22 N Y
Hillyer Instrument 54 Lafayette St New York 13 N Y
Hi-Lo TV Antenna 3540 N Ravenswood Chicago 13 Ill
Hindle Transformer Flemington N J
Hinnens-Galanek 25-14 Btwy Long Island City 6 N Y
Hitchner Mfg P O Box 8-541 Manchester N H
Hi-B Div Aerovox Corp Olean N Y
Hiltent Wires 26 Windsor Ave Minnola L I N Y
HITest Chemical 722 64 St Brooklyn N Y
Hobbs Inc Guy Dallastown Pa
Hobbs Mfg 26 Salisbury Worcester 5 Mass
Hobby & Brown 55 Front St Rockville Center N Y
Hobson Bros 4940 W Fullerton Chicago 30 Ill
Partner—E J Hobson
Partner—Roy L Hobson
Sales—H Behm
Beverly Hills-R—W S Harmon Co 121 North Robert-
son Blvd BRADSHAW 2-3321
Hofer Metal Prods 375 Kent Ave Brooklyn 11 N Y
Hoffman Eng Corp Anoka Minn
Hoffman O M 489 S Ave New York 17 N Y
Hoffmann Corp 3761 S Hill Los Angeles 3 Calif
Hoffmann Corp C 1 643 Liberty Ave Pittsburgh 22 Pa
Hoffman Needle Works Inc 535 59 St New York N Y
Hogan Labs 155 Perry New York 14 N Y
Hobe Inc 136 S Dunn Englewood N J
Holiday Specialties 112 Bleeker New York 12 N Y
Hollingsworth Corp J R Clifton Notts Pa
Holliston Mills 111 Lenox Haverwood Mass
Holmes Projector 1815 N Orchard Chicago 14 Ill
Holtzer-Cabel 125 Amory Boston 19 Mass
Holub Industries 413 DeKalb Sycamore Ill
Holyoko Wire & Cable Holyoke Mass
Home Recording Prods 56 Mill Freeport N Y
Honeywell Aero Div Minneapolis 13 Minn
Hopkins Eng Attadena Calif
Hopp Press 460 W 34 New York 1 N Y
Hopwood Retinning 190 Pacific Jersey City N J
Hopwood Retinning Malden Mass
Horlich Co W I 407 Atlantic Ave Boston Mass
Horn Co A C 10-10 44 Ave Long Island City 1 N Y
Horton Mach Prods 1091 Rockaway Valley Stream N Y
Hoskins Mfg 4445 Lawton Ave Detroit 8 Mich
Hotal Radio 1040 W Fort Detroit 26 Mich
Houghton Labs 322 Bush St Olean N Y
Houlhan Co J J 2508 W Lawrence Chicago 25 Ill
Houston Fearless 11801 W Olympic Los Angeles 64 Cal
Howie Screwlock Van Dyke Mich
Howard Industries 1760 State Racine Wis
Howard Moldings 2600 Grand Ave Kansas City 8 Mo
Hoyt Electrical Instr 42 Carleton Cambridge Mass
Hub Electric 2255 W Grand Chicago 12 Ill
Hubbell Inc Harvey State & Bostwick Bridgeport Conn
Hubbell & Miller 20 Mechanic New Rochelle N Y
Huck Mfg Co 2480 Bellevue Ave Detroit 7 Mich
Hudson American Corp 25 W 43 New York N Y
Hudson Lamp 528 Elm St Arlington N J
Hudson Tool & Die 118 S 14 Newark 7 N J
Hudson Wire Co Ossining N Y
Hufco Industries 2815 W Olive Burbank Calif
Hufford Machine 2201 Carmelina Los Angeles 64 Calif
Huggins Labs 711 Hamilton Menlo Park Calif
Hughes Aircraft Corp Culver City Calif
Hughes Res & Devel Labs Culver City Calif
Hughes & Phillips Burbank Calif
Dallas Tex-R—L R Ward Co 3009 Canton St
Dayton Ohio-R—Epps & Feistlin 1434 Vancouver Dr
Houston Tex-R—L R Ward Co 1814 Texas Ave
Los Angeles Cal-R—Maydwell & Hartzell Inc 427 W
5th St
New York NY-R—Geist Creaser Associates 60 East
42nd St
Phoenix Ariz-R—Maydwell & Hartzell Inc 324 So 2nd
Ave
Portland Ore-R—Maydwell & Hartzell Inc 1238 N W
Gilson St
San Francisco Calif-R—Maydwell & Hartzell Inc 158
11th St
Seattle Wash-R—Maydwell & Hartzell Inc 306 Dexter
Ave
Spokane Wash-R—Maydwell & Hartzell Inc Paulsen
Bldg
Hull & Co R O 1300 Parsons Rocky River Ohio
Hunt Corp 453 Lincoln Carlisle Pa
Hunter Mfg 1164 E Court Iowa City Iowa
Hunter Spring 21 Spring Ave Lansdale Pa
Huppert Co K H 6830 Cottage Grove Chicago 37 Ill
Huse Liberty Mica 171 Camden Boston Mass
Hutcheson G C Box 32 Arlington Tex

Hyvac Mfg Co 2961 E Colorado St Pasadena 8 Calif
Phone—Sycamore 5-4241 RYan 1-9381
President—Alden E Acker
Vice Pres & Gen Mgr—Grover Judy
Sec-Treas—E S Morrison
Mgr Technical Services—Raymond F Crisp
Contract Administrator—Robert Foster
Mgr of Manufacturing—Dr W O Wetmore
Director of Purchasing—Wm Buchan
Mgr of Personnel—George Morrow
Mgr Commercial Sales—John R Thompson
Works Manager—Harry Kirkpatrick

Hyvac Co 11423 Vanowen N Hollywood Calif
Hydraulic Press Mt Gilcard Ohio
Hydro-Aire Sub Crane Co 3000 Winona Burbank Calif
Hydro Molding 100 Sharron Plattsburg N Y
Hy-Lite Antennae 242 E 137 New York 51 N Y

IDEA Inc 7900 Pendleton Indianapolis 26 Ind
Ideal Industries 3316 Park Sycamore Ill
Ideco Div Dresser-Stacey 875 Mich Columbus 15 Ohio
Ile Mfg Co 325 N Hoyne Chicago 12 Ill
Ilg Elec Ventilating 2850 N Crawford Chicago 41 Ill
Ill Coll Spring 3100 N Major Ave Chicago 39 Ill
Ill Condenser 1616 N Throop Chicago 22 Ill
Ill Electric Porcelain 510 N Pearl Macomb Ill
Ill Testing Labs 420 N LaSalle Chicago 10 Ill
Ill Tool Wks 2501 N Keeler Ave Chicago Ill
Ill Transformer 412 S Green St Chicago 7 Ill
Ill Wood Prods 1656 N Besley Ct Chicago 22 Ill
Ilco Copper Tube Cincinnati 27 Ohio
Impact-O-Graph Corp 1900 Euclid Ave Cleveland 15 Ohio
Impact Register Co P O Box 445 Champaign Ill
Impedance Inc 9 Alan Court Farmingdale L I N Y
Imperial Radar & Wire 820 E 233 New York 66 NY
Improved Seamless Wire 775 Eddy Providence 5 RI
Inca Mfg Div Phelps Dodge Copper Ft Wayne Ind
Independent Mfg 5 Bellevue E Riverton NJ
Indiana Metal Prods Corp Rochester Ind
Ind Steel Prods Valparaiso Ind
Ind Steel & Wire Mangle Ind
Induction Heating 181 Wythe Ave Brooklyn 11 NY
Induction Motors 570 Main St Westbury LI NY
Boston—Gerber Sales Company 739 Boylston Street
Copley 7-0061 Covers Massachusetts and New
England States
Chicago—Memac Sales Company 7 S Clinton Street
ANdover 3-5728 Covers Illinois—Indiana
Dayton—William Klein 1472 Earlim Drive RAndolph
0943 Covers Ohio
Long Island City—Harold Ellis 23 03 45 Road
Exeter 2-6660 Covers Long Island
Los Angeles—Conrad R Strassner Co 1865 N West-
ern Avenue Hollywood 7-7086 Covers Califor-
nia—New Mexico—Arizona
New York City—Ben Miller-William Ruff 401
Broadway Walker 5-3964 Covers NY City—
New Jersey
Philadelphia—L D Lowery Inc 50 East Wynnewood
Road Wynnewood Pa Midway 2-9100 Covers
Pennsylvania—Maryland—Washington D C
Seattle—Fred H Haight Co 32-12 East Lake Avenue
EAsT 1818 Covers Washington—Oregon—Idaho—
Montana
Syracuse—Martin P Andrews 10 Mott Road Fayette
ville NY Fayetteville 5-8405

Inductograph Lab Brookfield Conn
Inductograph Prods 83-56 Victor Ave Elmhurst NY
Industrial Condenser 3243 N Calif Chicago 18 Ill
Industrial Control Wyandanch NY
Industrial Devices Edgewater NJ
Industrial Electrical 1509 Chicago St Omaha Nebr
Industrial Electronic 3973 Lanershim N Hollywood Calif
Industrial Electronics Hanover Mass
Industrial Electronics 8060 Wheeler Detroit 10 Mich
Indus Engg Prods 7416 Melrose Los Angeles 46 Calif
Industrial Hardware 109 Prince New York 12 NY
Industrial Instruments 89 Commerce Cedar Grove NJ
Industrial Mica 233 S Van Brant St Englewood N J
Industrial Nucleonics 1205 Chesapeake Columbus 12 Ohio
Industrial Precision Prods 315 N Hoyne Ave Chicago 12 Ill
Industrial Products Danbury Conn
Industrial Radio 428 N Parkside Ave Chicago Ill
Industrial Rectifier 161 Wash St New York N Y
Industrial Research Prods 9400 Belmont Franklin Ph Ill
Industrial Retaining Ring 8 W Sidney Mt Vernon NY
Industrial Scientific 34 W 33 New York 1 NY
Industrial Specialties 323 Atlantic Ave Brooklyn 2 NY
Industrial Synthetics Garwood NJ
Industrial Tape New Brunswick NJ
Industrial Test Equip 55 E 11 New York 3 NY
Industrial Timer 131 Oden Newark 4 NJ
Industrial Transformer Goldsboro Pa
Industrial TV 369 Lexington Clifton NJ
Industrial Tubes Inc 321 Stevens St Geneva Ill
Industrial Wire Prods 1106 Carnegie Cleveland 15 Ohio
Inet Div Leach Corp 4441 S Santa Fe Los Angeles Calif
Infra Electronic Corp Roseland N J
Inveraham Co E Bristol Conn
Inland Testing Labs 2745 N Janssen Ave Chicago 14 Ill
Inst-X Co Ossining NY
Instron Engg Corp 2 Hancock St Quincy Mass
Instrument Corp Blacksburg Va
Instrument Devel 163 Highland Needham Hgts 91 Mass
Instrument Electronics 90 Main Pt Washington NY
Instrument Lab 7350 Colerain Cincinnati 24 Ohio
Instrument Labs 315 W Walton Chicago Ill
Instrument Motors Acosta St Stamford Conn
Instrument Parts PO Box 150 Ossining NY
Instrument Resistors 1036 Commerce Union NJ
Instrument Specialties 244 Bergen Little Falls NJ
Instrument Wire 158 Church Guilford Conn
Instruments for Industries Old Country Rd Mineola N Y
Insulated Circuits 115 Roosevelt Belleville N J
Insulating Co 1 Broadway New York NY
Insulating Fabricators 69 Grove Watertown 72 Mass
Insulating Tube 26 Cottage Poughkeepsie NY
Insulation Mfrs 565 W Wash Blvd Chicago 6 Ill
Insulation & Wires 3435 Chouteau Ave St Louis 3 Mo
Inteltron Inc 1114 3 St S E Cedar Rapids Iowa

Inter-Communications 620 W Douglas Wichita 12 Kan
Intercontinental Industries 555 W Adams Chicago 6 Ill
Interoletronics Corp 2432 Gr Concourse New York 58 NY
Int'l Business Machs 590 Madison New York NY
Int'l Electronics 175 W Magnolia Burbank Calif
Int'l Electronics 137 Hudson New York 13 NY
Int'l Electronics 147 Parkhouse Dallas 2 Tex
Int'l Instruments PO Box 2954 New Haven 15 Conn
Int'l Machine Works 6904 Madison Cullenburg NJ
Int'l Medical Research 60 E 42 St New York N Y
Int'l Nickel 67 Wall New York 5 NY
Int'l Powder Metallurgy Ridgway Pa
Int'l Projector 55 LaFrance Bloomfield NJ
Int'l Pump & Machine 11 Governor Newark 2 NJ
Int'l Radiant 40 Martineoch Pt Washington NY
Int'l Rectifier 1521 E Grand El Segundo Calif
Phone: ORegon 8-6281

Products: Selenium Rectifiers, Electrical Current Rectifiers, Battery Charging Rectifiers, Selenium Diodes, Germanium Diodes, Photo-electric Cells, Selenium Voltage Regulators, etc.

President—Eric Lidow
VP—Dr Hans A Rudolph
Sec-Treas & Gen Mgr—Leon Lidow
Ass't Gen Mgr—J T Cataldo
Pur Agt—Claire Behar

Representative:
Albuquerque N Mex.—Allen I Williams (c/o Hoyt Westcott) 210 Cagua Drive
Cambridge—Jack Goss 1430 Massachusetts Ave Eliot 4-7799
Chicago—L W Phinney 205 W Wacker Dr FRanklin 2-3889
Cleveland—Joy Eng'g Co 5413 Pearl Rd TUxedo 4-4080
Dayton—Joy Eng'g Co 1721 E Third St KEmmore 2151
Denver—Allen I Williams 230 Cooper Bldg MAIn 0343
Ferndale Mich.—Haggerty Wells Co 1507 Saratoga W Lincoln 2-0811
Houston—Rectifier Sls Corp of Texas 1220 Polk St Fairfax 6858
Indianapolis—R O Whitesell & Assoc 2208 E Washington St MArket 8517
Kalamazoo—Mich.—Haggerty Wells Co 3009 Bron-son Blvd Kalamazoo 4-4001
New York—501 Madison Ave Plaza 5 8665
Philadelphia—Danco Corp 1346 Suburban Sta Bldg Locust 4-2870
San Francisco—Eichorn & Melchior 501 Indiana St UNderhill 1-8309
St Louis—T B Lowell Box 21 Normandy Br MULual 7803
Seattle—C B Parsons & Co 3028 First Ave MUlual 3933
Syracuse—Wilson H Zimmerman 647 S Warren St Phone 74-4880
Washington DC—Danco Corp 1029 Vermont Ave NW STerling 3-0698
Wilmington NC—Manufacturers' Sls Agency 4924 Oleander Dr Phone 5749

Export Representatives:
Bombay India—Eastern Electric & Eng'g Co 129 Mahatma Gandhi Rd
Habana Cuba—W Rodriguez PO Box 1976 San Ignacio 313
Tel Aviv Israel—Michael Pruzan 2 Prage St
Toronto Ont—Leonard Electric Co 346 Bering Ave BElmont 1-7731

Int'l Register 2620 W Washington Blvd Chicago Ill
Int'l Research Assoc 2221 Warwick Santa Monica Calif
Int'l Research & Devel 168 Hosack Columbus 7 Ohio
Int'l Resistance 401 N Broad Phila Pa
Phone: WAlnut 2-2166
Vice Pres chg Sales—Harry A Ehle
Gen Sls Mgr—Charles H Griffith
Indl Sls Mgr—Harold G Beebe
Dist Sls Mgr—Robert D Ferree
Expt Sls Mgr—Hans Monnhems
Atlanta—Hollingsworth & Still 407 Whitehead Bldg MAIn 5878 covers Ala-Fla Ga N & S Car E Tenn (incl Nashville & Chattanooga)
Boston—Ray Perron & Co 1870 Centre St FAirview 4-1008 covers Me-NH-Vt Mass-RI-Conn
Chicago—International Resistance Co 4013 N Milwaukee Ave (Klee Bldg) PEnacola 6-3910 covers N Ill (incl Carthage Forest Pk except Mo-line, Rock Island-Sterling) Wis (incl the 7 Southern counties)
Cleveland—R-Albert M Boehr 11621 Detroit Ave LAkeland 1-8468 covers Ohio
Dallas—George Anderson 1903 Griffin St RVer-side 5933 covers Tex Ark Okla-Miss La-Tenn (west of & excl Nashville)
Denver—Ronald G Bowen 446 Broadway SHerman 2241 covers Colo-Id-(E of & excl Boise) NM Wyo-Utah-Mont (E of & excl Judith Basis)
Detroit—Koehler-Pasmore 11833 Hamilton Ave TOWnsend 8-3272 covers Mich
Indianapolis—Vernon C Macnabb PO Box 5971 Broadway 4770 covers Ind-Ky
Los Angeles—David Marshok 672 S Lafayette Pl PI Suite #10 DUNlink 7-8235 covers Cal (S of & excl Fresno) Ariz Nev-(S of & incl Esmeralda Nye & Lincoln cos)
Minneapolis—Jack Heimann 1711 Hawthorne Ave MAIn 5457 covers E & W Wis (except the 7 Southern counties) Ia-III (Moline-Sterling Rock Island)—Minn-N & S Dak-Neb (E of & Incl Custer cos)
New York—International Resistance Co 165 Broadway-Rm 1438 CORland 7-5020 covers N NJ (excl Trenton)-NYC-NYS (bounded by Rockland & Westchester cos)-Long Island
Pittsburgh—R-Tanner B Coveri American Bank Bldg 600 Grant St COurt 0131 covers Pa (W of Har-risburg)-W Va-Cumberland Md (only)
San Francisco—James P Hermans 1234 Folsom St MArket 4166 covers N Cal from Fresno-Nev (N of & excl Esmeralda-Nye & Lincoln cos)

Seattle—David M Lee Co 2517 2nd Ave MAIn 5512 covers Ore-Wash-Mont (W of & incl Judith Basis)-Id (W of & incl Boise)
St Louis—Newman W Kathrins 4356 Duncan Ave OLive 7005 covers Mo-Kan- S Ill (from Quincy-Champaign & Danville)
Syracuse—BO—International Resistance Co 112 Mont-gomery St Syracuse 2-0274 covers N NY (from Rockland & Westchester cos)

Int'l Telemeter 2000 Stoner Los Angeles 25 Calif
Int'l TV 238 William New York 7 NY
Interstate TV 376 Sanset Hollywood Calif
Investment Casting 319 Chestnut Newark 5 NJ
Ippolito & Co James 401 Concord Bronx 54 NY
Iq Industries 6110 Wilshire Los Angeles 36 Calif
Irrington Varnish & Insulator 6 Argyle Irrington 11 NJ
Islip Transformer & Metal Co Beach St Islip NY
Isolantite Mfg Stirling NJ
I-T-E Circuit Breaker 1924 Hamilton Phila 30 Pa
Ivanhoe Electronic 14238 S LaSalle Chicago 27 Ill

Jack & Heintz 17600 Broadway Cleveland 1 Ohio
Jack Scientific Instrument Solana Beach Calif
Jackson Electrical Instr 18 S Patterson Dayton Ohio
Jackson Industries 500 E 40 Chicago 15 Ill
Jacobs Instrument 4718 Bethesda Bethesda Md
JanMac Products 4605 N E 118th Ave Portland 20 Ore
James Plating 720 W Schubert Chicago 14 Ill
James Vibration 4036 N Rockwell Chicago 18 Ill
JAM Hardware Mfg 75 N 11th St Brooklyn 11 N Y
Janco Corp 3111 Winona Burbank Calif
Janette Mfg Morton Grove Ill
Jarrell-Bak Co 165 Newbury Boston 16 Mass
Jarvis Electronics 605B Fullerton Chicago 39 Ill
Jaxco PO Box 646 Redlands Calif
Jayell Mfg 1379 Wash Ave New York 56 NY
J-B-L Instrument Clifton Heights Pa
J-B-T Instruments 441 Chapel New Haven Conn
Jeffers Electronics DeBols Pa
Jefferson Electric 910 S 25 Bellwood Ill
Jefferson Inc Bay 40 E Merrick Freeport LI NY
Jeffries Transformer 1710 E 57 St Los Angeles 11 Calif
Jeffrene Lab 1629 N Ballina Syracuse NY
Jelliff Mfg PO Box T Southport Conn
Jem-O-Matic Inc 530 Cherry Lane New Hyde Ph NY
Jennings Radio Mfg PO Box 1278 San Jose Calif
Jen Products 419 W 42 St New York NY
Jensen Industries 329 S Wood Chicago 12 Ill
Jensen Mfg 6601 S Laramie Chicago 38 Ill
Jerold Electronics 26 & Deblinson Phila 46 Pa
Jersey City Tech Lab 880 Bergen Jersey City 6 NJ
Jersey Specialty Little Falls NJ

President—Peter Hagedoorn
VP—Robert A Foster
Gen Dir—W Hagedoorn
Brookline Mass—William Goldman Ross Assoc 256 Aspinwall Ave Covers Conn-Me-Mass-NH-RI
Cleveland—William Simon Lawrence Elliott Co 20011 Fairmont Blvd Covers Ky-Ohio-W Vir Pittsburgh-Mich Ind
Dallas—Hal F Corry 311 Knox St Covers La-Tex Okla-Ark
Jefferson City Mo—Ward Paden Co Box 569 Covers Ark Western Iowa-Kan-Neb Okla-Mo-So Ill
Los Angeles—Erlanger Sls Co 953 S Grand Ave Covers Ariz-Calif-Nevada
Lutz Fla—Stanley K Wallace Box 744 Covers Ala-Fla Ga-Miss-NES Car-Tenn
Philadelphia—Warren L Loose 646 Gordon St Reading Pa Covers Md-Pa Wash D C
Portland—L L Minthorn Co W Weatherly Bldg Covers Id Mont-Ore Wash
St Paul—R L A Viendrer Trojan Sls Co Box 1021 Covers Minn-NES Dak
Tuckahoe NY—R J Brown Assoc 25 Beaumont Ci Covers NJ-NYC-NY
Wisconsin Northern Illinois—Walter G Brouillette 5049 Quincy St Chicago Ill
Wyo NM Utah Colo—US Sales Co Box D Sandy Utah Wyoming Colo N Mexico
Mexico DF—R M Zykofsky Industries Comerciales SA Ezequiel Montes 102 Covers Mexico
Canada—Harold Coriani Box 844 London Ont Can

Jewell Inc A W Elyria Ohio
JFD Mfg 6101 16 Ave Brooklyn 4 NY
Jiffy Clip Mfg 128 Clinton Huntington LI NY
Jobbins Electronic Enterprises Menlo Park Calif
Johanson Mfg Co Boonton NJ
Johns-Manville 22 E 40 St New York NY
Johnson Co E F Waseca Minn
Johnson Electronics PO Box 2023 Orlando Fla
Johnson Eng'g W V 95 Summit Summit NJ
Johnson & Hoffman Mfg 31 E 2 Mineola NY
Johnson Labs Willard Rd Norwalk Conn
Johnson Mfg 600 1 Ave N Mt Vernon Iowa
Johnson-Williams Ltd 2625 Park Blvd Palo Alto Calif
Johnston Fall Mfg 6106 S Bdry St Louis 11 Mo
Jones Div N B Cinch Mfg Co Chicago 24 Ill
President—Lester W Torr
VP & Gen Mgr—E J Pool
Sls Mgr—S Plannstiel
VP & Dev Engr—S M DelCamp
Credit Mgr—E L Hvale
Purch Agt—T A Hopkins
Adv Mgr—D T Campbell
Export Mgr—Carrington H Stone
Traffic Mgr—T A Hopkins
Plastics Engr—G F Mangin
Atlanta—Cartwright & Bean 4030 Club Drive NE Cherokee 2483
Boston—Ray Perron & Co 1870 Centre St FAirview 4-1008
Buffalo—Cinch-Jones Sls Div 463 Husley Dr PARK-side 0984
Chicago—B F Becker Covers Wis—P G Tomy Cov-ers Iowa Minn Nevada 2-2000
Cleveland—Scott B Steffen 1836 Euclid Ave MAIn 1-1286

Continued next page

ALPHABETICAL LISTING of MANUFACTURERS with LOCALIZER INDEX

Jones Div H B Cinch Mfg (continued)

Detroit—Cinch Jones Sls Div 2832 E Grand Blvd
Trinity 3 9500
Memphis—Carrwright & Bean 1336 Madison Ave
Phone 2 1914
New York—Cinch Jones Sls Div 15 E 26th St MUR-
ray Hill 3 9356
Philadelphia—S K Macdonald 1531 Spruce St
Kingsley 1705
Pittsburgh—S K Macdonald 335 Fifth Ave Atlantic
2253
Washington DC—S K Macdonald 3308 Fourteenth St
NW Columbia 3938
Hamilton Ont—Cinch Jones Sls Div Gage Ave &
Beach Rd
Jones Electronics M E Bristol Conn
Jones & Laughlin 3 Gateway Ctr Pittsburgh 30 Pa
Jontz Mfg 1101 McKinley Mishawaka Ind
Jordan Electronic 119 E Union St Pasadena 1 Calif
Jordan Mfg Morrice Mich
Joy Mfg 1201 Macklind Av St Louis 10 Mo
Judd Co H L BT Chambers St New York
Juvenile Furniture 202 N Cass St Peru Ind

Kaar Eng'g 2995 Middlefield Palo Alto Calif
Kabar Mfg 1907 White Plains Rd New York 62 N Y
Kahle Eng'g 1307 7 51 N Bergen NJ
Kahn Research Labs 22 Pine Freepoint NY
Services—Research Staff for Communications and
Television
Products—Single Sideband Transmitter Adapter of
low AM transmitter to operate twin channel
single sideband. Phase locked tone converter
provides 3 channels two tone keying with peak
power savings
Phone—Freepoint 9 8800
Export—RCA International 30 Rockefeller Plaza New
York City

Kaiser Aluminum & Chemical 1924 Bdw Oakland 12 Calif
Kaiser Electronics Div Willys Motors Toledo Ohio
Kaiser Metal Prods Inc Bristol Pa
Kaibell Labs PO Box 1578 San Diego 10 Calif
Kamm Co L J 30 W 96 New York 25 NY
Kane Electronics 81 Willowby Brooklyn 1 NY
Kanthal Corp Amelia Pl Stamford Conn
Kapner Hardware 2248 2 Ave New York 29 NY
Karp Metal Prods 211 63 St Brooklyn NY
Karrton Ph Box 472 Huntington Beach Calif
Kato Eng'g 1415 1 Ave N Mankato Minn
Kaupp & Sons C B 23 Newark Way Maplewood N J
Kay Electric 14 Maple Ave Pine Brook NJ

Sales Mgr—Louis A Garten
Export Sales Mgr—C L Jorik
Albuquerque—R. Gerald B Miller Co 302 1/2 W Central
Ave Albuquerque 3-1998
Belmont Calif—R. Gerald B Miller Co 1334 Old
County Rd Phone LYell 3 3438
Boston R Broger Instrument Sls Co Inc 739 Boylston
St Copley 7-0061
Canada R—Measurement Engineering Ltd Arnprior
Ontario Phone Arnprior 400
Chicago—R. Loren F Green & Asso 4949 W Diversey
Ave National 2-2370
Cleveland—R. S. Sterling Co 13431 Cedar Rd Yellow-
stone 2 7849

Dallas R—Earl Lipscomb Asso PO Box 8042 3561
Marquette St Elmhurst 5345
Delanson NY—R. Edward A Ossmann & Asso Inc
RFD #1
Detroit—R. S. Sterling Co 15310 W McNichols Rd
Broadway 3-2900
Hollywood—R. Gerald B Miller Co PO Box 1471
1550 N Highland Ave Hollywood 9-6305
Houston—R. Earl Lipscomb Asso PO Box 6573 2420-B
Rice Blvd Linden 9303
New Haven—R. Broger Instrument Sls Co Inc 42
Church St University 5-2147
Rochester—R. Edward A Ossmann & Asso Inc 3 Junie-
per St Culver 7640
Saratoga Springs—R. Edward A Ossmann & Asso
Inc 65 Webster St Saratoga Springs NY Phone
SCHeneclady 6 5478

Kaye-Halbert 3623 Eastham Colver City Calif
Kay-Towns Antenna Box 586 Rome Ga
Kaywoff Products Overton Nebr
Kearfott Co 1378 Main Ave Clifton N J
Keasbey & Mattison Ambler Pa
Kedman Co 233 S 5 St W Salt Lake City 1 Utah
Kenney & Co J H 2600 W 50 Chicago 32 Ill
Kelthley Instruments 3868 Carnegie Cleveland 15 Ohio
Keller Prods 41 Union Manchester NH
Keller Tool Co Wire-Wrap Div Grand Haven Mich
Kellogg Co M W Chem Mfg Div Jersey City NJ
Kellogg Switchboard 79 W Monroe Chicago 3 Ill
Kemet Co PO Box 6087 Cleveland 1 Ohio
Kemlite Labs 1819 W Grand Chicago 22 Ill
Kemode Mfg Co 161 W 18 St New York 11 N Y
Kemtron Electron Prods 23 Brown Salem Mass
Kennedy & Co D S 432 S Main Cohasset Mass
Kenney & Co J H 2600 W 50 Chicago 32 Ill
Kent Co F C 64 Howard St Irvington NJ
Kent Metal Mfg 490 Johnson Brooklyn 37 NY
Kent Television 505 Driggs Brooklyn 11 NY
Ken-Way Prods 110 E 1st Owensboro Ky
Kenwood Eng'g 265 Colfax Kenilworth NJ
Kenyon Transformer 840 Barry Bronx 59 N Y
Atlanta—R. J. E Joyner Jr PO Box 341 Station A
Chicago—R. Harry Hamilton 5500 West Devon Ave
Cleveland—R. Midwest Sls Co 3219 W 117th St

Dallas—R—Compair Sls Co Box 4116 Station A
Ft Myers Fla—R—Arthur H Lynch & Assoc PO
Box 466
Greeley Colo—R. Gordon G Moss PO Box 428
Kansas City Mo—R—F C Somers Co 415 City Bank
Bldg 18th & Grand Ave
Los Angeles—R. T. Louis Snitzer 5777 W Pico Blvd
Jersey City NJ—R. Adolph Schwarz 1 Exchange Pl
Room 919
Wellesley Hills Mass—R. W. B. Pray Sls 18
Brewster Rd
Kreco Labs 131-38 Sanford Flushing 55 NY
Kern-Moss Optical 12 John St New York NY
Kerrigan Lewis Mfg 4421 W Rice Chicago 51 Ill
Kester Solder 4201 Wrightwood Chicago 39 Ill
Ketay Mfg 555 Bdw New York 12 NY
Phone Digby 9-2717

President & Gen Mgr—M F Ketay
VP Sales—N K Zelazo
Hawthorne Calif—R—12833 Simms Ave Osborn 5
1137

Products

Synchros, servo motors, resolvers, magnetic ampli-
fiers, engine and flight instruments, navigational
devices, electronic equipment, automatic con-
trol systems

Kewff & Esser Hoboken NJ
Key Electronics 20 W 22 New York 10 NY
Keystone Carbon 1935 State St Marys Pa
Keystone Electronics 114 Manhattan Stamford Conn
Keystone Electronics 423 Brooma New York 12 NY
Keystone Prods 904 23 St Union City 6 NJ
Keystone Watch Case 1 Pavilion Riverside NJ
K-F Development 2606 Spring Redwood City Calif
K-G Electronics 2738 N Sheffield Ave Chicago Ill
Kidde & Co Walter 1056 Main St Belleville NJ
Kilgen Alercraft 4632 W Florissant St Louis 15 Mo
Kilgen Organ 4632 W Florissant Ave St Louis Mo
Kimble Glass PO Box 1035 Toledo 1 Ohio
Kinelix Inc 902 Bdw New York 10 NY
Kinevox Inc 116 S Hollywood Way Burbank Calif
King Elec Equip 9123 Inman Ave Cleveland 5 Ohio
King Enterprises J R 55 W 53 New York 19 NY
King Labs 127 Solar Syracuse 4 NY

Kings Electronics 40 Marblehead Tackahoe NY
Kinsley TV 160 John St Brooklyn NY
Kings Microwave 719 Main New Rochelle NY
Kinston Prods 1412 N Webster Kokomo Ind
Kinney Co Joseph Rosslyn Rd Carnegie Pa
Kinney Mfg 3529 Wash Boston 30 Mass
Kirby Electronics 29 Holly Pl Stamford Conn
Kirby Products Corp 175 5th Ave New York 10 N Y
Kirkerberg & Co M 1425 37th Brooklyn 18 NY
Kirch & Blum Mfg 3120 Forth Cincinnati 9 Ohio
Kirklund Co H R B King St Morristown NJ
Kitercraft Prods 4507 Brunswick Los Angeles Calif
Kiter-Vue Mfg Co 636 Penn Ave Pittsburgh 22 Pa
Klein & Sons M 3200 Belmont Chicago 18 Ill
Klielg Bros 321 W 50 New York 19 NY
Klincher Locknut 2153 Hillside Indianapolis Ind
Kline Iron & Metal Co 1225 Huger St Columbia S C
Kling Metal Spinning 174 Centre New York 13 NY
Klipsch & Associates Box 64 Hope Ark
Kilise Mfg 50 Cottage Grove SW Grand Rapids 2 Mich
Klinge Co M E PO Box 26 Platte Center Nebr
Knights Co James Sandwich Ill
Kocour Co 4800 S St Louis Av Chicago 32 Ill
Kollmorgen Optical 30 Chureh New York 7 NY
Kollman Instrument 80-08 45 Ave Elmhurst 73 NY
Koltan Electric 123 NJ RR Newark 5 NJ
Koppers Co Chem Div Koppers Bldg Pittsburgh Pa
Korb Engr & Mfg 30 Ottawa Grandville Mich
Korland Co 48-15 32 St Long Island City NY
Kotron Rectifier 175 Murray Newark 5 NJ
Kraft Bros 1299 Jerome Bronx NY

Krauter & Co 581 18 Ave Newark N J
Kregel Mfg Co 227 Fulton St New York 7 N Y
Krohn-Hite Instr 580 Mass Cambridge 39 Mass
Krouse Testing Machine 573 E 11 Columbus 3 Ohio
Krueger & Hudepohl 3rd & Vine Cincinnati 2 Ohio
Krylon Inc 2038 Wash Ave Phila Pa
Kuhn & Jacob 1200 Southard St Newark 3 NJ
Kulite Tungsten 723 Slip Union City NJ
Kulka Electric Mfg 633 S Fulton Mt Vernon NY
Kupfrman Mfg 367 State Binghamton NY
Kurman Electric 35-18 37 St Long Island City 1 NY
Kurz-Kasch Inc 1420 S Bdw Dayton 1 Ohio
Kuthe Labs 730 S 13 St Newark 3 NJ
K-V Transformer 20 E Franklin Danbury Conn
Kwikheat Mfg 3732 San Fernando Glendale 4 Calif
Kybernetes Corp 1100 Raymond Blvd Newark 5 N J
Kyle Corp S Milwaukee Wisc

L A B Corp East Onondaga St Skaneateles N Y
Labelon Tape 450 Atlantic Rochester NY
Lab Equipment Corp Hilltop Rd St Joseph Mich
Labsco Inc E Rutherford NJ
Labs for Electronics 75 Pitts Boston Mass
Laconia Corp 37 S 6 St Newark 7 NJ
Lacquer & Chemical 214 40 St Brooklyn 22 NY
Laidman & Co 1308 N Halsted Chicago 22 Ill
Lake Chemical 3052 W Carroll Chicago 12 Ill
LaMagna Mfg E Rutherford NJ
Lambda Electronics 103-02 Northern Blvd Corona 68 NY
LaMonte Chemical Prods Towson Md
LaMotte Chemical Products Baltimore 4 Md
Lampkin Labs Rt #1 Bradenton Fla
Lamson & Sessions 1971 W 85 Cleveland 2 Ohio
Lancaster Lens 220 W Main Lancaster Ohio
Land-Air 201 N Wells St Chicago 6 Ill
Landis & Gyr 45 W 45 St New York 11 NY

Lane Electronics 7254 Atoll N Hollywood Calif
Langevin Mfg 37 W 65 New York 23 N Y
President—Donald S Morgan
V P—W H Beal
Dir of Eng—R Edwards
Pur Agt—D Ryan
Camden—R—Andrew A Foley Assoc (contract Trans-
formers only) 640 Federal St Covers: So NJ-E Pa-
Dela-Md-DC-Fairfax & Arlington Counties of Va
Chicago—R—Royal J Higgins Co (contract Trans-
formers only) 10105 S Western Ave covers:
Northern Ill-Ind-Mich-Wis-Eastern Iowa
Hollywood—R—Langevin Co Inc 1000 N Seward St
(sound systems and stock items only)
Los Angeles—R—W C King Co (contract Transform-
ers only) 1355 Westwood Blvd Covers Cal &
Ariz
Rochester NY—R—Edw A Ossmann & Assoc Inc (con-
tract Transformers only) 3 Juniper St covers:
NY State (except Westchester and Rockland
cos)
San Francisco—R—Langevin Co Inc, 1050 Howard St
(sound systems and stock items only)
St Louis—R—Harris-Hanson Co (contract transformers
only) 5506 S Kingshighway covers: So Ill-Mo-
Ark-Kon

Lansdale Tube Lansdale Pa
Lansing Sound J B 2439 Fletcher Los Angeles 39 Calif
LaPointe Electronics 155 W Main Rockville Conn
Lapp Insulator 24 Sumner LeRoy NY
LaRose & Asso W T 31 Ontario St Cohoes N Y
Larson Co C O Sterling Ill
Las-Lab 316 W Saratoga Baltimore 1 Md
Laughlin Co T 199 Fore St Portland Me
Laureh Radio 3931 Monroe Wayne Mich
Lavin Associates H PO Box 196 Meriden Conn
Lavoie Labs Morganville NJ
Lawn Electronics Co E Freehold Rd Freehold N J
Lawter Chemicals 3550 Touhy Chicago 45 Ill
Leach Reel 5915 Avalon Los Angeles 3 Calif
Leader Electronics 2925 E 55 St Cleveland 27 Ohio
Lear Inc 11916 W Pico Los Angeles 64 Calif
Lectra Inc 153 W Huron St Chicago 10 Ill
Lectro Max 15 S 1 St Geneva Ill
Lectrohm Inc 5560 NW Hwy Chicago 30 Ill
Leece-Neville 5109 Hamilton Cleveland 14 Ohio
Leecraft Mfg Co 60 Greene St New York 12 N Y
Leeds Eng'g 34-40 79 Jackson Heights 72 NY
Leeds & Northrop 4970 Slenon Phila 44 Pa
Lee Electric 132 Beethwll Ave Paterson NJ
Lee Electric & Mfg 2806 Clearwater Los Angles 39 Calif
Lee Electronic Labs 233 Dudley Boston 19 Mass
Lee Laboratories Genesee Pa

Lee Weeh Labs 30 Main St Brooklyn 1 NY
Lee Spring 30 Main St Brooklyn 1 NY
Lehigh Structural Steel 17 Battery New York 4 NY
Leighton Labs 25 Herman St Glen Ridge NJ
Lelman Bros 146 Christie Newark 5 NJ
Leltz Inc E 468 4 Ave New York 16 NY
Lektra Labs 154 11 Ave New York 11 NY
Leland Electric 1501 Webster Dayton 1 Ohio
Leland Inc G H 123 Webster Dayton 2 Ohio
Lenk Mfg 30 Cummington Boston 15 Mass
Lenkorf Electric 1105 County San Carlos Calif
Lenox Instrument 2010 Chancellor Phila Pa
Lonz Electric Mfg 1751 N Western Chicago 47 Ill
Leonard Electric Prods 67 34 St Brooklyn 32 NY
Lopaca Mfg 75-19 64 St Glendale 27 NY
Lopel High Frequency Labs 54-18 37th Woodside 77 NY
Lerner Instr & Electronics 6PO Box 620 Brooklyn 1 NY
Lora Labs Black Oak Ridge Rd Wayne NJ
Lettline Radio Mfg 62 Berkeley Valley Stream NY
Levinthal Electr 2821 Fair Oaks Redwood City Calif
Lewis Co E B 11 Bragg St E Hartford Conn
Lewis Eng'g Co Nagatack Conn

Lewis & Kaufman 17320 El Rancho Los Gatos Calif
Lewis Spring & Mfg 2656 W North Chicago 47 Ill
Lewyt Mfg Corp 84 Broadway Brooklyn 11 N Y
Libbey-Owens-Ford Glass Co Brackendale Pa
Librascope Inc 1607 Flower Glendale 1 Calif
Liebel-Fiarsholm 111 E Amity Rd Cincinnati 37 Ohio
Lico Inc 147 Ocean Ave Lynbrook N Y
Life Record 64 W Randolph Chicago Ill
Light Electric 214 Lachawanna Ave Newark 4 NJ
Lima Electric Motor Findlay Rd Lima Ohio
Lima Electric 1021 Independence Rd Lima Ohio
Lincoln Eng'g Co 5701 Natural Bridge St Louis 20 Mo
Lindberg Instr Calebra Rd San Antonio 4 Tex
Lindo Air Prods 30 E 42 New York 17 NY
Lindgren & Assoc E A 4515 N Ravenswood Chicago 40 Ill
Lindly & Co 248 Herricks Rd Mineola L I N Y
Lindsay Structure 5000 W Dempster St Skokie Ill
Linear Equip Labs Brightwater Pl Massapequa NY
Linear Inc State & Lovick Phila 35 Pa
Linell Eng'g Corp S 447 South Blvd Oak Park Ill
Lingo & Son 28 & Baren Sts Camden NJ
Linick Chemical 59 E Madison Chicago 3 Ill
Link Aviation Co Binghamton NY
Link-Bolt 307 N Michigan Chicago 1 Ill
Link Radio 125 W 17 St New York 11 NY
Lion Fasteners 500 Main Honeoye Falls NY
Lion Mfg 2640 W Belmont Chicago 18 Ill
Lipps Co E A 5485 W Wash Los Angeles 16 Calif
Liquidphat Indicators 43-22 30 St Long Island City 1 NY
Liquidometer Corp 41-03 36 St Long Island City N Y

Liston-Becker Instr 649 Hope Springdale Conn
Little Falls Alloys 190 Caldwell Ave Paterson 1 NJ
Littelfuse Inc 1865 Miner Des Plaines Ill
Littell Mach F J 4127 Ravenswood Ave Chicago 13 Ill
Litton Industries 336 N Foothill Beverly Hills Calif
L & O Research & Devel 134 N Wayne Wayne Pa
Locke Dept Gen'l PO Box 57 Baltimore 3 Md
Lockheed Aircraft Corp Burbank Calif
Logo Sound Engr J M 2171 W Wash Los Angeles 18 Calif

Logistics Research 141 S Pacific Redondo Beach Calif
 Lojack Precision 32-60 K2 St Woodside NY
 London Chemical Co 325 W 32nd St Chicago 16 III
 London Records 539 W 25 New York NY
 Long Inc T J 215 Stonekinge Carlo Place LI NY
 Lorain Prods 1122 F St Lorain Ohio
 Loral Electronics 794 E 140 New York 54 NY
 Lord Mfg 1635 W 12 St Erie Pa
 Lord-Taber Co 40 Ontario Canandaigua NY
 Lorentzen Ins M K 391 W Bway New York 12 NY
 Losche & Norling 245 W 55 New York 19 NY
 Louis Bros 3543 E 16 St Los Angeles Calif
 Louthan Mfg PO Box 86 E Liverpool Ohio
 Lovins Eng'g 8203 Cedar Silver Spring Md
 Lowell Insulated Wire Lowell Mass
 Lowell Mfg 3030 Laclede St Louis 17 Mo
 Luckenbach & Co P 312 W 231 New York 63 NY
 Luffkin Rele 1730 Hess Saginaw Mich
 Luhrs & Co C H 297 Hudson Hackensack NJ
 Lukens Steel Gettysville Pa
 Luma Electric Equip 1112 Dorr Toledo Ohio
 Lumelite Electronic 407 S Dearborn Chicago 5 III
 Lumisone Resins 166 W Washington St Chicago 2 III
 Lunday Associates 694 Main Waltham 54 Mass
 Luma Laminates Huntington Station NY
 Luther Electronics 5728 W Wash Blvd Los Angeles Calif
 Lux Industries 38 Arroyo Ph Bufile 22 NY
 Luxor Lighting Prods Empire State Bldg New York NY
 Lyman Electronic 12 Cass Springfield Mass
 Lynch Carrier Systems 96 Jessie San Francisco 5 Calif
 Lyman Engineers 1432 N Carlisle Phila 21 Pa
 Lynn Electronic Research 9 W Magnolia Burbank Calif
 Lynn Products 317 E Ontario St Chicago III
 Lysoe Mfg 1401 Clinton Hoboken NJ
 Lytle Eng'g & Mfg 105 W Monroe St Chicago 3 III

McCullin-Christie 3410 W 67 Los Angeles 43 Calif
 McCoy Electronics Watt & Chestnut Mt Holly Springs Pa
 McElroy Mfg Littleton Mass
 McCahan Co Don 3700 W Roosevelt Rd Chicago 24 III
 McGregor Electronic Industries McGregor Iowa
 McIntosh Lab 320 Water Binghamton NY
 McLaughlin J L A LaJolla Calif
 McLean Engr Labs 260 Nassau Princeton NJ
 McNeill Eng'g 4057 W Van Buren Chicago 24 III
 McQuay-Norris 2320 Marconi Av St Louis 10 Mo
 McShan Development 71 Murray St New York 7 N Y
 Mac & Waldstein Co 438 Riverside Av Newark NJ
 Macallan Co 16 Macallan St Boston Mass
 Macdonald Co W S 33 University Cambridge 38 Mass
 Machine II/Mattie 1631 S Mich Chicago III
 Machlett Labs 1063 Hope Springfield Conn

Manufacturers of electron tubes for X-ray, broad
 cast, communications, industry & special pur-
 pose applications

President—R E Machlett
 VP X-ray Tube Sls—W E Stevenson
 VP Power Tube Sls—H J Hoffman
 Mfg of Engineering—T H Rogger
 Dir High Frequency Research—H D Doolittle
 Sls Eng'g—R E Nelson
 Chicago-SE—D S Frankel 850 W Jackson Blvd
 Los Angeles-SE—George J Taylor 210 Anderson St
 Distributed nationally by Graybar Elec Co
 Mach Electric Devices 48 Glenside Wyncote Pa
 Mackay Inc A D 198 Bway New York 38 NY
 Mackay Radio & Telegraph 345 Hudson New York 14 NY
 Mackay Research Labs 1946 N Kedzie Chicago 47 III
 MacKenzie Prods 141 Broadway New Haven Conn
 MacLeod & Manopol 10 Roland Charlestown 29 Mass
 Maccon Electronics Merchant St Warrensburg III
 Maccon Co Motor Ave Los Angeles 34 Calif
 Mac-Electric Prods 14405 Creshaw Gardenia Calif
 Macna Electronics 9810 Anza Ingleswood Calif
 Macnaff Corp 7300 W Lawrence Chicago 31 III
 Magnasyn Mfg 5517 Satsima N Hollywood Calif
 Magnatran Inc 248 Schuyler Ave Kearny N J
 Magnavox Co Fort Wayne 4 Ind
 Magnoseries Box 6960 Washington 20 DC
 Magnocord Inc 225 W Ohio Chicago 10 III
 Magnecraft Electric 1450 W Van Buren Chicago 7 III
 Magna-Puls Corp 140 Nassau New York NY
 Magnette Amplifiers 632 Tinton New York 55 NY
 Magnette Analysis 42-44 12 St Long Island City NY
 Magnette Core 2 Croton Ossining NY
 Magnette Devices 712 East St Frederick Md
 Magnette Instrument Co 62 Main St W Orange N J
 Magnette Metals Hayes at 21 Camden 1 NJ
 Magnette Powders Box 247 Johnsonburg Pa
 Magnette Recorder 1533-35 Cherry St Phila 2 Pa
 Phone: Rittenhouse 6-2010

General Manager—Albert L Borkow Jr
 Sales Manager—Ralph B Dinsmore
 Adv. Mgr.—Bernard Ostrof
 Chief Eng.—Norman B Butte
 Magnette Record Industries 30 Broad New York 4 NY
 Magnette Research 318 Kansas St El Segundo Calif
 Magnette Sound 4803 1/2 Grand Ave Malvern Iowa
 Magnette Windings Div Essex Wire Easton Pa
 Magnettes Inc Box 2307 Butler Pa
 Magnetics Research Co 142 King St Chappanna N Y
 Magnex Corp 90-28 Van Wyck Express Jamaica 18 NY
 Malco Co 21 N 3 St Minneapolis Minn
 Malda Development Co 214 Academy St Hampton Va
 Maljette Radio & TV 385 4 Av New York 16 NY
 Major Electronics 1090 Bedford Brooklyn NY
 Maltespines Co II E Attleboro Mass
 Malco Tool & Mfg. 4025 W Lake Chicago 22 III
 Malhin-Milhan 396 Colt Irvington 11 NY
 Mallinckrodt Chemical 2 & Mallinckrodt St St Louis Mo
 Mallory & Co P 3029 E Wash Indianapolis 6 Ind
 Mandel Chemical Products 207 Aster St Newark 5 N J
 Mandex Mfg 2608 W 16 Chicago 8 III
 Manning Maxwell & Moore 250 E Main Stratford Conn
 Manning Paper J A PO Box 328 Troy NY
 Mansol Ceramics 140 Little Belleville NJ
 Manson Labs 207 Greenwich Stamford Conn
 Manufacturers Eng'g & Equip Hathorne Pa

Manufacturer's Lab 10610 Kenick Sea Valley Calif
 Marathon Battery Co Wausau Wis
 Marathon Electric Wausau Wis
 Marblette Corp 37-21 30 St Long Island City NY
 Marbon Corp Gary Ind
 Marchant Research 1475 Powell St Oakland B Calif
 Marco Industries 207 S Helena Anaheim Calif
 Marconi Instruments 23 Beaver New York 4 NY
 Marine View Electronics 744 E 138 New York 54 NY
 Marine Electrical Instr 4001 Canal Manchester NH
 Marb Electronics 86 Shipman Newark NJ
 Marb Prods 3547 Montrose Chicago 18 III
 Marbel Electric Prods 129 Seneca Buffalo NY
 Marham Machine 150 Congress Keene NH
 Marble Corp 155 Waverly New York 14 NY
 Marlin Electric 1750 N Campbell Chicago 47 III
 Marm Electronics 703 Willow Chicago 14 III
 Mars Electronics 3000 N San Fernando Burbank Calif
 Marshall Assoc John Box 2463 Bridgeport 8 Conn
 Marsh Stoneil Mach 46 Marsh Bldg Belleville III
 Martin Co Glenn L Baltimore 3 Md
 Martin & Co H S 1916 Greenleaf Evanston III
 Martindale Electric Box 617 Cleveland 7 Ohio
 Maryland Electronics Mfg 5009 Calvert College Pk Md
 Maryland Lora Bal Air Md
 Masse Prods 2119 S Sepulveda Los Angeles 25 Calif
 Masonite Corp 111 W Washington Chicago III
 Massa Laba Birmingham Mass
 Mast Development Davenport Ohio
 Master Appliance Mfg 4 & Ontario Racine Wis
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 Ave Spring 7-2434 Covers Met Chicago
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 Fairmount 1-5644 Covers N Ohio
 Detroit-IS—Edgar D Harder 6500 Schaefer Dearborn
 Mich Luzan 1-8334 Covers Met Detroit
 Kansas City Mo-IS—Jack M Gilbert Co 4034 Benton
 Blvd Wabash 1302 Covers W Mo Kan
 Los Angeles-IS—Charles Vermilye Co 1010 So Robert-
 son Blvd Bradshaw 7-7918 Covers S Cal
 New York City-IS—William W Weiss 509 Fifth Ave
 Murray Hill 2-8945 Covers Met NY
 Rochester-IS—William Richter 3 Juniper St Culver
 7635 Covers NY State ex Rockland & West-
 chester cov

Master Electric Co 126 Davis Ave Dayton 1 Ohio
 Masterpiece TV Mfg 735 Flatbush Brooklyn 26 NY
 Matchless Electric 1700 Wash Chicago 12 III
 Matthews & Co J H 470 Atlantic Boston 10 Mass
 Mattison TV & Radio 10 W 181 New York 53 NY
 Mattson-Cowley 1487 Lincoln Pasadena 3 Calif
 Maurer Inc J A 37-01 31 St Long Island City NY
 Maxson Corp W L 460 W 34 New York 1 NY
 May Eng'g 6055 Lankershim N Hollywood Calif
 Mayfair Welded Prods 4440 Elston Chicago 30 III
 Maynard Electronics 1414 S Wabash Chicago 5 III
 MB Mfg 1060 State New Haven Conn
 Measurements Corp Bonton NJ
 Mechanical Inds Production 217 Ash Akron 7 Ohio
 Mech Industries John Plymouth Ind
 Modern Electric 41-41 24 St Long Island City 1 NY
 Modex Products 301 S Ar S Minneapolis Minn
 Modoly Master Mfg 2842 N. Cicero Chicago III
 Molpar Inc 452 Swann Alexandria Va
 Mondelohn Speedgun Co 4th Ave Washell N J
 Monio Research Lab PO Box 5222 Monio Park Calif
 Monico Inc Abbott Ave Merrittown NJ
 Harold Corp 4201 Belmont Chicago 41 III
 Monroy Contact PO Box 615 Dayton 9 Ohio
 Monroy Electronic Co Red Bank NJ
 Monroy Electro Prods 622 W Kinzie Chicago 10 III
 Monroy Eng'g 339 E Cottage York Pa
 Monroy Mfg Corp 45 Brown St Buffalo 11 N Y
 Monroy Record Corp 839 S Wabash Chicago III
 Moridian Labs Lake Geneva Wis
 Moridian Metallcraft 213 W Whittier Whittier Calif
 Morit Cal & Transformer 4427 N Clark Chicago 40 III
 Morit Plating 218 E 141 New York 51 NY
 Morit Chemical 1021 E 55 Chicago 15 III
 Morlio-Kort Goss 213 N Morgan St Chicago 30 III
 Morris & Zaluski Pratt Oval Cove LI NY
 Motorola Inc 1619 S Federal Mason City Iowa
 Motorola Inc 86-08 130 St Richmond Hill NY
 Metal Hydrides 12 Congress Beverly Mass
 Metal Products Nashville 4 Tenn
 Metal Textile Corp Roselle NJ
 Metals & Controls Gen'l Plate Div Attleboro Mass
 Metallast Proests 34-51 56 St Woodside NY
 Motors Inc 5353 N Keystone Indianapolis 20 Ind
 Motron Mfg 2021 W Cherkhill Chicago 47 III
 Motron Instrument 432 Lincoln Denver Colo
 Metropolitan Electronics 106 S Av New York 11 NY
 Motrotype Corp 6100 Archer Rd Summit III
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 Moyer & Co Waco 39 W 60 New York 23 N Y
 Moywood Co 5523 W Lake Chicago 45 III
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 Mica Coated Prods Co 426 Essex St Salem Mass
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 Micaite Fabricators 5324 Brownwood Av Chicago 40 III
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 Midwest Electric Prods Manhattan Minn
 Midwest Eng'g Devel 3648 State Line Kansas City Kan
 Midwest Molding 4630 W Fullerton Av Chicago 37 III
 Midwest Natallite 228 W Kinzie St Chicago 10 III
 Midwest Plastic Prods 1801 Chicago Rd Chicago Heights III
 Midwest Radio & TV 909 Bway Cincinnati 2 Ohio
 Mid-West Spring Mfg 4632 S Western Chicago 9 III
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 Millon Mfg James 150 Exchange Malden Mass
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 Milwaukee Reolster 700 W Va Milwaukee 4 Wisc

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Mine Safety Appliances 201 N Braddock Pittsburgh 8 Pa
Miniature Precision Bearings Keene NH
Minn Electronics 1058 University St Paul 4 Minn
Minn-Honeywell Regulator 2753 4 Av S Minn Minn
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 Par Prods 926 N Citrus Hollywood 38 Calif
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 Penna Optical Co 234 S 8th St Reading Pa
 Penna Testing Lab Doylestown Pa
 Penn-Tran PD Box 149 Bellefonte Pa
 Penn TV Prods Allegheny & Trenton Phila 34 Pa
 Penn Union Electric 315 State St Erie Pa
 Pennwood Nymechron 7249 Frankston Pittsburgh Pa
 Penn Lab 216 N Millpas Santa Barbara Calif
 Pentron Corp 221 E Callerton Ave Chicago 111
 Percolay Yarn & Textile 180 Woodon Pawtucket RI
 Perony Equip 113 Chambers Columbus 12 Ohio
 Perfection Electric 2635 S Wabash Chicago 16 Ill
 Perkin Eng's 345 Kansas El Segundo Calif
 Permacol Tape U S Highway 1 New Brunswick N J
 Permag Corp 214 Taft Brooklyn 5 NY
 Perma Glass Inc Geneva Ohio
 Permanent Label 578 Summit Ave Jersey City 6 N J
 Perma-Power 4727 N Damon Chicago 111
 Permaflex Corp 4900 W Grand Ave Chicago 39 Ill
 Perma Inc 6415 N Ravenswood Chicago 26 Ill
 Percebel Electronics 13 Garden New Rochelle NY
 Peters Co 8 S 1353 N Y Ave N E Washington 2 D C
 Peterson Radio 2800 W Bony Council Bluffs Iowa
 Petrik Bros 1938 N Springfield Chicago 47 Ill
 Petro P A 127 Water New York 5 NY
 Pfantlisch Chemical Waukegan Ill
 Photo Plastics 25 Footer Worcester 8 Mass
 Phototron Co 151 Pasadena S Pasadena Calif
 Chicago-IDS—Harrv W Gebhard Co 5129 W Devon
 Ave Covers N Ill-Ind-S Wis ROdney 3-3636
 Dayton-IDS—Neal Bear Corp 4052 Riverside Dr
 Covers Ohio-W Penn-W Va OXmoor 3041
 Los Angeles-IDS—Frank A Emmet Co 2837 W Pico
 Blvd Covers Calif-Ariz-New Mexico REpublic
 3-9111
 New York City-IDS—Blair-Steinberg Co 395 Broad-
 way Covers Del-Md-N J-N Y-E Penn-Virginia-
 Washington D C WORrh 4-7321-2-3-4
 Portland-IDS—Legg-Lungren Assoc 2118 SE Division
 Covers Montana-Oregon-Washington Empire
 8919 Sunset 5315
 West Richfield Ohio-IDS—Neal Bear Corp (see
 Dayton) West Richfield 100
 Phoebe Inc 900 Kingston Rd Baltimore 12 Md
 Pholpa Dodge Copper Prod 40 Wall St New York 5 NY

Phool Mfg 5700 Roosevelt Chicago 50 Ill
 Phil Insulated Wire 220 N 3 St Phila Pa
 Phila Electronics 24 E Custer Philadelphia 44 Pa
 Phila Quartz Public Ledger Bldg Phila 6 Pa
 Phila Scientific Glass Abington Pa
 Phila Steel & Wire Penn & Belford Phila Pa
 Philamon Lab 5717 3 Av Brooklyn 20 NY
 Philbrick Researchers G A 230 Congress Boston 10 Mass
 Philco Corp Accessory Div "A" & Allegheny Ave Phila-
 delphia 34 Pa
 Philco Corp Gov & Ind Div 4700 Wissahickon Av Phila
 44 Pa
 Tennessee 9 4000
 VP & Gen Mgr—Joseph H Gillies
 Gen Sls Mgr—James D McLean
 Chief Mech Engr—Frank D Peltier
 Chief Electronic Engr—Sterling C Spielman
 Indl Sls Mgr—George A Hagerty
 Asst Indl Sls Mgr Field—Kenneth C Moritz
 Asst Indl Sls Mgr Export—William F Tait
 Asst Indl Sls Mgr—John B DeWolf
 Beverly Hills 80—Marshall A Williams 260 S Beverly
 Dr CRestview 5 4486
 Chicago-BO—Robert A MacDonald 666 Lake Shore
 Dr W Hiehall 4-5750
 Dallas-BO—Richard A Fay 201 Southland Life Bldg
 RProspect 8657
 Dayton-BO—Lewis Kendall Talbot Bldg 1st &
 Ludlow Sts Michigan 6578
 Phila-Hqts—John W Mullen 4700 Wissahickon Ave
 Tennessee 9 4000
 San Francisco-BO—Lewis J Boss 650 Russ Bldg SUITE
 1-6282
 Washington-BO—Charles M Volkland 744 Jackson
 Place NW Executive 3 1500
 Govt Sls Mgr Hqts—C Paul Young
 Govt Sls Mgr Field—Harry M Stephy 744 Jackson
 Place NW Executive 3-1500
 Dayton-BO—E M Lisowski Talbot Bldg 1st &
 Ludlow Sts Michigan 6578
 Philharmonic Radio 235 Jersey New Brunswick NJ
 Phillips Control 84 W Jefferson Joliet Ill
 Phillips & Miss 155 N McCadden Hollywood 38 Calif
 Phillips Mfg 2816 Aldrich Minneapolis 8 Minn
 Phillips Petroleum Instruments Div Bartlesville Ohio
 Philmore Mfg 113 University New York 3 NY
 Philson Mfg 60 Sackett Brooklyn 31 NY
 Phoenix Electronics 50 Island St Lawrence Mass
 Phoenix Precision Instru 3803 N 5 Phila 40 Pa
 Phosphor Bronze 20 Franklin Seymour Conn
 PhotoBell Co 116 Nassau New York 38 NY
 PhotoChemical Prods 479 Walton New York 51 NY
 Photochemicals Corp Glenview NY
 Flushing 3-5050 Glen Cove 4-4000
 President—John D Maxwell
 Exec VP—Robert L Swiggett
 Sls Mgr—Alan P Kingsbury
 Ch Electronics Engr—James E Corberry
 Dir of Research—Frederick W Schenble
 Boston-R—Paul R Sturgeon 25 Huntington Ave
 Commonwealth 6-7705 Covers New England BO
 —27/ Broad St Milford Conn Milford 2-6080
 Chicago-R—Roy J Magnuson 4258 W Irving Pk Rd
 Palisades 5-1170 Covers Ill-Ind-Minn-Wis
 Dayton—H W Whitley Co 1521 Burroughs Drive
 Phone Randolph 5907 Covers Ohio & Michigan
 New York-SE—Arthur W Kelly Jr Glen Cove Flushing
 3-5050 Covers LI-Metropolitan NY Northern
 NJ-Westchester Co
 Philadelphia-R—Samuel K MacDonald Inc 1531
 Spruce St Kingsley 5-1205 Covers South NJ Pa-
 Del-Md-Dist Col-Va-W Va-BO—217 Riggs Bank
 Bldg 3308 14th St Washington 10 DC Columbia
 5-3938-80—715 State Theatre Bldg 335 Fifth
 Ave Pittsburgh 22 Pa Atlantic 1-2253
 Rochester-R—William Richter 3 Juniper St Ulver
 7635 Covers NY North & West of Rockland &
 Westchester Cos
 Toronto Ont-R—ROR Assa 290 Lawrence Ave W
 Covers Canada-E Windsor Ontario ORchard
 3003

Photocon Research 421 N Foothill Pasadena 8 Calif
 Photographic Prods 6916 Remains Hollywood 38 Calif
 Photo Research 127 W Alameda Ave Burbank Calif
 Photoswitch 77 Bony Cambridge 42 Mass
 Photovolt Corp 95 Madison New York 16 NY
 Photon Instrument 6516 Detroit Cleveland 2 Ohio
 Physical Research #1 Azoreles Dr Malibu Calif
 Physical Research Labs 1909 Park Ave New York N Y
 Picco Instruments 3593 Hayden Culter City Calif
 Pickard & Burns 240 Highland Needham Mass
 Pickering & Co 309 Woods Oceanide NY
 Picker X-Ray Corp 25 S Broadway White Plains NY
 Pizzo Products Framingham Mass
 Pilgrim Screw 259 Dexter St Providence RI
 Pilot Chemicals 47 Felton St Waltham 54 Mass
 Pilot Radio 37-06 36th Long Island City 1 N Y
 Pioneer Electric 3700 E Olympic Los Angeles Calif
 Pioneer Electric & Research Forest Park Ill
 Pioneer Electronics 24 Saunders Salem Mass
 Pioneer Electronics 2235 S Carmelina W Los Angeles
 Pioneer Gen-E-Motor 5841 W Dickens Chicago 39 Ill
 Pioneer Mfg Co Huntly Ill
 Pioneer Patents 3720 N New England Chicago 34 Ill
 Pioneer Scientific 161 Great Neck Rd Great Neck NY
 Pioneer Tool 5008 W Jefferson Los Angeles 16 Calif
 Pipestone Sales Co P O Box 311 Pipestone Minn
 Pique Machine Pique Ohio
 Pittsburgh Coll Box 700 Carnegie Pa
 Pittsburgh Electrodryer Box 1766 Pittsburgh 30 Pa
 Pittsburgh Photo Glass 200 Grant Bldg Pittsburgh 20 Pa
 Pix Mfg Co 5 Oliver St Newark 2 N J
 Plamondon Magnetics 1457 W Hubbard St Chicago 111
 Planet Mfg 225 Belleville Bloomfield NJ
 Plastic Accessories 91 Berrow New York 12 NY
 Plastic Capacitors 2511 W Moffatt Chicago 47 Ill
 Plasticite Corp 327 Rider Av New York NY
 Plastic Metals Div Westl Redlater Johnston Pa

Plastic Process 366 Madison New York 17 NY
 Plastic Wire & Cable E Main Jowett City Conn
 Plastieraft Prods 1 Station Pl W Nyack NY
 Plastics & Electronics 272 Northland Buffalo 8 NY
 Plastilight Inc 481 Canal Stamford Conn
 Plastoid Corp 42-61 24 Long Island City 1 NY
 Plateo Radio 489 Broome New York NY
 Plax Corp Pll Box 1019 Hartford 5 Conn
 Plume & Atwood 220 Bdry New York NY
 Plymouth Electronics 50 Kingsbury Worcester Mass
 Polytron Corp 47 Martine Av White Plains NY
 PM Industries 280 Fairfield Stamford Conn
 Poinsettia Inc 110 Cedar Pitman NJ
 Polarad Electronics 100 Metropolitan Brooklyn 11 N Y
 President—Dr D L Joffe
 VP—L J Lieberman
 Chief Engr—P H Odsey
 Comptroller—C J Eisen
 Polaris Pictures 5859 W 3 Los Angeles 36 Calif
 Polarizing Instrument Irvington-on-Hudson NY
 Polymer Products 222 W Adams St Chicago 6 Ill
 Polymer Corp 126 N 5 Reading Pa
 Polyphase Instrument 705 Haverford Bryn Mawr Pa
 Polytech Devices 1180 E Grand Elizabeth NJ
 Polytechnic Research & Devel 202 Tillary Brooklyn 1 NY
 Telephone—Ulster 2-6800
 Microwave, VHF-UHF, and DME Test Equipment,
 Magnetic Amplifiers Sid, and Custom Units,
 Evaporated Metal Film Resistors
 Business Manager—Dr K C Black
 Mgr Instrument Sales—H C Nelson
 Engr in Chg Component Sls—R E Jacobson
 Chicago-BO—K W Meyers 1 So Northwest Highway
 Park Ridge Ill TAlcott 3-3174
 Los Angeles-BO—W A Yeorsley, 741 1/2 N Seward St
 Los Angeles 38, HOLlywood 5-5287
 Pomona Electronics 524 W 5th Av Pomona Calif
 Ponder & Best 814 N Cole Hollywood 38 Calif
 Ponn Machine Cutting 25 Curve St Boston 11 Mass
 Poole Mfg Engrs 150 Express Dallas Texas
 Popper Inc J S 216 19 St Union City NJ
 Popper & Sons 300 4 Av New York NY
 Poray Inc 3369 W Grand Chicago 51 Ill
 Portable Electric Tools 200 W 83 Chicago 20 Ill
 Portchester Instr 114 Wilkins Av Portchester N Y
 Porter Inc M K 74 Foley Somerville 43 Mass
 Portomatic Co 43B E 91 St New York NY
 Ports Mfg 3265 Belmont Fresno 2 Calif
 Positive Lock Washer 181 Miller Newark 5 N J
 Post Co F 3650 N Avondale Chicago 111
 Post Machinery 140 Elliott Beverly Mass
 Potter & Brumfield Princeton Ind
 Potter Co 1950 Sheridan W Chicago 111
 President—Wayne F Potter
 Vice Pres—George Zeiler
 Production Mgr—J W Dahlgren
 Canada-D—Aircraft Appliances & Equipment Ltd
 71 Kipling Ave So West Toronto 18 Canada
 Chicago-R—Carroll & Carroll 3223 Armitage Ave
 Capital 7-3130 Chicago 50 mile radius
 Indianapolis-SE—R O Lewis 58 No Audubon Place
 Irvington 2061 Engineering service on Radio
 Noise Filter problems—no territory restrictions
 Irvington NJ-R—E F Alber 64 Union Ave Essex
 5-7458 Covers New York City—New Jersey
 Los Angeles SE—A W Nash 2112 So Alhantic Blvd
 Angelus 9-7304
 Midwest-SE—C F Sales 42 George St Graylake
 Ill Graylake 3-4131 Ill except Chicago—Ind—
 Ohio—Mich—Wis
 San Francisco R—Robert L Pfeiffer P O Box 103
 San Rafael Calif Northern California—Santa
 Barbara south limit—and Nevada
 Potter Instrument 115 Colter Hill Great Neck NY
 Powdered Metal Prods Franklin Park Ill
 Power Conversions 2635 W Grand Av Chicago 12 Ill
 Power Designs 119-22 Atlantic Richmond Hill N Y
 Power Equip 5740 Nevada Detroit 34 Mich
 Power Transformer 532 Mulberry St Newark 5 N J
 Pratt Albert 1939 N 18 Milwaukee 5 Wis
 Pratt & Whitney W Hartford Conn
 Precise Devel 999 Long Beach Oceanide LI NY
 Precise Measurements 942 Kings Hwy Brooklyn 23 NY
 Precision Apparatus 92-27 Horace Harding Elmhurst NY
 Precision Associates 354 Camberland Brooklyn 17 NY
 Precision Castings Matawan NJ
 Precision Crystal Lab 2223 Warwick Santa Monica Calif
 Precision Electronic Lab Box 5416 Seat Pleasant Md
 Precision Electronics 7518 Mirrow Los Angeles 46 Calif
 Precision Electronics Franklin Park Ill
 Precision Hearing Aids 5157 W Grand Chicago 39 Ill
 Precision Marking Co 87 Dora Av Livingston NJ
 Precision Metal Prods 41 Elm St Stonham Mass
 Precision Paper Tube 2057 W Charleston Chicago 47 Ill
 Phone Armitage 6-5700
 New England—Hartford Conn Hartford 2-1931
 Framingham Mass Framingham 7091
 Metropolitan NY—NJ—Jersey City NJ Journal
 Square 4-3574
 Uplate New York—Syracuse NY Syracuse 76-8056
 Northern Ohio & Western Penna—Cleveland O
 Atlantic 1-1060
 Indiana & Southern Ohio—Logansport Ind LOGans-
 port 2555
 Missouri—Southern Illinois—Iowa—St Louis Mo STer-
 ting 2318
 Maryland—Baltimore Md Plaza 2-3211
 Philadelphia & Camden—Philadelphia Pa CHestnut
 Hill 8-0282
 California—Pasadena Calif SYcamore 8-3919
 Canada—Montreal Quebec Can Walnut 2715
 Precision Piezo Service 427 Mayflower Baton Rouge La
 Precision Plastic Prods 225 N Racine Chicago 7 Ill
 Precision Potentiometers 1243 W Pico Los Angeles Calif
 Precision Prods 719 7 NW Washington DC
 Precision Radiation 2235 S LaBrea Los Angeles 16 Calif
 Precision Resistor 108 US Highway 22 Hillside 5 N J

ALPHABETICAL LISTING of MANUFACTURERS with LOCALIZER INDEX

Precision Scientific 3737 W Cortland Chicago 47 III
 Precision Supply & Machine Fair Lawn NJ
 Precision Thermometer 1434 Brandywine Phila 30 Pa
 Precision Tube North Wales Pa
 Preis Engraving Maah N P Hillside 5 NJ
 Premax Products Div Chisholm-Hyder Niagara Falls NY
 Premier Instrument 52 W Houston New York 12 NY
 Premier Metal Etching 21-03 43 Long Island City NY
 Premier Metal Prods 3160 Webster Bronx 67 NY
 Premier Research Labs 79 7 Ave New York 11 N Y
 Prescott TV 7350 Beverly Los Angeles 36 Calif
 Press Probe Co 4034 N 6th St Milwaukee 12 Wisc
 Press Wireless 25 Prospect Pl W Newton 65 Mass
 Presto Electric 600 Fulton St Elizabeth NJ
 Presto Recording PO Box 500 Paramus NJ
 Preston-Eidson Electronics 2760 Whittier Los Angeles
 Prestosol Mfg 37-27 33 Long Island City NY
 Price Electric Corp Frederick Md

Birmingham R—R C Nordstrom & Co
 Buffalo R—J V Costello
 Chicago R—Strauss Whitmore Inc
 Dallas—Southwest Electronic Industries
 Dayton R—Edward Magee
 Greensboro R—Tonkin & Schiffer
 Indianapolis R—Joe Murphy
 Jenkintown R—William D Miller Jr
 Los Angeles R—W S Harmon Company
 Philadelphia R—Robert C Dorris
 Roseland NJ R—Gawler-Knope Co
 Seattle R—Verner O Jensen Co
 Towson R—J H Electronic Sales Co
 Toronto Ont R—Radio Condenser Co Ltd
 Wellesley Hills R—E A Janse Assoc

Printoid Inc 93 Mercer New York 12 NY
 Process & Instruments 15 Stone Brooklyn 33 NY
 Proctor Soundex 133 W 6 Av Mt Vernon NY
 Prodelin Inc 307 Bergen Kearny NJ
 Producers Sales 2704 W Olive Burbank Calif
 Product Associates 318 W Olympic Los Angeles 15 Calif
 Product Development 307 Bergen Kearny NJ
 Production Eng's 173 Sargent Av Clifton NJ
 Production Instrument 710 W Jackson Blvd Chicago 6 III
 Production Tool & Fixture Oyster Bay NY
 Progressive Electronics 497 Union Brooklyn 11 NY
 Progressive Mfg Torrington Conn
 Projections Optics 330 Lyell Rochester NY
 Protocoseal Co 1920 S Western Chicago 8 III
 PSP Eng's 8420 Otis S Gato Calif
 Pulse Techniques 1411 Palisade W Englewood NJ
 Pyle National 1334 N Kastner Av Chicago 51 III
 Pyramid Electric 1445 Hudson N Bergen NJ
 Pyramid Instrument 630 Merrick Lynbrook NY
 Pyroferic Co 621 E 216 St Bronx 67 N Y

Camden R—Andrew Foley 640 Federal St—Wood-
 lawn 3-2693 covers Philadelphia area
 Chicago R—Harry W Gebhardt Co 5129 West Devon
 Ave Rodney 3-3636 covers III-Wis
 Cleveland R—Service Equipment Co 22700 Lake Rd
 Cleveland 3 Ohio Henderson 1-7030 covers
 Ohio-Mich
 Indianapolis R—Edwin A Schulz Co 721 Sherwood
 Dr Broadway 1993 covers Indiana
 Los Angeles R—Samuel Siegel 1133 So LaCienega
 Blvd Broadshaw 2-1535 covers Calif
 Montreal R—Adams Engineering Ltd 1500 St Cath-
 erine Street West Wellington 6857 covers
 Canada
 Pittsfield Mass R—McKenzie & Shugg Inc 50 South
 St Pittsfield 8618 covers New Eng
 Rochester R—Ben Tollefson, McKenzie & Shugg Inc
 144 Callingsworth Dr Hillside 4095 covers up-
 state NY

Pyrometer Instrument 92 Portland Bergenfield NJ

"Q" Glass Co 470 Broad St Bloomfield N J
 QLC Corp 10 Aubrey Summit NJ
 Q-Line Mfg 1562 61 St Brooklyn 19 NY
 Q-D-S Corp 39 W 60 New York 23 NY
 QRK Electronic Products 445 N Circle Dr Fresno Calif
 Quadriga Mfg 221 W Grand Chicago 10 III
 Quaker City Gear Works Bethayres Pa
 Quality Components St Marys Pa
 Quam-Nichols 234 E Marquette Blvd Chicago 37 III
 Queens Tool Eng's 15 Front St Rockville Centre NY
 Quinzy Speaker Mfg 221 Oak Quincy III
 QVS Inc 15 S Essex St Orange NJ

Racan Electric Co 1261 Broadway New York 1 N Y
 Radar Prods 2911 W Carroll Chicago 12 III
 Radar Engineers 4528 5th NE Seattle 5 Wash
 Rad-El-Co Mfg 7580 Garfield St Cleveland Ohio
 Radex Corp 2076 Eiston Chicago 14 III
 Radiophone Co 600 E Evergreen Ave Monrovia Calif
 Radiart Corp 3455 Vega Cleveland 13 Ohio
 Radiation Counter Labs 5122 W Grove Skokie III
 Radiation Inc PO Box Q Melbourne Fla
 Radioactive Prods 443 W Congress Detroit 26 Mich
 Radio Apparatus 55 N New Jersey Indianapolis Ind
 Phone: Atlantic 1624
 President—Roy G True
 Chief Eng—Ray A Morris
 Sales Mgr—William H Shorkey
 Pur Agt—Robert R Dial
 Radio Ceramics 109 S Superior Angola Ind
 Radio City Prods 101 W 31 New York 1 NY
 Radio Collis 1519 W Devon Chicago 26 III
 Radio Condenser Davis & Copwood Camden NJ

Radio Cores 9450 S Talley Oak Lawn III
 Radio Corp of America 435 S 5 St Harrison N J
 HUMBOLDT 5-3900
 VP & Gen Mgr—R T Orth
 Gen Comm Mgr—L S Thees
 Gen Mktg Mgr—D Y Smith
 Mgr-Adv & Sis Promotion—H S Stamm
 Gen Sales Mgr—L F Holleran
 Mgr Distrib Sales—H F Bersche
 Mgr Govt Sales—G R Rivers
 Mgr Tube Ind Sales—C W Taylor
 Mgr Equipment Sales—L D Kimmel
 Harrison NJ-BO—415 S 5th St HUMBOLDT 5-3900
 J W Kirschner Mgr Eastern IS
 Chicago BO—589 E Illinois St Whitehall 4 2900 T R
 Hays Mgr Central IS
 Los Angeles-BO—420 S San Pedro St MADISON
 9-3671 C R Klinger Mgr Western IS

Radio Corp of America Camden 2 NJ
 Radiocrafters Div Technicraft Supply Boston 34 Mass
 Radio Craftsmen 4401 N Ravenswood Chicago 40 III
 Radio Devel & Research 26 Cornelison Jersey City NJ
 Radio Eng Labs 36-40 37th Long Island City NY
 Radio Industries 5225 N Ravenswood Chicago 40 III
 Radio Instrument 12-05 Summer Fair Lawn NJ
 Radio Kits 120 Cedar New York NY
 Radio Mfg Engrs 300 1 Ave Peoria 6 III
 Radio Mfg Engrs Div Electro-Voice Buchanan Mich
 Radiomarine Corp 76 Varick New York NY
 Radio Materials 3325 N Calif Chicago 18 III

Bd Chairman—J F Riley
 President—R D Bourgeois
 Vice Pres & Treas—W L Houlihan
 Ch Engr—Earl Stout
 VP Mgr of Allco Ind Plant—W L Reimer
 Sales Mgr—R M Merritt
 Brooklyn R—Fred Spellman 206 E 4th St SO 8-0180
 Covers NY City & Upper NJ
 Chicago R—Harry Byrne 3325 N. California Ave
 Irving 8 3600 Covers Chicago Illinois & vicinity
 Fort Wayne R—Jos M Baxter 327 Field St Esterbrook
 5061 Covers Ind-Mich
 Los Angeles R—Jack Berman Co 1141 S Lacienga
 Blvd Broadshaw 2 9138 Covers So Calif-N Mex-
 Ariz
 Meriden Conn R—Henry Lavin Asso P O Box 196
 Covers New England
 Reading Ohio R—A C Wahl Co P O Box 213 Valley
 3270 Covers Ohio & NE Ky
 San Francisco R—E L Berman Co 758 Natoma St
 UNderhill 3-0317 Covers N Calif-Nev
 Syracuse R—Wally Swank 2310 Bellevue Phone
 Syracuse 4-2141 Covers Upper NY State
 Tenafly NJ—Norman H Lawton Co 12 Foster Rd
 Englewood 3-3979 Covers Phila & Eastern Pa
 Toronto Can R—J R G McVity 51 Dolewood Rd
 HU 8-9457 Covers Con

Radio-Matic of America 760 Ramsey Ave Hillside N J
 Radio Merchandise Sales 2015 Broadside New York 60 NY
 Radio Music 84 S Water Port Chester NY
 Radion Corp 1130 W Wise Chicago 14 III
 Radionic Controls Box 237 Merrin III
 Radio Products 2300 W Armitage Chicago 47 III
 Radio Receptor 251 W 119 New York 11 NY
 Radio Recorders 7000 Santa Monica Hollywood 38 Calif
 Radio Research 172 Front Marietta Ohio
 Radio Sonic Corp 111 Bleeker St New York 12 N Y
 Radio Specialty Mfg 2023 S E 6 Portland 14 Ore
 Radio Supply 85 Selden Ave Detroit 1 Mich
 Radionic Transformer 411 S Sangamon Chicago 7 III
 Radio & TV Inc 119 W 57 New York 19 NY
 Radio Transceiver Labs 116-23 Jamaica Richmond Hill NY
 Radio-TV Products Grass Lake Mich
 Radio Motor PO Box 291 Racine Wisc
 Rahm Instruments 12 W Bdry New York 7 NY
 Railway Communications Raytown Mo
 Rajah Co 53 Locust Bloomfield NJ
 Raiston Record 130 Cedar Pitman 15 NJ
 Ram Electronics Irvington-on-Hudson NY
 Ram Productions 661 W End New York 25 NY
 Ramsell Mfg 420 Market San Francisco Calif
 Ramsey Radio-TV 1135 St Louis Vandellia III
 Randall Inc D 102 High Westery RI
 Randolph Products 13th St Carlstadt NJ
 Rangertone Inc 73 Wintrop Newark 4 NJ
 Rapid Die & Molding Schiller Park III
 Rapid Electric 2881 Middletown Bronx 61 NY
 Rapid Electroplating Process 1414 S Wabash Chicago 5 III
 Phone WAbosh 2-0952

Manufacturers—Rapid Portable Platers For shop-
 field-production work Silver-gold-cadmium-etc-
 for all types of electrical contacts etc
 Charles Segel Co 143 Newbury St Boston & Mass
 Phones—Kenmore 6-5785 and Kenmore 6-1394
 Branch Office—Harford Conn
 Manufacturers Reps for all of New England—Radio-
 Electronic-Electrical
 Products—Connectors-Fuses-Fuse Parts and Mount-
 ings-Pilot Light Assemblies-Sockets-Relays-
 Switches-Etched and Lithographed Panels-
 Printed Circuits-Terminal Boards-Rectifiers-Meters-
 Magnet Wire-Cord Sets-Wire and Cable
 Rapid Specialties 325 W Huron Chicago 10 III
 Phone—DElaware 7-1440
 Product—test clips
 President & Sales Mgr—Earle M. Tate
 Rason Mfg Co 3050 W 21 St Brooklyn 24 N Y
 Rattray & Co E 116-08 Myrtle Ave Richmond Hill NY
 Rastrand Corp 4245 N Knox Chicago III
 Rastrand-Borg 3515 W Addison Chicago III
 Raven Screen 124 E 124th New York 35 NY
 Rawdon Smith Assemblers 2217 N St NW Washington 7 DC

Rawson Electrical Instr 117 Pottor Cambridge 42 Mass
 Raymond Mfg 226 S Center St Corry Pa
 Ray-O-Vac Co 212 E Wash Madison Wis
 Raynox Mfg Co 902 Albemarle Brooklyn 18 N Y
 Raypar Inc 7800 W Addison Chicago 34 III

Phone: Uxedo 9-3700
 Chairman Id of Dir—P A D'Orio
 President & Sis Mgr—A K Gianaras
 Exec V P & Dir of Eng—P A D'Orio
 V P & Factory Mgr—A F D'Orio
 Treas—J J D'Orio
 Purch Agt—Anthony Clemento
 Chief Eng—John Laban
 Beverly Hills R—S L Spraggins Co 373 So Robertson
 Blvd CRestview 5-1544 covers West Coast
 Chicago R—A K Gianaras 2345 W Devon Ave
 Ambassador 2-2100 covers III & Ind
 Detroit R—Grant Shaffer Co 16267 James Couzens
 Highway UNiversity 3-1227 covers Mich & Ohio
 New York R—William Lichter Co 90 W Bway RE-
 tor 2-5228 covers East Coast
 Raytheon Mfg Co Receiving Tube Div 55 Chapel St
 Newton 5B Mass
 Atlanta R—F C Nickerson Co 1133 Ponce de Leon
 Ave NE ATwood 2736 Covers N & SC-Ga- E
 Fla

Boston-Home Office—Orders: C H Morse—Technical
 Info: C W Martel—Raytheon Mfg Co 55
 Chapel St Newton 5B Mass Bigelow 4-7500
 Boston R—Arthur E Akroyd John Hancock Bldg Rm
 2311 HANcock 6-2433 Covers Me-NH-Vt-Conn-
 Mass-RI
 Buffalo R—Art Cerf & Co L J McTaggart 116 Eise-
 man Ave Kenmore 17 NY Buffalo Riverside 1009
 Covers W NY State
 Chicago-BO—C R Hammond Raytheon Mfg Co 4935
 W Fullerton Ave NATIONAL 2-2770
 Chicago III R—E R Haines 949 Lake St Oak Park
 III Euclid 6-4476 Covers E Wis-III
 Cleveland R—Neal Bear Corp 3435 Streetsboro Rd
 West Richfield Ohio Phone W Richfield 100
 Covers Ohio-W Penn-W Va
 Dallas R—Campion Sis Co 208 W Avery Covers
 Tex-La
 Dayton SE—R J McIlrath 410 W First St Michigan
 6883

Denver R—Ronald G Bowen & Co 446 Broadway
 SH 2501 Covers E Mont-Wyo-Utah-Colo-N Mex
 Detroit R—K C Burcaw Co Suite 207 22128 Grand
 River Ave KENwood 3-7700 Covers Michigan
 Kansas City R—Key Sales Co 3760 Broadway Logan
 7640 Covers Neb-Iowa-Mo-Kan-Ark-Okla
 Los Angeles SE—B C Winters 2419 S Grand Ave
 Richmond 7-5524
 Los Angeles R—Perlmuth-Colman & Assoc 2419 S
 Grand Ave Richmond 7-4321 Covers S Cal-Ariz-
 Hawaii

Louisville R—Cobb Sales Co 1629 Portland Ave CLay
 9406 Covers Ind-Ky
 Memphis R—A S Engelman Co 3205 Crump Ave
 MEMphis 48-6263 Covers Tenn-Ala-Miss NW
 Fla
 Minneapolis R—Fred B Hill Co 6110 Excelsior Blvd
 MOhawk 9-6727 Covers N & S Dak-Minn W
 Wis
 New York City SE—J Dorlan Raytheon Mfg Co
 19 Rector St Whitehall 3-4980 until July 1
 1954 then 589 Fifth Ave NY Plaza 9-3900
 Philadelphia R—L D Lowery Inc 50 E Wynnewood
 Rd Wynnewood Midway 2-9100-9001-9002
 Covers E Penn-NJ-Md-Dist Col-Del-Va
 Portland R—Don H Burcham Co 917 SW Oak St
 BRoadway 3830 Covers Wash-Ore-Idaho-W
 Mont-Alaska-Br Columbia

San Francisco R—H L Newman 420 Market St
 YUkon 6-3897 Covers N Cal-Nev
 Syracuse R—Art Cerf & Co W Ferguson 117 Fayette
 St Manlius NY MANlius 2-3301 Covers E NY
 State
 Toronto R—John S Plewes Co 52 Humbercrest Blvd
 UNjunction 2051 Covers Quebec Ont
 Washington DC-BO—J N Boland Raytheon Mfg Co
 1404 New York Ave NW Bond Bldg Rm 210
 REpublic 7-2330
 Raytheon Mfg Co Communications Equip Sales Waltham
 54 Mass

Manager—L A Rooney
 Asst Manager—J F Feeney
 Engineer—G A Hinckley
 Chattanooga R—W B Taylor Signal Mt Covers Ala
 Fla-Ga-Miss N C-S C-Tenn-Ky-Va
 Chicago R—W B Cozzens 220 Kedzie St Evanston
 Covers Wisc-III-N Dak-S Dak-Nebr-Kas-Iowa-Mo
 Cleveland R—M J Cudahy 3076 W 117 St Covers W
 Va-Ohio-Ind-Mich
 Needham R—C W Creaser 62 Stockdale Rd Covers
 New England
 New Orleans R—W J Monroe 4032 Thalia St DO
 Covers La-Ark-Okla-E Tex
 New York R—H J Geist-Creaser Assoc 60 E 42 St
 Covers N J-Penn-Del D C-Md-N Y
 San Francisco R—E J Rome 49 Calif St DO Covers
 No Calif-Nev-Colo-Utah
 Seattle R—R W Mackay 3224 Western Ave DO
 Covers Wash-Idaho-Mont-Ore-Wyo-Alaska
 Wilmington Calif R—J L Lovett 114 W B St DO
 Covers So Calif-Ariz-N Mex-W Tex

Raytheon TV & Radio 5921 W Dixon Chicago 39 III
 Raytone Screen 165 Clermont Brooklyn 5 NY
 Raytor Corp 5th St & Cannon Ave Lonsdale Pa
 R-B-M Div Essex Wire Logansport Ind
 R C Scientific Instrument Plays Del Roy Calif
 Roa Co J B 11941 Wilshire Los Angeles 25 Calif

Ready Power Co 11231 Freud Ave Detroit 14 Mich
 REA Magnet Wire Co 3610 E Pontiac Fort Wayne 4 Ind
 Ramra Co 56 W 103d Chicago 28 Ill
 Recording Associates 14 Hillcrest E Hartford Conn
 Recordite Corp 395 Broadway New York NY
 Reodon Corp 147 W 22 New York 11 NY
 Red Arrow Electronics 420 Alden St Orange NJ
 Rectifier Engrs 1803 E 7 St Los Angeles 21 Calif
 Redman Electronics Thompsonville Conn
 Redmond Co Quonset Mich
 Red Seal Electric 6321 Detroit Cleveland 2 Ohio
 Reed & Prince Mfg 1 Dunbar Ave Worcester 1 Mass
 Reader Co C M 171 Victor Detroit 3 Mich
 Revo Electronics 609 W Lake Chicago 6 Ill
 Reeves-Hoffman Corp 145 Cherry Carlisle Pa
 Reeves Instrument 215 E 91 St New York NY
 Reeves Soudercraft 10 E 52 New York NY
 Reevesound Co 35-54 36th Long Island City 1 NY
 Reeves Sound Studios 304 E 44 St New York 17 N Y
 REF Mfg Corp 393 Jericho Teropika Mineola NY
 Refrigeration Systems 646 W Wash Chicago 6 Ill
 Regal Electronics 603 W 130 St New York NY
 Regal TV Pleteras 151 W 46 New York 36 NY
 Regency Products 112 W 48th St New York 19 N Y
 Rego Insulated Wire 830 Monroe Hoboken NJ
 Regulator Corp Norwalk Conn
 Regulator Engrs & Devel 11545 W Jefferson Culver City
 Reichold Chemicals 630 S Ave New York NY
 Reilly Tar & Chem Merchant Bank Bldg Indianapolis Ind
 Reiner Electronics 152 W 25 New York 1 NY
 Reh-O-Ket Co 38-01 Queens Long Island City 1 NY
 Reliable Spring Wire 3167 Fallon Cleveland 9 Ohio
 Reliance Elec & Eng'g 1088 Ivanhoe Rd Cleveland Ohio
 Reliance Instrument 3027 W Van Buren St Chicago 12 Ill
 Remco Mfg 545 N LaSalle Chicago 10 Ill
 Remington-Rand 1902 W Milwaukee St Paul Minn
 Remington Records 551 S Ave New York 1 NY
 Remler Co 2101 Bryant San Francisco 10 Calif
 Resistor 117 Stanley Yonkers NY
 Repath Co PR 641 E 61 St Los Angeles 1 Calif
 Republic Aviation Farmingdale LI NY
 Republic Foil & Metal 55 Triangle Danbury Conn
 Republic Lens 916 9 Ave New York NY
 Republic Productions 4024 Bedford N Hollywood Calif
 Republic Radio & TV 64 E Lake Chicago Ill
 Republic Specialties 232 Washington New York 7 NY
 Republic Steel Republic Bldg Cleveland 1 Ohio
 Research Devel 429 E Colton Phila 44 Pa
 Research Electronics Roslyn Pa
 Research Instrument 233 Bway New York 7 NY
 Resdel Engrs 2351 Riverside Los Angeles 39 Calif
 Resinite Corp 2035 L W Charleston St Chicago Ill
 Resisco Corp 366 Bway New York NY
 Resistance Prods 714 Race Harrisburg Pa
 Resistoflex Corp 39 Plauson Belleville 9 NJ
 Resistors Inc 5526 W 26 Chicago 50 Ill
 Revo Inc 2 E Franklin Ave Minneapolis 4 Minn
 Revere Camera 320 E 21 St Chicago 16 Ill
 Revere Copper & Brass 230 Park New York 17 NY
 Revere Corp of America Wallingford Conn
 Rex Corp Hayward Rd W Acton Mass
 Rex Electronics 1351 E DeLos Indianapolis Ind
 Rex Rheostat 3 Foxhurst Baldwin LI NY
 Reynolds Electric 3000 River Rd River Grove Ill
 Reynolds Electronics 507 West St New York 14 NY
 Reynolds Metals 2500 S 3 Louisville 1 Ky
 Reynolds Radio & Equip N B Oneida NY
 R-F Electronics 291 N E 61 St Miami Fla
 RFI Shielded Enclosures 3634 N Lawrence Phila 40 Pa
 Rhode Island Electronics Inc Lonsdale R I
 Rhode Island Insulated Wire Cranston RI
 Rhodes Inc M N 30 Bartholomew Hartford 6 Conn
 Rhodes & Sons 12 Porter St Taunton Mass
 Rice Industries Gary Ind
 Rich Electronics 212 N W 8th Miami 36 Fla
 Rich-Roth Labs 1240 Main Hartford Conn
 Richards Co A S 37 Winchester Newton Highlands Mass
 Richardson-Alfon 116-15 15 College Pt LI NY
 Richardson Co 27 Ave 4 Lake St Melrose Park Ill
 Richardson Co Lockland Cincinnati 15 Ohio
 Richardson Labs K 254 Vincent Lynbrook NY
 Riebler & Thesmacher 1526 W 25 Cleveland 13 Ohio
 Riehof Productions 59 E 79 New York NY
 Rigidized Metals 657 Ohio Buffalo 3 NY
 Rinehart Books 232 Madison New York NY
 Ripley Co 1 Factory St Middletown Conn
 Ristauer Inc Appleton Wis
 Riverbank Labs Batavia Ave Geneva Ill
 River Edge Industries River Edge NJ
 Riverside Electrical 10221 Mich Ave Dearborn Mich
 Riverside Metal 1 Pavilion Riverside NJ
 Riviera Electronics 6060 SW 114 St Miami 43 Fla
 Rivxtron Co Box 262 Belmont Calif
 R J Audio Prods 164 Duane New York 13 NY
 R K Mfg PO Box 112 Marlon Ill
 RL Electronic Corp 731 W Washington Blvd Chicago 6 Ill
 Roanwell Corp 662 Pacific Brooklyn 17 NY
 Roberson Marine Port Washington NY
 Robbins & Myers 1345 Lagonda Ave Springfield 99 Ohio
 Robinette Co W C 802 E Fair Oaks S Pasadena Calif
 Robinson Aviation Teterboro NJ
 Robinson Inc E E 95 Park Nutley 10 NJ
 Robinson Recording 35 S 9 Phila 7 Pa
 Robotron Corp 21300 W 8 Mile Rd Detroit Mich
 Robuck Labs 1431 S LaBrea Ave Los Angeles 19 Calif
 Rochester Acoustical Labs Rochester Minn
 Rochester Electronics Penfield NY
 Rochester Iron & Metal 335 St Paul Rochester NY
 Rockbestos Prods 285 Nicolai New Haven 4 Conn
 Rockwell Engrs 4063 N M N J Indianapolis 5 Ind
 Rodale Mfg Co Emmaus Pa
 Roebling's Sons John A 640 Broad St Trenton 2 NJ
 Roesch Co D : 2200 S Figueroa Los Angeles 7 Calif
 Rohan Co Topsheld Mass
 Rogan Bros 8031 N Monticello Shoblo Ill
 Rogers Corp Goodyear Conn
 Rohden Mfg 4739 W Montrose Chicago 41 Ill
 Rohm Mfg 116 Limestone Peoria Ill
 Rola Co 2530 Superior Cleveland 14 Ohio

Roland Radio Corp 12 Anderson Ave Mt Vernon N Y
 Rollan Electric 8020 S Park Ave Chicago 19 Ill
 Roller-Smith Corp Bethlehem Pa
 Rollin Co 2010 N Lincoln Pasadena 3 Calif
 Rollins Corp Walbury St Lewis Del
 Rollin Robber Prods 1805 Jerome Bronx 53 NY
 Romac Products 48-01 25 Ave Long Island City N Y
 Romar Plastics Inc 1311 E Main St Charles III
 Romo Cable Corp PO Box 71 Romo NY
 Romweber Co Batesville Ind
 Rosen Eng Prod R 32 & Walnut Phila Pa
 Ross Mfg 2405 Armitage Chicago Ill
 Ross Roy Inc 2751 E Jefferson Detroit 7 Mich
 Rotan Corp 5660 59th Maspeh 78 LI NY
 Rowe Industries 1702 Wayne Toledo 9 Ohio
 Rowland-Kensall Marshall Mich
 Royal Diamond Tool Co 172 Green St Boston 30 Mass
 Rubbercraft Corp 1800 W 220 St Torrance Calif
 Ruberold Co 500 5 Ave New York 18 NY
 Rubicon Co Ridge & 35th Phila Pa
 Ruby Chemical 68 McDowell Columbus 8 Ohio
 Ruckelshaus J G 110 Pomeroy Madison NJ
 Rue-de Forest Inc 50 Moulton Cambridge 38 Mass
 Runzel Cord & Wire 4727 Montrose Chicago 41 Ill
 Rupp's Assembling 2341 N Seminary Chicago 14 Ill
 Rush Wire Stripper Div Eraser Co Syracuse 2 NY
 Ruska Instrument 4607 Montrose Houston 6 Texas
 Russell Bardsall & Ward Port Chester N Y
 Russell Speaker 6158 S Kedzie Chicago 29 Ill
 Russell & Stoll 125 Barclay St New York 7 NY
 Rust Industrial Co 608 Willow Manchester NH
 Rutherford Electronics 3707 S Robertson Culver City Calif
 Rutishauser Corp 490 S Fair Oaks Pasadena 1 Calif
 Ryan Aeronautical Lindbergh Field San Diego Calif
 Ryan Industries 19159 John R Detroit 3 Mich
 Ryerson & Son J T Box 8000-A Chicago 80 Ill
 Rytel Electronics 8920 Irwin Inglewood Calif

Safe Flight Instrument White Plains NY
 Saftco Glass 4717 Stenton Phila 44 Pa
 Saf-T-Flux Co Box 64 Collegeville Pa
 Sag Harbor Industries Sag Harbor NY
 St John X-Ray Lab Callion NJ
 St Marys Carbon St Marys Pa
 St Regis Paper 230 Fair Ave New York 17 NY
 Samco Products 36 Oak Ave Tuckahoe NY
 Sampson Chemical & Pigment 2830 W Lake Chicago Ill
 Samuel & Co J A 220 Bway New York 7 NY
 Sanborn Co Cambridge 39 Mass
 Sanders Associates 137 Canal Wausau WI
 Sandsteel Spring 145 Hudson New York 13 NY
 San Fernando Electric 1509 First San Fernando Calif
 Sangamo Electric Co Box 7 Marion Ill
 Saratoga Industries Saratoga Springs NY
 Sargent-Raymont 1401 Middle Harbor Oakland 20 Calif
 Sarra Inc 200 E 56 New York NY
 Sauerisen Cements 1045 N Canal Pittsburgh 15 Pa
 Saxil Instrument Pine Hill Harvard Mass
 Saxenburg Potteries Saxenburg Pa
 Saxton Prods 2101 Grand Concourse New York 53 N Y
 Scala Radio 2814 19th San Francisco 10 Calif
 Scantlin Electronics 145 W Hazel St Los Angeles Calif
 Schaefer Custom Engrs 2279 Alhessandro Los Angeles Calif
 Schaeffert Engrs Crescent & Drexel Camden 1 NJ
 Schauer Mfg 4500 Alpine Cincinnati 16 Ohio
 Scherr Co Geo 200 Lafayette St New York 12 NY
 Schmidt Inc G T 1804 Belle Plains Chicago 13 Ill
 Schneider & Marquard 199 S Portland Brooklyn NY
 Schutter Mfg Co W Lindenhurst NY
 Schuttig & Co 9th & Kearney Sts NE Washington DC
 Schwien Engrs 16217 Lindbergh Van Nuys Calif
 Schweitzer Paper 305 Lexington Ave New York N Y
 Sciaky Bros 4915 W 67 St Chicago 30 Ill
 Scientific Assembly 65 Hope Brooklyn 11 NY
 Scientific Assoc 580 Virginia Ave N E Atlanta Ga
 Scientific Book Publishing Vincennes Ind
 Scientific Coil 5619 Bway Chicago 40 Ill
 Scientific Electronic Labs 866 Bergen St Newark 8 NJ
 Scientific Indicator 259 Green Brooklyn 22 NY
 Scientific Radio 4301 Sheridan Hyattsville Md
 Scientific Radio Prods 215 S 11 Omaha N Neb
 Scientific Specialties Snow & Union Brighton 35 Mass
 Scientific Wood Cabinet 87 Holmes St Belleville 9 N J
 Scintilla Div Bendix Aviation Sidney NY
 Phone Sidney 9511

Sales Product Manager—D W Newcomb
 Dallas-SE—8401 Cedar Springs Road Dixon 2150
 Dayton-SE—4 South Main Street Hemlock 1674
 Detroit-SE—4560 Cass Avenue Trinity 1-9181
 Los Angeles-SE—117 E Providencia Ave Burbank
 Victoria 9-2211 or Thornwall 2-2121
 Milwaukee-SE—176 W Wisconsin Ave B'way 2-2843
 Philadelphia-SE—512 West Ave Jenkintown Pa TU-
 ner 2227

Seattle-SE—Box 62 Boeing Field, Rainier 2194
 S C Labs 37 George Newark 5 NJ
 "S" Corrugated Ganeched Gap Co Garfield NJ
 Scott Inc Herman Hosmer 385 Patnam Cam 39 Mass
 Seott Radio Labs 1020 N Rush Chicago 11 Ill
 Seovill Mfg Waterbury 20 Conn
 Sewer Corp 103 Park New York 17 NY
 Seriggs Co Lloyd 1022 N 6 St St Louis 1 Mo
 Seully Machine Co 62 Walter St Bridgeport 8 Conn
 Seaboard Studios 157 E 69 New York 21 NY
 Seager Carbon 291 Church St New York 13 NY
 Sealectro Corp 186 Union New Rochelle NY
 Sealco Corp 45 Willard Ave Providence 5 RI
 Sealttron Co 9701 Reading Cincinnati 15 Ohio
 Sears Co M J Roxbury NY
 Seay Instrument 6521 W Lamar Austin 5 Texas
 Secon Metals Corp 7 Intervale St White Plains N Y
 Seeburg Corp J P 1510 N Dayton Chicago 22 Ill
 Seegal Edw Machy 72 Spring St New York 12 NY
 Seiffert Inc E H 202 S Beech St Syracuse 10 NY
 Salmograph Service P O Box 1590 Tulsa Oklahoma
 Selector Industries 3100 Ocean Pkwy Brooklyn 35 N Y
 Self Winding Clock Grand & Willoughby Brooklyn NY
 Sel-Rex Precision Metals 229 Main Belleville 9 N J

Semrow Products 6120 N W Hwy Chicago 31 Ill
 Sena Corp New Augusta Ind
 Sensitive Research Instr 9 Elm Mt Vernon NY
 Sentinel Radio Evanston Ill
 Senoia Process 871 Willow Redwood City Calif
 Serdex Inc 91 Cambridge St Boston Mass
 Serfies Instruments 422 S Dearborn Chicago 5 Ill
 Service Parts Sys 13380 E 9 Mile Rd E Detroit Mich
 Serro Corp 2020 Jericho Tpk New Hyde Park LI NY
 Servomechanisms Inc 500 Franklin Ave Garden City N Y
 Serve-Tek Prods 1086 Goette Hawthorne NJ
 Serrotrol Co 114 W Ill Chicago 10 Ill
 Sessions Clock Co Forestville Conn
 Setchell Carlson Inc New Brighton Minn
 Setco Div Stromberg-Carlson 3127 Holmes Dallas Texas
 Setheo Mfg Co 70-78 Willoughby St Brooklyn 1 N Y
 Set Screw & Mfg 422 Main Bartlett Ill
 Shakeproof Inc St Charles Rd Elgin Ill
 Shallerest Mfg 520 Pusey Collingdale Pa
 Shannon Lem Mat 7356 Santa Monica Hollywood 46 Calif
 Shaw Insulator 160 Colt Irvington 11 NJ
 Shaw Television 195 Front Brooklyn 1 NY
 Shellen Mfg Ruby & Grand Passades Park NJ
 Sheldon Electric 68 Colt Irvington 11 NJ
 Shepard Labs 480 Morris Ave Summit NJ
 Sherman Industrial Electronics 505 Wash Belleville NJ
 Sherman Mfg N B 22 Barney Battle Creek Mich
 Shored Crystals 1401 Fairfax Tramway Kan City Kan
 Sherron Electronics 1201 Flushing Brooklyn 6 NY
 Shavers Inc M 123 W 64 New York 23 NY
 Shielding Inc Norman Ave Riverside NJ
 Shields Labs 810 N Lincoln Ave Pittsburgh 12 Pa
 Shore Engr Long Branch NJ
 Short Wave Plastic Form 2921 W Alameda Burbank Cal
 Shoup Engrs 1516 S Wabash Ave Chicago 5 Ill
 Shrader Mfg 2803 M St N W Washington 7 DC
 Shura-teno Prods 440 Adelphi Brooklyn 38 NY
 Shure Bros 225 W Huron Chicago 10 Ill
 Shurite Meters 35 Hamilton St New Haven 8 Conn
 Sickles Div F W Gam'l Instrument Corp Chicago Mass
 Sierra Electronic 1050 Brittan San Carlos Calif
 Sightmaster Corp 111 Cedar Ave Rochelle NY
 Sightmaster of Calif Santee Calif
 Sightmaster Relays 3008 Magazine St Louisville Ky
 Sigma Instruments 62 Pearl Boston Mass
 Signal Engrs & Mfg Long Branch NJ
 Signal Equipment Co 2706 3 Ave Seattle 1 Wash
 Signalite Inc 37-31 Neponse Hwy Nepton NJ
 Silicone Spray Prods 3519 Lee Rd Cleveland 22 Ohio
 Sillocks-Miller 10 W Parker Maplewood NJ
 Silver Bay Equip Co 5004 20th NW Seattle 7 Wash
 Simmonds Aerocessories Tarrytown NY
 Simplex Wire & Cable 79 Sidney St Cambridge 39 Mass
 Simpson Electric 5200 W Kinzie Chicago 41 Ill
 Simpson Mfg M 32-28 49 St Long Island City 3 NY

President—Mark Simpson
 Vice Pres—Miryam Simpson
 Sales Mgr—G Leonard Werner
 Ass't Sales Mgr—George Watson Jr
 Ch Engineer—Ralph Aasen
 Technical Service Adviser—Henry Bell
 Comptroller—Bernard Zisman
 Dir of Purchases—Philip S Ophner

Simpson Optical 32 W Carroll Chicago 24 Ill
 Sinko Mfg & Tool Co 3135 W Grand Ave Chicago 22 Ill
 Sittler Corp 18 N Ada St Chicago 7 Ill
 Size Control 2500 W Wash Chicago 12 Ill
 Skiatron Electronics 30 E 10 St New York 3 N Y
 Skibo Productions 165 W 46 St New York N Y
 Skiffite Electronics 731 Pleasant Ave Peckville Pa
 Ceramic capacitors, discs, plates, tubulars, electrolytic
 feed thru, standoffs
 President—Venold W Bavard
 Vice Pres chg Sales—Karl E Bretz
 Treasurer—James G Mitchell
 Baltimore-15—R B Barnhill & Assoc 418 Woodbine
 Ave Valley 5-3431
 California-15—Frank A Emmer & Co 3911 W Firm
 Blvd Los Angeles REpublic 3-9111
 Chicago-15—W F Swinke 541 Diversey Parkway Bl-
 terstreet 8-8044
 New York-15—S A Show Co 97 St Central Ave
 Hartsdale NY White Plains 8-5075

Skydyne Inc River Rd Port Jervis NY
 Skyline Antennae 200 W Silver Sharon Pa
 Skyline Tower Co 2436 W 59 Chicago Ill
 Skysweeper Inc Johnsbrough Ill
 Slate & Associates E F 11370 W Olympic LA 64 Calif
 Slegian & Co A 22 Burroughs St Bridgeport Conn
 Small Motors 2076 Elston Chicago 14 Ill
 Smith Heat Treating 5865 Wilmington Los Angeles Calif
 Smith Inc M H 436-18 St Brooklyn 15 NY
 Smith Mfg F H 3047 W Carroll Chicago 12 Ill
 Smith Mfg N R 105 Pasadena 6 Pasadena Calif
 Smith Meeker Engrs 157 Chambers New York 7 NY
 Smucker & Co A F 202 Tillary Brooklyn 1 NY
 Sneider TV 540 Bushwick Ave Brooklyn NY
 Snap-on Tools 8120 28 Ave Kenosha Wis
 SNC Mfg P O Box 277 Oshkosh Wis

President—John L Vette Jr
 VP & Ch Engr—William R Doseke
 Dir of Sls & Purch—Vernon H Young
 Chicago-15—Henry L Beekman 3644 N Western
 Ave Brunswick 8-4268 Covers N Ill-Wisc E Iowa
 Cleveland-15—Midwest Sls Co 3219 W 117th St
 Winton 1-2700 Covers Ky-Ohio-Ind-Mich-W Va
 Hoboken-15—5 W Simberloff 68 Hudson St HO-
 boken 2-5211 Covers NY-NJ-Pa-Md Del-Va Dist
 Col

Export-15—John C Hill 308 W Washington St
 Chicago Andover 3-6420

Snyder Mfg 22 & Ontario Phila 40 Pa
 Soderberg Mfg Co Alhambra Calif
 Sola Electric 4633 W 16 Chicago 50 Ill
 Solar Mfg. E 46 & Seville Los Angeles 38 Calif
 Soldering Specialties 19 Chatham Rd Summit NJ
 Sommer & Meza 3600 Oakley Ave Chicago 9 Ill
 Sonar Radio 3050 W 21 Brooklyn 24 NY
 Sona Industries 200 Lafayette New York NY

ALPHABETICAL LISTING of MANUFACTURERS with LOCALIZER INDEX

- Sonic Record's Prod 58 Mill Freeport NY**
Sonora Radio & TV 2023 W Carroll Chicago Ill
Sonotone Corp Elmsford N Y
 Chicago-IDS—J K Rose 2323 W Devon Ave AM 2 5584 Covers Ill-Wis-Davenport in Eastern Iowa
 Cleveland-IDS—John O Olsen 16201 Shaker Blvd WY-12624 covers Ohio, Ky-W Va-Western Pa
 Dallas-IDS—Crockett-Lund & Co 2204 Griffin St Covers Tex Okla-La Ark
 Jefferson City Mo-IDS—Ward Paden Box 569 Covers Mo Kan-Iowa except Davenport
 Los Angeles-IDS—J W Marsh 4216-20 W Jefferson Blvd RE 2 1697 Covers Cal Nev-Ariz
 Lutz (Tampa) Fla-IDS—S K Wallace Tampa 39-1513 covers N Car-S Car-Ga-Fla Ala-Miss Tenn
 Michigan-IDS—J P Sukup 4317 W 99 Pl Oak Lawn Illinois GA 4 0964 Covers Michigan
 New York-IDS—S A Shaw 92 So Central Ave (Hartdale) WH 8 5015 covers North Jersey Eastern N Y
 Scituate Mass-IDS—W A Hendrickson 291 First Parish Rd Lawson Park 652 covers Maine-N H-Vt Mass-Conn-R I
 Seattle-IDS—Marsh Agencies 2601 First Ave Covers Idaho-Mont-Ore Wash Br Columbia
 Silver Spring Md-IDS—Chas W Lienau 9427 Georgia Ave JU 7 5888 Covers Del Md Va-Dist of Columbia-Southern Jersey Eastern Pa
 Syracuse-IDS—Leonard D Allen 2401 So State St SY 4 4195 Covers NY except New York City Nassau Suffolk and Westchester counties
Soreng Mfg Schiller Park Ill
Sorensen & Co 375 Fairfield Stamford Conn
Sargel Electric 838 W National Ave Milwaukee
Soroban Eng'g Inc Bns 117 Melbourne Fla
Sorvall Inc Ivan 210 9 Ave New York 10 NY
SDS Cinema Supply 602 W 52 New York 19 NY
Sound Apparatus Main St Stirling NJ
Sound Devices 129 E 124 New York 35 NY
Sound Masters 165 W 46 New York 36 NY
Sound Screen Supplies 752 Broadway New York 3 NY
Sound Scriber 146 Munson New Haven 4 Conn
South Bend Lathe Works South Bend 22 Ind
South Chester Corp Lester Pa
Southern Electric & Transmission 3127 Holmes Dallas Tex
Southern Electronics 239 W Orange Grove Burbank Calif
Southern Industries Baltimore B Md
S River Metal Prods 377 Old Bridge Tpk S River NJ
Southwestern Industr Electronics Box 13058 Houston Tex
Southwest Prods Box 85-D San Antonio 4 Tex
Spaeth Sigmund 400 E 58 New York 22 NY
Spar Eng'g & Devel South & Paxson Wynote Pa
Spartan Radio TV 2400 E Ganson Jackson Mich
Spaulding Fibre 310 Wheeler Tonawanda NY
Spaulding Mfg Tipton Ind
Speak-O-Phone Recording & Equip Co 23 W 60 NY NY
Special Chemicals 30 Irving Pl New York 3 NY
Special Effects & Equip 418 W 54 New York 19 NY
Special Instruments Lab 312 W Vine Knoxville Tenn
Social Prods 9115 Brookville Silver Spring Md
Specialized Instruments Corp Belmont Calif
Specialties Inc Syosset L I NY
Specialty Assembling 79 Clifton Brooklyn 38 NY
Specialty Battery 212 E Wash Madison Wis
Specialty Eng'g 79 Clifton Pl Brooklyn 38 NY
Specialty TV Films 1501 Bdw New York 36 NY
Specific Products 14515 Dickens Sherman Oaks Calif
Spectram Mfg New London Conn
Speedway Mfg 1834 S 52 Ave Cleora 50 Ill
Speer Carbon Co St Marys Pa
Speer Resistor St Marys Pa
Spellman TV 3029 Webster Bronx 67 NY
Spencer-Kennedy Labs 186 Mass Cambridge 39 Mass
Spencer Thermostat 34 Forest St Attleboro Mass
Spera Electronics Labs 37-10 33 Long Island City NY
Sperry Gyroscopic Great Neck L I NY
Sperry Products Shelter Rock Rd Danbury Conn
Sperli-Faraday Inc 1077 Centennial Cincinnati 21 Ohio
Spincraft Inc 4122 W State Milwaukee W Wis
Spiraling Products Hicksville NY
Sprague Electric 233 Marshall N Adams Mass
 MOhawk 3-5311
 President—J K Sprague
 Chairman of the Board—R C Sprague
 Treas—R C Sprague
 Ex V Pres—E L Ward
 V Pres and Sec—W J Nolan
 V Pres in chg Sales—N W Welch
 Tech Asst to the Pres—Leon Podolsky
 Mgr Field Eng—C C Killen
 Dir of Purchases—F Jenkins
 Atlanta-IDS—Maitland K Smith Co 317 Forrest Ave NE
 Boston-IDS—Harrison Reynolds Co 313 Wash St Newton DEature 2 4620
 Chicago-BO—Sprague Elec Co 5942 W Montrose Ave Mulberry 5-6400
 Chicago-DS—Al Quackenbush 2629 No 77 Court St Franklin 2-7100 (does not cover Metropolitan Chicago)
 Cincinnati-IDS—C E Anderson Co PO Box 1176 Garfield 3763
 Cleveland-BO—Sprague Elec Co Rockefeller Bldg Main 1-2200
 Columbus-DS—C L Pugh Co 4500 Dublin Rd Kingswood 4855
 Dallas-IDS—Crockett Lund & Co Reserve Loan Life Bldg RA-5764
 Dayton-BO—Sprague Elec Co 3 E 2nd St Adams 9188
 Dayton-IS—H W Whitby Co 1521 Burroughs Dr Randolph 5907
 Denver-IDS—Ronald G Bowen 446 Broadway Sherman 2501
 Detroit-IS—B J Fitzner 8803 Michigan Ave
 Detroit-IDS—A B M Sales Co 2450 Fenkell Ave University 2-1300
 Kansas City-DS—Paul G Scholz Co 210 W 8th St Harrison 7111
 Los Angeles-BO—Sprague Elec Co 11325 Wash Blvd Culver City EXbrook 7-2193
 Minneapolis-IDS—H M Richardson 9 E 22nd St GE-4078
 New York City-BO—Sprague Elec Co 50 E 41 St ORegon 9-1195
 New York City-IDS—William Rutt 401 Broadway Canal 6-6545
 Philadelphia-BO—Sprague Elec Co 525 Cooper St Camden NJ WOODlawn 6-1776
 Phoenix-DS—Harry A Moore Sls Co 4142 No 18 St Phone: 5-4662
 Portland Ore-DS—Dale G Weber 309 S W Third Ave at Oak ATwater 5403
 Rochester-DS—Wolfe-Morsay Sls Co 74 Park Ave MOhroe 6228
 St Louis-BO—Sprague Elec Co 3910 Lindell Blvd Jefferson 5 7239
 San Francisco-IDS—William J Purdy Co 312 Seventh St UNDERhill 3 4321
 Washington-BO—Sprague Elec Co 724 Ninth St NW METropolitan 3791
Springfield Enterprises Box 54 Springfield Gardens N Y
Spring Packing 332 S Michigan Chicago Ill
Spruce Pine Mica Spruce Pine NC
Square Boat Mfg 391 Saw Mill River Yonkers NY
Stackpole Carbon Tannery St St Marys Pa
Standard Inc J S 55 Worth St New York NY
Stahl Metal Products 3490 W 140 Cleveland 11 Ohio
Stainless Inc North Wales Pa
Stant Tool & Mach 47-28 37th Long Island City 1 NY
Stancil-Hoffman 921 N Highland Hollywood 38 Calif
Standard Cabinet Caristadt NJ
Standard Coll Prods 2329 N Polaski Chicago 39 Ill
Standard Crystal 1714 Locust Kansas City Mo
Standard Electric Madison Ave W Berlin NJ
Standard Electric Time 119 Logan Springfield Mass
Standard Electrical Prods., 2240 E 3 Dayton 3 Ohio
Standard Electronic Research 2 E End New York 21 NY
Standard Electronics 285 Emmet Newark 5 NJ
 Vice President—Wm H Zillger
 Mgr Television Eng—Harry Smith
 Mgr Customer Service Dept—Wm H Rappolt
 Dist Sales Eng Mgr—James T Campbell 'phone Republic 7-2246 414 Defense Bldg 1026 17th St NW Washington & DC Territory primarily Washington D C plus Delaware, Virginia and West Virginia; south of a line drawn through and including the cities of Pittsburgh and Harrisburg Pa and through Trenton New Jersey to the coast
 Dist Sales Eng Mgr—James L Evans 'phone Birmingham 2-6223 2463 Fairway Drive English Village Birmingham 9 Alabama Territory: South of Virginia, Kentucky and Missouri: east of Oklahoma and Texas
 Dist Sales Eng Mgr—Edward W Stone 'phone Ravenswood 8 3967 Apt 206 1039 Hollywood Chicago 40 Illinois Territory: East of the west boundary of Minnesota, Iowa and Missouri north of the southern boundary of Missouri and Kentucky, west of the eastern boundary of Kentucky and Ohio
 Dist Sales Eng Mgr—Lew E Pett 'phone Webster 1-4382 432 South Curson Street Los Angeles California Territory: West of the eastern boundary of North and South Dakota, Nebraska, Kansas, Oklahoma and Texas, east of western boundary of Idaho, Nevada and Arizona
 Clyde R Rush—'phone Dunkirk 2-7301 Suite 101 McKinley Bldg 3757 Wilshire Blvd Los Angeles 5 California Territory: Washington, Oregon and California
 Export of Television Equipment—International Lema Co Cable address Intlema New York S E Robinson Mgr 30 Church Street New York NY 'phone Cortlandt 7 7450
 Export of AM & FM Broadcasting equipment—Westrex Corp Cable address Westrex New York 111 Eighth Avenue New York NY 'phone Chelsea 3 7300
Standard Electronics Mfg 11861 Teale St Culver City Cal
Standard Gauge Co Poughkeepsie N Y
Standard Locknut & Washer 510 N Capitol Indianapolis Ind
Standard Metals 262 Broad N Attleboro Mass
Standard Pizeo Co Carlisle Pa
Standard Pressed Steel Box 899 Jankintown Pa
Standard Telephone & Cables, Con House Ald London Eng
Standard Windmg 44-62 Johns Newburg NY
Standard Wood Prods 47 W 63 St New York 23 NY
Stanley Spring Mfg 1850 W Falton St Chicago 12 Ill
Stanley Works 195 Lake St New Britain Conn
Stanwyck Windmg 137 Walsh Newburg NY
Star-A Electric Mfg Co 269 Meserole St Brooklyn 6 N Y
Starbird G A 950 N Highland Los Angeles 38 Calif
Star Expansion Prods 147 Cedar New York 6 NY
Star Faso Co 235 Canal New York 13 NY
Star Kimble Motors 200 Bloomfield Ave Bloomfield NJ
Star Porcelain Millhead Am Trenton 9 NJ
Star Products 221 E Callerton Chicago 16 Ill
Starrett TV 601 W 26 New York 1 NY
Star Stainless Screw 190 Union Ave Paterson NJ
States Co 19 New Park Hartford Conn
Statham Labs 12401 W Olympic Los Angeles Calif
Staver Co 41-51 N Saxon Ave Bay Shore N Y
Stavid Eng'r 312 Park Plainfield NJ
Sta-Warm Electric 553 N Chestnut Ravenna Ohio
Steel Co M D Lafayette Bldg Phila 6 Pa
Steelman Phone & Radio 12 Anderson Mt Vernon NY
Steinen Mfr., Wm., 43 Braen St Newark 5 NJ
Steiner-Ives Springfield Rd Union N J
Stein Labs F 121 N 4 Atchinson Kan
Stelma Inc 389 Ludlow Stamford Conn
Steman Co 1277 S Cherokee Denver 10 Colo
Stephens Mfg 853B Warner Culver City Calif
Sterling Bolt Co 375 W Erie St Chicago 11 Ill
Sterling Elec Motors 5401 Telegraph Los Angeles Calif
Sterling Eng'g 54 Mill Laconia NH
Sterling Instruments 15310 W McNichols Detroit Mich
Sterling Mfg 7201 Wentworth Cleveland 2 Ohio
Sterling Transformer 297 N 7th Brooklyn 11 NY
Sterling TV 15 W Lake St Chicago 1 Ill
Stevens-Arnold 22 Elkins St S Boston Mass
Stevens Mfg Mansfield Ohio
Stevens Mfg G 6022 N Rogers Chicago 30 Ill
Stevenson Bros., 110 Race St Phila 6 Pa
Stevens Paper Mills Windsor Conn
Stevens Products 86 Main E Orange NJ
Stevens-Walden 487 Shrewsbury St Worcester Mass
Steward Mfg D M PO Box 510 Chattanooga Tenn
Stewart Eng'g Box 277 Soquel Calif
Stewart Instrument 6507 Grand River Detroit 8 Mich
Stewart Mfg F W 4311 Ravenswood Chicago 13 Ill
Stewart Stamping 630 Central Park Yonkers N Y
Stewart Warner Corp 1300 N Kestner Chicago 5 Ill
Sticht Co H H 27 Park New York 7 NY
Stimpson Co E B 70 Franklin Ave Brooklyn 5 NY
Stoddard Aircraft Radio 6644 S Monica Hollywood 38 Cal
Stokes Machine F J 5500 Tabor Phila 20 Pa
Stokes Moulded Prods Taylor & Webster Sts Trenton N J
Stone City P O Box 351 Bedford Ind
Stone Paper Tube 900 Franklin Washington 17 DC
Stow Mfg 445 State St Binghamton NY
Strandberg Eng'g 416 W Market Greensboro NC
Stratford Pen 44 W 28 New York NY
Stratosol Mfg 3039 W Fullerton Chicago 47 Ill
Streeter-Amet 4101 Ravenswood Chicago 13 Ill
Strickland Film 220 Phan Rd N E Atlanta Ga
Stroblite Co 35 W 52 New York 19 NY
Stromberg-Carlson Co Rochester 3 NY
Strong Electric 87 City Park Toledo 2 Ohio
Stronghold Screw Prods 216 W Hubbard Chicago 10 Ill
Struthers-Dunn Inc Pitman N J
Stupakoff Ceramic & Mfg Latrobe Pa
Startevant Co P A Addison Ill
Suckle Electronics 22 & Hayes Camden 5 NJ
Summers Gyroscope Co 2328 Bdw Santa Monica Calif
Summit Cell Co 4 Claremont Rd Bernardsville NJ
Summit Eng'g 3324 Main St Hartford Conn
Sun Chemical 113 E Centre Natley 10 NJ
Sun Dial P O Box 326 Caldwell NJ
Sun Electric Harlem & Avondale Chicago 31 Ill
Sunrise Prods P O Box 173 Hawthorne NJ
Super Electric Prods 46 Oliver St Newark NJ
Super Electronics Corp 1057 Summit Ave Jersey City NJ
Super Flow Solder 90 State Albany NY
Suporex Electronics 23 Atherton Yonkers NY
Superior Electric 83 Laurel Bristol Conn
Superior Eng'g 2500 Gurmantown Norristown Pa
Superior Fluo Graphite Co 33 S Clark St Chicago 3 Ill
Superior Flux 1302 Ontario Cleveland 13 Ohio
Superior Instruments 227 Fulton New York 7 NY
Superior Rectifier & Mfg 3000 Kenwood Hammond Ind
Superior Sealrite & Ceramic 32-49 Gale Ave LI City 1 NY
Superior Tube P O Box 191 Norristown Pa
Suprema Inc Greenwood Miss
Suprema Publications 3727 W 13 Chicago 23 Ill
Suprema Wire & Cable 1370 Ralph Ave Brooklyn NY
Suprenant Mfg 199 Wash Boston 8 Mass
Sutton Electronic 426 W Short Lexington Ky
Swartout Co 18511 Euclid Cleveland 12 Ohio
S&W Electronics 3418 W Pico Blvd Los Angeles Calif
Swift & Sons 10 Love Lane Hartford 1 Conn
Swiss Jewel Lafayette Bldg Phila 6 Pa
Switchcraft Inc 1334 N Halsted Chicago Ill
Switzer Bros 4732 St Clair Cleveland 3 Ohio
Sylvania Electric Radio-TV Div 254 Rano Buffalo NY
Sylvania Electric Prods 1740 Bdw New York 19 NY
 Vice Pres—A L Chapman
 Vice Pres Sales—B K Wickstrum
 Gen Sales Mgr Electronic Products—D W Gunn
 Mgr Equipment Sales—W O Spink
 Mgr Renewal Sales—H H Rainier
 Chicago—L A Wheelock DSM Equipment Sales E B McVoy Regional Mgr Renewal Sales
 Cincinnati—J T Mollen DSM Equipment Sales D F King DSM Parts Division
 Los Angeles—F E Gilbert Jr DSM Equipment Sales W G Patterson Regional Mgr Renewal Sales
 Teterboro N J—L S Raynor DSM Equipment Sales G C Isham Regional Mgr Renewal Sales
 Towanda Pa—Tungsten & Chemical Division R Beatty Gen'l Sales Mgr
 Warren Pa—Parts Division P M Pritchard Gen'l Sales Mgr
 Waburn Mass—Electronics Division E H Ulm Sales Mgr
Symphonic Radio & Elec 160 Wash St N Boston 14 Mass
Symphony Radio-TV 925 S Western Los Angeles 6 Calif
Synchromatic Productions 766 Bdw Bayonne NJ
Synchro-Start Products 8151 N Ridgeway Ave Skokie Ill
Syntron Prods 26 Irving Ct Malden 48 Mass
Synthane Corp Oaks Pa
Syntron Co 241 Lexington Homer City Pa
Syntroline Instruments 100 Industrial Addison Ill
Syracuse Ornamental Co 581 S Clifton St Syracuse NY

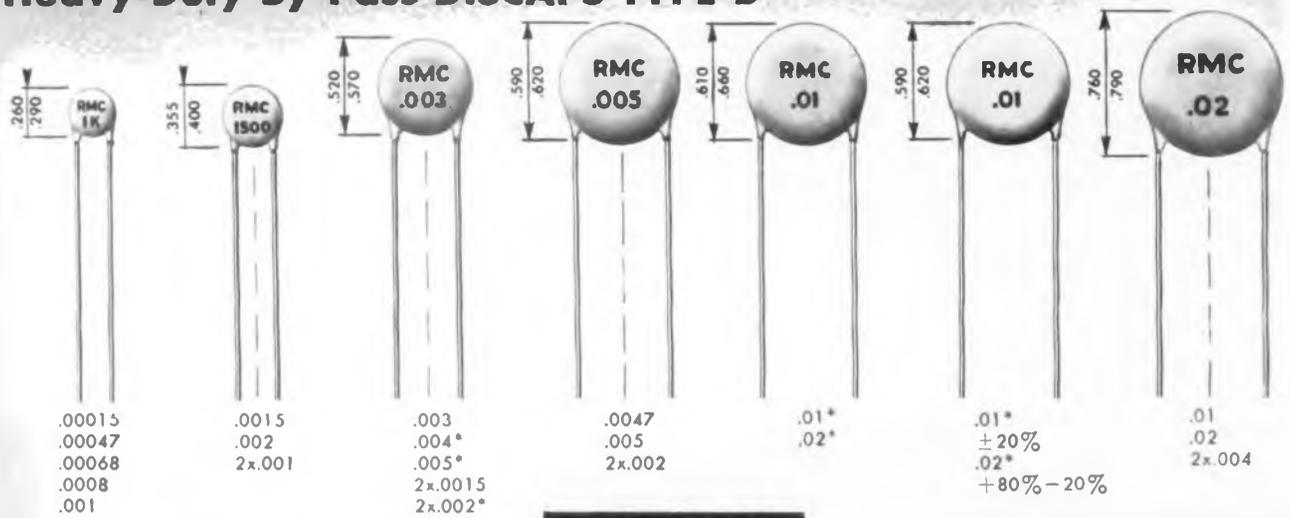
Tablet Mfg 1336 Ballentine Blvd Norfolk 10 Va
 Taco West 525 N Noble Chicago 22 Ill
 Takk Corp Newark Ohio
 Talk-A-Phone 1512 S Pelushi Chicago 23 Ill
 Talking Devices 4447 Irving Pl Chicago 41 Ill
 Talk-O-Products, 42 Allen St Rochester 6 NY
 Tally Register 5300 14 NW Seattle 7 Wash
 Tape Master 13 W Hubbard Chicago 22 Ill
 Tape Recording Apparatus Box 218 Scotch Plains N J
 Tartak Electronics 2979 N Ontario Burbank Calif
 Tarzian Inc Sashes Bloomington Ind
 Taylor Equip 120 Greenwich St New York NY
 Taylorcraft Corp 3-33 Ratter St Rochester 6 NY
 Taylor Fibre Norristown Pa
 Taylor Tubes 2312 W Wabansia Chicago 47 Ill
 T-Bar-V Inc 5919 Hollywood Hollywood 28 Calif
 Tecca Corp 139 E 23 New York 10 NY
 Tech Apparatus Bldrs 109 Liberty New York NY
 Technical Appliance Corp 1 Taco St Sherburne N Y
 President—H H Brown
 Vice Pres Sales—Tore Lundahl
 Vice Pres Eng—Kendrick Lippitt
 Sales Pro Mgr—Fred R Voorhaar
 Credit Mgr—William H Resch
 Chairman of Board—Carl Goudy
 Purchasing Agent—Harold Sentel
 Boston-IDS—Stanley A Harris Co 318 Harvard St
 Longwood 6-6400
 Buffalo-IDS—Leonard D Allen Inc 128 Knox Ave
 Woodlawn 1500
 Chicago-IDS—American Mfrs Agency 208 N Wells St
 Randolph 6-6311
 Cincinnati-IDS—John O Olsen Co 4016 Diehl Ave
 Sycamore 1297
 Cleveland-IDS—John O Olsen Co 16201 Shaker Blvd
 Wyoming 1-2624
 Dallas-IDS—The Brunum Co P O Box 10204 River-
 side 4995
 Denver-IDS—Ronald G Bowen Co 447 Broadway
 Sherman 2501
 Detroit-IDS—R C Merchant 4829 Woodward Ave
 Temple 1-1677
 Greenboro-IDS—Atcheson & Adams P O Box 2158
 Phone 6838
 Kansas City-IDS—W E Fry & Co 406 N 34th St
 Jefferson 5236
 Los Angeles-IDS—Lee H Owens Co 2331 W Wash-
 ington Blvd Republic 0203
 Minneapolis-IDS—The Heimann Co 1711 Hawthorne
 Ave MAin 5457
 Nashville-IDS—E F Scott Atcheson & Adams P O
 Box 157
 New York-IDS—Cliff Landis Co 81-11 Roosevelt Ave
 Illinois 8-7900
 Philadelphia-IDS—Samuel K Macdonald Inc 1531
 Spruce St Kingsley 5-1205
 Pittsburgh-IDS—John O Olsen Co 2046 Brookfield
 Drive Bradeville 0803
 San Francisco-IDS—David H Ross Co 534 El Camino
 Real Lytel 1-8224
 Seattle-IDS—James J Backer Co 2321 Second Ave
 MAin 881
 Syracuse-IDS—Leonard D Allen Inc 2401 S State St
 Phone 4-4195
 Toronto-IDS—Hackbusch Electronics Ltd 23 Primrose
 Ave MElrose 7453
 Washington-IDS—Samuel K Macdonald Inc 217 Riata
 Bank Bldg 3308 14th St NW Columbia 5-3938
 Tech Assoc 129 W 52 St New York 19 NY
 Tech Labs Palisades Park NJ
 Tech-Master Prods 443 Bway New York 13 NY
 Tech Materiel Corp 700 Fenimore Rd Mamaroneck NY
 Tech Operations 6 Schoeler Arlington Mass
 Tech Prods 19 N Denlap Memphis 1 Tenn
 Technic Inc 39 Snow St Providence 3 R I
 Tech Tape Corp 177 St & Harlem River Bronx N Y
 Technicraft Lab Thomaston Conn
 Technicraft Co 1156 Commonwealth Boston 3-4 Mass
 Technifax Corp 276 High St Holyoke Mass
 Technitrol Engg 2751 N 4 Phila 33 Pa
 Technograph Printed Electronics Tarrytown NY
 Techno Instrument 6666 Lexington Los Angeles 38 Calif
 Technology Instrument Acton Mass
 Tech-Ohm Resistor 200-15 32nd Bayside NY
 Technon Co 254 Friend St Boston 14 Mass
 Tedford Crystal Lab 4126 Colerain Cincinnati Ohio
 Teiner Co R 134 Tremont Everett Mass
 Tektronix Inc PO Box 831 Portland 7 Ore
 TelAutograph Corp 16 W 61 St New York 23 NY
 Tele-A-Ray Enterprises Henderson Ky
 Tele-Beam Industries Napa Calif
 Tele-Broadcasters 158 E 56 St New York N Y
 Telechrome Inc 88 Morris Ave Amityville LI NY
 Telechron Dept Gen Electric Co Ashland Mass
 Tele-Clear Corp 185 N Wabash Chicago 60 Ill
 Telecom Inc 1019 Admiral Blvd Kansas City 6 Mo
 Telecomputing Corp 133 E Santa Anita Burbank Calif
 Telefoto Industries 35-16 37 St Long Island City NY
 Teletron Co 4019 Prospect Cleveland 3 Ohio
 Tele-Ex-Panel Prods Berwick Pa
 Telefax 5919 Hollywood Hollywood 28 Calif
 Tele King Corp 601 W 26 New York NY
 Telemarine Communications 3040 W 21 Brooklyn 24 NY
 Telemark Inc 100 Greyrock Pl Stamford Conn
 Tele-Matic Indust 1 Jerusalem Brooklyn 1 NY
 Telemetering Assoc 494C Pine Forest Dr Marietta Ga
 Telegarts of L I 241-21 Braddock Ave Bellerose 26 NY
 Telephonics Corp Park Ave Huntington NY
 Teleplex Corp 6233 Hollywood Hollywood 28 Calif
 Tele Plastics Co 202 Broadway Brooklyn 11 N Y
 Teleprinter Co 270 Park Ave New York NY
 Telegrip Radio 2559 W 21 Chicago 8 Ill
 Teleguide Engg Corp 99 Wall St New York NY
 Teleguide Engg Wilkes Barre Pa
 Telord Mfg 1440 Bway New York 18 NY
 Tele-Ray Tube 984 Saw Mill River Yonkers NY
 Teletewriter Corp 445 Fairfield Ave Stamford Conn

Telescreen Corp 36 Grove New Canaan Conn
 Teletran Corp Franklin Terapole Ramsey NJ
 Teletronics Labs 1835 W Rosecrans Gardena Calif
 Teletronics Lab 54 Kinkel Westbury L I NY
 Phone: Westbury 7-1027
 President—R S Marston
 CE—F Richards
 Sales Manager—W J Herrmann
 Albuquerque—Gerald B Miller Co 327 Wyoming S E
 Phone 5-6466 Covers Ariz-N Mex El Paso Co
 Atlanta—Murphy & Cata 1409 Peachtree N E
 EL 3020 Covers Tenn N C S C Ala-Ga-Fla-Miss
 Belmont—Gerald B Miller Co 1334 Old Country
 Rd Cal IYell 1-3438 Covers N Cal-N Nev
 Boston—Technical Services Co 150 Causeway CA
 7-9797 Covers Me NH Vt Mass-RI Conn
 Chicago—Loren F Green & Assoc 4949 W Diversey
 Ave NAional 2-2370 Covers Ill-Ind-Wisc-Daven-
 port-Dubuque-Burlington
 Cleveland—Satullo Co Fidelity Bldg PProspect 1-1552
 Covers W Pa-E Ohio
 Hollywood—Gerald B Miller Co 1550 N Highland
 Ave HO 9-6305 Covers S Cal-S Nev
 New York—Frohman Co 33 W 42 St BRyant 9-1296
 Covers all export except Microdrill
 Rochester—Edward A Ossman & Assoc 3 Juniper
 CULver 7640 Covers NY No of W chester
 Roseland N J—Gawler-Knoop Co 178 Eagle Rock
 CA 6-4545 Covers NY City-W chester LI No NJ
 Royal Oak Mich—Satullo Co 4512 N Woodward
 JO 6-2375 or LI 9-3910 Covers W Ohio Mich
 Saratoga Springs—Edward A Ossman & Assoc Inc
 65 Webster St SChenectady 6-5428
 Seattle—Gerald B Miller Co 101 King County Air-
 port LA 3320 Covers Wash-Ore-Ida W Mont
 Silver Spring Md—Gawler-Knoop Co 901 Pershing
 Dr JUniper 5-7640 Covers Va-Wash DC Md
 Wyncote Pa—Gawler-Knoop Co 835 Glenside Ave
 Livingston 8-5480 Covers E Pa-So NJ
 Computing Devices of Canada Ltd 487 Cambridge
 St Ottawa Ont Phone 8-2001
 Telex Co Box 101 Riverdale Sta New York 71 N Y
 Telexo Corp 1415 W Golf Rd Des Plaines Ill
 Telexo Specialty 350 W 31 New York 1 NY
 Tele-Voo Towers Erskine Minn
 Tele-Wand 1022 18 St NW Washington DC
 Telewave Labs 100 Metropolitan Brooklyn 11 NY
 Telex Inc 1633 Euclid St Paul 1 Minn
 Tel-Instrument Co 728 Garden St Carlstadt N J
 Telkor Inc Telegraph Rd Elyria Ohio
 Tel-O-Mount Electronics 236 Marshall St Paterson NJ
 Telonia Industries 444 S Rural Indianapolis 1 Ind
 Tel-O-Tabo Corp 180 Van Riper E Paterson NJ
 Tel-Rad Mfg 7 Madison Fennimore Wisc
 Telrex Inc Neptune Hwy Asbury Park NJ
 Tempel Mfg 1939 Bryn Mawr Chicago 26 Ill
 Tempil Corp 11 W 25 New York 11 NY
 Tempo TV Mfg 100 Prospect Ave Burbank Calif
 Tennafab Quincy Ill
 Tennessee Eastman Co Kingsport Tenn
 Tenney Eng'g Inc 1090 Springfield Rd Union N J
 Tensitron Inc Pin Hill Harvard Mass
 Tensolite Insulated Wire 198 Main Tarrytown NY
 New York-New England-Northern New Jersey-
 Holiday-Hathaway Inc 270 Park Ave New York
 MUrray Hill 8-5858
 Cambridge Mass—Holiday-Hathaway Inc 238 Main
 St Eliot 4-1751
 Southern NJ—Eastern Pa Del-Md-Va-Dist Col—Mas-
 sey Associates 1 Thomas Circle NW Washing-
 ton DC NAional 8-1957 Philadelphia—Massey
 Associates 529 Brookhurst Ave Narberth MO-
 hawk 4-4200
 Minnesota-Wisconsin—E A Dickinson & Assoc 744 N
 Fourth St Milwaukee BRoadway 2-0517
 Ark-Lo Okla Texas—Edward F Aymond & Co 4312
 Maple Ave Dallas LOgan 5234 Tulsa—Edward
 F Aymond & Co 730 N Evanston St TUlso
 9-3241
 Wash-Ore-Western Idaho-Montana—M E Widde-
 kind 216 First Ave North Seattle—Eliot 6981
 Calif-Ariz-N Mexico—G S Marshall Co 40 S Los
 Robles Pasadena RYon 1-8345
 Ill-Iowa-Ind-Michigan—Caine Sales Co 3020 N
 Cicero Ave Chicago Spring 7-4022
 Ohio-W Pennsylvania-Kentucky—Engineering Special-
 ties 7706 Shawnee Run Road Maderia Ohio
 LOcust 6803
 Missouri-Kansas—Engineering Services Co 6635 Del-
 mar Blvd St Louis 5 Mo VOLunteer 3-3661
 Canada—Aeromotive Engineering Prod 5257 Queen
 Mary Rd Montreal Quebec
 Tensor Electric Devel 343 Classon Brooklyn 13 NY
 Terado Co 1068 Raymond St Paul 14 Minn
 Terpening Co LH 16 W 61 New York 23 NY
 Tetrad Co 62 St Mary Yonkers NY
 Texas Industrial Film M & M Bldg Houston 2 Texas
 Texas Instruments 6000 Lemmon Dallas Texas
 Texttronix Inc P O Box 831 Portland 7 Ore
 Ther Elec Mach Wks 13 S Jefferson Chicago Ill
 Thermador Electrical Mfg 2000 S Camfield Los Angeles 22
 Thermal Syndicate 14 Bixley Heath Lyndbrook NY
 Thermo Elec Mfg 465 Huff Dubuque Iowa
 Thermo Instruments 1310 Old County Rd Belmont Calif
 Thomas & Betts Co 36 Butler St Elizabeth 1 N J
 Thomas Electronic 118 9th Passaic NJ
 Thomas Mold & Die Weoster Ohio
 Thomas & Skinner 1120 E 23 Indianapolis Ind
 Thomas & Sons R Lisbon Ohio
 Thomas & Sons Wm 91 Pearl Brooklyn 1 NY
 Thompson-Bremer 520 N Dearborn St Chicago 10 Ill
 Thompson Corp G S S Pasadena Calif
 Thompson & Assoc JE 7210 S Yates Ave Chicago 49 Ill
 Thompson Clock Co HC 38 Federal Bristol Conn
 Thompson Co M I 1733 Cordova Los Angeles 7 Calif
 Thompson Prods 2196 Clarkwood Cleveland 3 Ohio
 Thor Ceramics 225 Bellville Bloomfield NJ
 Thordarson-Walmsler Mfg Mt Carmel Ill
 Thor Transformer 750 San Antonio Rd Palo Alto Calif

Three Dimension Co 3512 N Kostner Chicago 41 Ill
 Thwing-Albert Instrument Penn & Palaski Phila 4-4 Pa
 Tibbotts Industries Camden Maine
 Tigerman Engg 4332 N Western Chicago 18 Ill
 Time-O-Matic Co 1106 Bahis St Danville Ill
 Times Facsimile 540 W 58 New York 19 NY
 Stenafax Div—K E Clough The Baltimore Arcade
 Madison Ave at 43 St New York 17 NY MUrray
 Hill 3-2930
 Washington DC 80—J M McIsaac Times Facsimile
 Corp 1523 L St NW STeeling 3-9030
 Albuquerque R—Paul O Burk Co 503 S 2nd St Phone
 3-4416
 Brookline Mass R—Stanley A Harris Co 318 Harvard
 St Longwood 6-6400
 New York R—Lester Reiss 200 East End Ave SAcr-
 amento 2-4479
 R—Representatives for Top Hat tube retainers only
 Timetrol Co 2919 Gladstone Rockford Ill
 Tinker & Raser PO Box 281 San Gabriel Calif
 Tinnerman Prods PO Box 6688 Cleveland 1 Ohio
 Titanium Alloy 111 Bway New York 6 NY
 TitanBox Inc 500 Frelinghysen Newark NJ
 T J Mfg Corp 1020 S Josephine St Martinsville Ind
 TLG Electric 31 W 27 New York 1 NY
 Todd Products Co 156 Gramatan Ave Mt Vernon N Y
 Todd-Tran Corp 156 Gramatan Mt Vernon NY
 Toolco Inc B J 130 New Ave Plainfield NJ
 Tomam B Co E 8700 W 47th St Lyons Ill
 Tone Products 221 W 17 St New York 11 NY
 Ton-Tox Corp 247 Pearl St NW Grand Rapids 2 Mich
 Toplight Tape 116 E Market York Pa
 Torit Mfg 292 Walnut St Mt Vernon NY
 Torck Clock 1 Grove St Mt Vernon NY
 Toragran Co C W 236 Pearl Somerville 45 Mass
 Torocell Co 1374 Mobile St Logo 10 Mo
 Torvion Balance Manhasan St Clifton NJ
 Torvion Electronics 967 Frelinghysen Newark 5 NJ
 Tower Construction 1923 Geneva Sioux City Iowa
 Tower Productions 1540 N Highland Hollywood Calif
 Towers Corp 3332 E 53 Cleveland 27 Ohio
 Toys & Specialties Mfrs 622 W Kinzie Chicago 10 Ill
 Tractor Lab 130 High Boston 10 Mass
 Trad TV Corp 1001 1 Ave Asbury Park NJ
 Trans-Amer Prec Gear 34-17 Lawrence Flushing NY
 Transalber Co 172 Green Boston 30 Mass
 Transalberic Mfg Hopewell Rd Oxford Pa
 TransAlm Inc 35 W 45 New York 19 NY
 Transformer & Electronic 3824 Terrace Philadelphia Pa
 Transformer Engrs 161 E Wood Pasadena 1 Calif
 Transformer Mfrs 850 W Calif Chicago 22 Ill
 Transformer Metal Prod 343 W 26 New York NY
 Transformer Specialty Co Bala Cynwyd Pa
 Transformer Technicians 2608 N Cicero Chicago 39 Ill
 Transformers Inc 532 North Endicott NY
 Trans-Col Products Manohavan LI NY
 Transcoil Corp 107 Grand New York 13 NY
 Transistor Products Snow & Union Boston 35 Mass
 Transit Radio Union Trust Bldg Cincinnati 2 Ohio
 Transltron Electronic 403 Main Melrose Mass
 Transltron Inc 154 Spring St New York 12 NY
 Translite Electronics 5720 W Armitage Chicago Ill
 Trans-Lux Corp 1270 E 6 Ave New York 20 NY
 Transmitter Equip Mfg 35 Ryerson St Brooklyn 5 N Y
 Transradio Ltd 138A Cromwell London S W 7 England
 Trans-Sonics Inc Bedford Mass
 Transvision Inc 460 North New Rochelle NY
 Traveco Eng'g Co 85-15 139 St Briarwood L I N Y
 Trav-Lar Radio 571 W Jackson Chicago Ill
 Trebor Radio Co Box 487 Sun Valley Calif
 Trenton Transformer 822 E State Trenton 4 NJ
 Tresee 3824 Terrace St Philadelphia 28 Pa
 Gen Mgr & Sales Mgr—Edward J Fisher
 Chief Engineer—Sol Grossman
 Handling Govt Sales—John Zamoiski
 Representatives
 Hillsdale NJ-R—O P Marchand 274 Pleasant Ave
 Phone Westwood 5-4136 Covers NY State &
 North Jersey
 York Pa-R—John Feder H-4 Country Club Manar
 York 8-4448 Covers Baltimore-Washington-
 Eastern Pa except for metropolitan Philadelphia
 Triad Portable Cam 310 W Lincoln Mt Vernon NY
 Triad Transformer 4055 Redwood Venice Calif
 Triax Foss 2948 N 5 Milwaukee 12 Wis
 Tricon Mfg 8008 Wallace Chicago 2 Ill
 Silver Brazing Alloys
 Electrical Contact Points
 Partner—W R Grandje
 Partner—B J Boedeker
 Sales & Eng—T R Bordeker
 Michigan-R—Quint-Alloy Corp 24141 Ann Arbor Trail
 Dearborn Mich LOgan 5-2600
 Tricraft Prods 1535 N Ashland Chicago 22 Ill
 Tri-Box Co PO Box 1207 Lindsay Calif
 Tri-Kris Co Walnut & Cleveland Landale Pa
 Triltech Co J D 1310 McKinney Houston Tex
 Trim Inc Libertyville Ill
 Trio Laboratories P O Box 143 Wantagh L I N Y
 Trio Mfg Co Griggsville Ill
 Trion Inc 1000 Island MaKwa Rocks Pa
 Triglott & Barton PO Box 3128 Burbank Calif
 Triplott Electrical Instr Harmon Rd Bluffton Ohio
 Tri-State Plastics 5509 Lincoln Chicago 25 Ill
 Triumph Mfg 913 W Van Buren Chicago 18 Ill
 Triwax Transformer 3261-63 N Milwaukee Chicago 18 Ill
 Trojan Electronics 3706 N Halsted St Chicago Ill
 Tra-Connector Corp 416 Union St Lynn Mass
 Trumbull Electric Dept Con' Electric Plainville Conn
 Tra-Ohm Prods 2800 Milwaukee Ave Chicago 18 Ill
 Trusean Steel Dir Republic Steel Youngstown 1 Ohio
 Trutone Electronic Eng 812 N Highland Los Angeles 38

Listings Cont. on p. 344

Heavy-Duty By-Pass DISCAPS TYPE B



SPECIFICATIONS

*Rated 600 V.D.C. W. Flash test 1200 V.D.C.

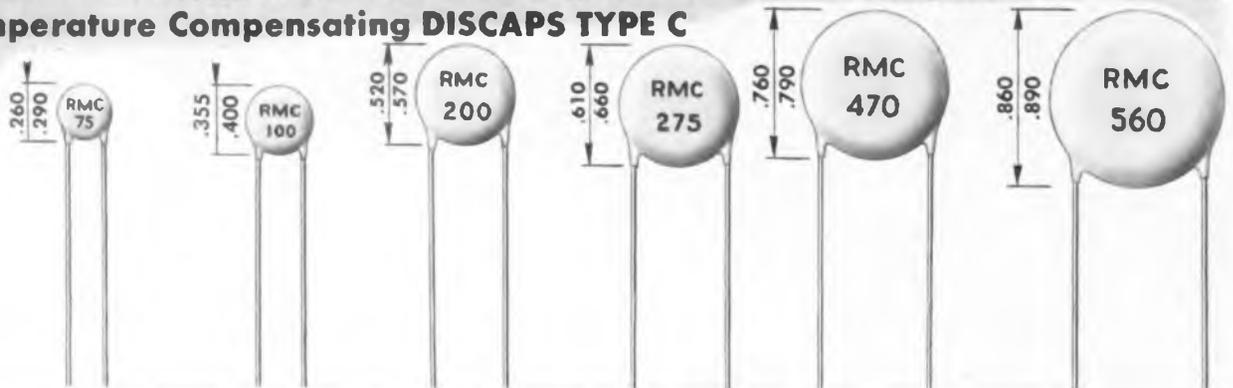
GMV TYPE

POWER FACTOR: 1.5% Max. @ 1 KC (initial)
POWER FACTOR: 2.5% Max. @ 1 KC (after humidity)
WORKING VOLTAGE: 1000 V.D.C.
TEST VOLTAGE (FLASH): 2000 V.D.C.
LEADS: No. 22 tinned copper (.026 dia.)

INSULATION: Durez phenolic—vacuum waxed
INITIAL LEAKAGE RESISTANCE: Guaranteed higher than 7500 megohms
AFTER HUMIDITY LEAKAGE RESISTANCE: Guaranteed higher than 1000 megohms

RMC DISCAPS

Temperature Compensating DISCAPS TYPE C



TC	1/4 Dia.	5/16 Dia.	1/2 Dia.	5/8 Dia.	3/4 Dia.	7/8 Dia.
P-100	1- 3 MMF	4- 9 MMF	10- 20 MMF	—	—	—
NPO	2- 12	13- 27	28- 47	48- 62 MMF	63-100 MMF	101-150 MMF
N- 33	2- 12	13- 27	28- 47	48- 62	63-100	101-150
N- 75	2- 15	16- 27	28- 56	57- 68	69-110	111-150
N- 150	2- 15	16- 30	31- 60	61- 75	76-140	141-150
N- 220	3- 15	16- 30	31- 75	76- 90	91-130	131-190
N- 330	3- 15	16- 30	31- 75	76-100	101-150	151-190
N- 470	3- 20	21- 40	41- 80	81-120	121-200	201-240
N- 750	5- 25	26- 56	57-150	151-180	181-300	301-350
N-1500	15- 50	51-100	101-200	201-250	251-330	331-560
N-2200	47- 75	76-120	121-200	201-275	276-470	471-560

SPECIFICATIONS

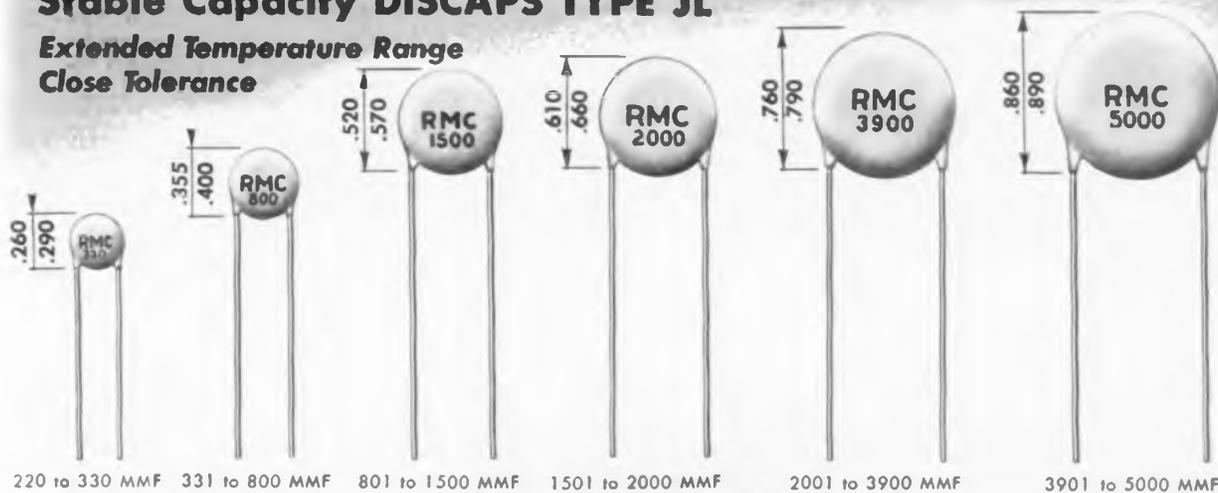
Temperature coefficients up to N-5200 available on special order.

POWER FACTOR: Over 10 MMF less than .1% at 1 megacycle. Under 10 MMF less than .2% at 1 megacycle.
WORKING VOLTAGE: 1000 V.D.C.
TEST VOLTAGE (FLASH): 1750 V.D.C.
CODING: Capacity, tolerance and TC stamped on disc
INSULATION: Durez phenolic—vacuum waxed

INITIAL LEAKAGE RESISTANCE: Guaranteed higher than 7500 megohms
AFTER HUMIDITY LEAKAGE RESISTANCE: Guaranteed higher than 1000 megohms
LEADS: No. 22 tinned copper (.026 dia.)
TOLERANCES: ±5% ±10% ±20%
These capacitors conform to the RTMA specification for Class 1 ceramic condensers. The capacity of these condensers will not change under voltage.

Stable Capacity DISCAPS TYPE JL

Extended Temperature Range
Close Tolerance



SPECIFICATIONS

POWER FACTOR: 1% max. @ 1 K C (initial)
POWER FACTOR: 2.5% max. @ 1 K C, after humidity
WORKING VOLTAGE: 1000 V.D.C.
TEST VOLTAGE (FLASH): 2000 V.D.C.
LEADS: No. 22 tinned copper (.026 dia.)

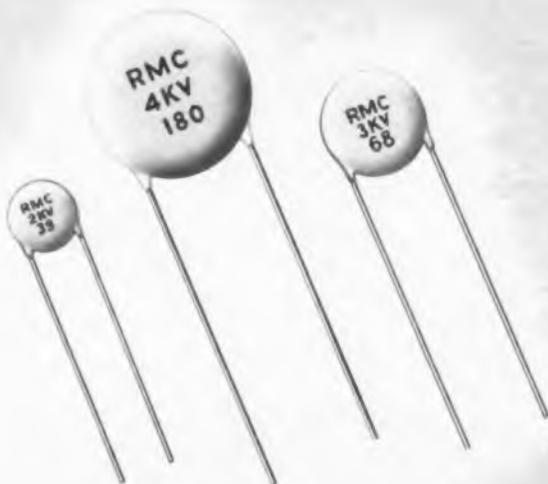
INSULATION: Durez phenolic—vacuum waxed
INITIAL LEAKAGE RESISTANCE: Guaranteed higher than 7500 megohms
AFTER HUMIDITY LEAKAGE RESISTANCE: Guaranteed higher than 1000 megohms

CAPACITY TOLERANCE: $\pm 10\%$ $\pm 20\%$ at 25° C

...the **MONEY SAVING** Replacement
for Mica and Tubular Ceramic Condensers

HIGH VOLTAGE DISCAPS

for yoke and other applications



SPECIFICATIONS

POWER FACTOR: .1% Max. @ 1 M C (initial)
POWER FACTOR: 2.5% Max. @ 1 M C, after humidity
WORKING VOLTAGE: 2000, 3000, 4000, 5000, 6000 V.D.C.
TEST VOLTAGE: 4000, 6000, 8000, 10,000, 12,000 V.D.C.
LEADS: No. 22 tinned copper (.026 dia.)
INSULATION: Durez phenolic—vacuum waxed
INITIAL RESISTANCE: Guaranteed higher than 7500 megohms
AFTER HUMIDITY LEAKAGE RESISTANCE: Guaranteed higher than 1000 megohms
TOLERANCES: $\pm 5\%$ $\pm 10\%$ $\pm 20\%$

Now available in any capacity between 5 MMF and 330 MMF

DISCAP
CERAMIC
CAPACITORS



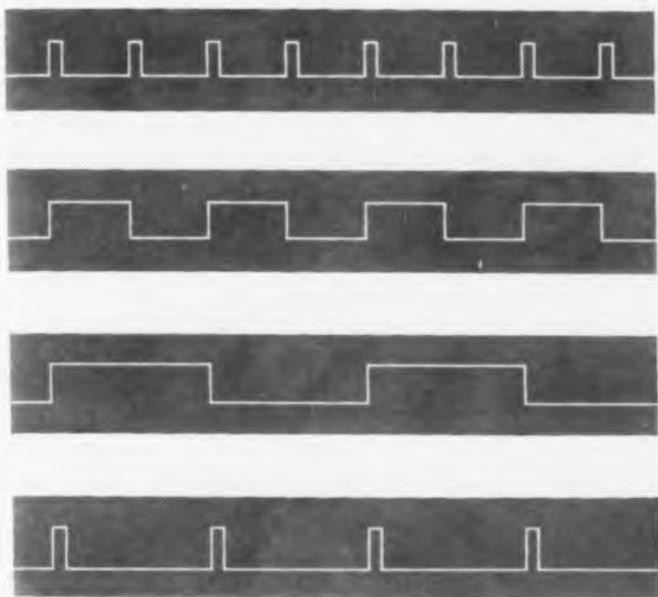
RADIO MATERIALS CORPORATION
GENERAL OFFICE: 3325 N. California Ave., Chicago 18, Ill.

FACTORIES AT CHICAGO, ILL. AND ATTICA, IND.
DISTRIBUTORS: Contact Jobbers Sales Co., P. O. Box 695, Fairlawn, N. J.

ALPHABETICAL LISTING of MANUFACTURERS with LOCALIZER INDEX

- Ira-Tronics Mfg 731 W Washington St Chicago 6 Ill
 Trylon Radio Labs 1136 N American Philadelphia Pa
 Tube Socket Corp 60 Clifton Blvd Clifton NJ
 Tudor Products 57 E Alpine St Newark 5 NJ
 Tung-Sol Electric 95 E Ave Newark 4 NJ
 Turner Co 909 17 N E Cedar Rapids Iowa
 Tuttle & Kift 1823 N Monitor St Chicago 39 Ill
 TV Associates E Mich Mich City Ind
 TV Center Inc 42 & Lexington New York NY
 TV of America 1 Azereles Dr Malibu Calif
 TV Co of America 192 Lexington Ave New York NY
 TV Development 2024 McDonald Brooklyn 23 NY
 TV Equip Corp 238 William St New York 7 NY
 TV Labs 5045 W Lake Chicago 44 Ill
 TV Products 1147 N McCadden Pl Hollywood 38 Calif
 TV Products 145-68 228 St Springfield Gardens N Y
 TV Remote Control 820 N Fairfax Ave Los Angeles Calif
 TV Specialty 350 W 31 New York 1 NY
 TV Utilites 1315 Jericho Tpk New Hyde Park LI NY
 TV Zoomar 500 S Ave New York 36 NY
 Tyniswitch Div Sessions Clock Forestville Conn
- Ucineto Co Div United-Carr Fastner Newtonville Mass
 UHF Resonator 224 7 St Racine Wis
 Ulmet Co Co 413 Market Newark 5 NJ
 Ul-Rad Inc St Joseph Mich
 Ultradyns Engg Labs PO Box 8007 Albuquerque N Mex
 Ultra Electroforming 110 Cedar Ave Pitman 15 N J
 Ultrasonic Corp 61 Rogers Cambridge 42 Mass
 Ultrasonic Eng'g PO Box 46 Maywood Ill
 Ultra-Violet Prods 145 Pasadena Ave S Pasadena Calif
 U M & F Mfg 10929 Van Owen St N Hollywood Calif
 North Hollywood Calif R—Ealy & Hastings 4440
 Lanekshim Blvd P O Box 264
 S San Francisco Calif R—Bill Kolons Co 101 San
 Felipe Ave
 Portland 4 Oregon R—Dale G Weber 234 Sherlock
 Building
 Denver 20 Colorado R—McCloud & Raymond 5528
 East Colfax Ave
 Dallas 2 Texas R—The Ernest L Wilks Co 1212
 Camp St
 Kansas City 8 Missouri R—H A Roes & Co 2601
 Cherry
 Chicago 31 Illinois R—Ellinger Sales Corp 6540
 Northwest Highway
 Detroit 19 Michigan R—Ken Burcow 222128 Grand
 River Ave Suite 207
 Cleveland 15 Ohio R—Edwards-Lohse & Co 2123
 East 9th St Rm 510
 Atlanta 5 Georgia R—Murphy & Cota 1409 Peach-
 tree St NE
 Ridgewood New Jersey R—Robert Finley 104 Brook-
 side Ave
 New York 7 New York R—Michael W Stallmock 277
 Broadway
 Cambridge 38 Massachusetts R—Dan Greene Post
 Office Box 124
 Minneapolis 16 Minnesota R—Fred B Hill Co 6110
 Excelsior Boulevard
 Vancouver B C Canada R—D Eldon McLennan 2191
 West First Ave
 Vedago Hobona Cuba R—Audion (Emilio Rodriguez)
 Calzada 164 Casi Esquina
 Toronto Ontario Canada R—Narris Burgess 211
 Church St
- Underwood Corp 35-10 36 Ave Long Island City 6 N Y
 Ungar Electric Tools 4101 Redwood Venice Calif
 Uniform Tubes Level Rd Collegeville 2 Pa
 Unimax Switch Div W L Maxson 460 E 34 New York 1
 Union Bay State Chemical Cambridge Mass
 Union Electric Prod 24 Edison Newark 2 NJ
 Union Plastics 1710 Paterson Plankroad Secaucus N J
 Union Spring & Mfg 1057 Summit Jersey City NJ
 Union Switch & Signal 1789 Braddock Pittsburgh Pa
 United-Carr Fastener 31 Ames Cambridge 42 Mass
 United Condenser 3400 Park Ave New York 56 NY
 United Electric Controls 85 School St Watertown 75 Mass
 United Electronic Mfg 542 39 St Union City N J
 United Electronics 42 Spring Newark 4 NJ
 United Mfg & Service 409 S 6 Milwaukee 4 Wis
 United Pressed Prods 741 W Harrison Chicago 7 Ill
 United Recording Labs 1650 Bduy New York 19 NY
 United Screw & Bolt 2513 W Callerton Chicago 8 Ill
 United Specialties 9705 Cottage Grove Chicago 28 Ill
 United Tech Labs Morristown NJ
 United Transformer 150 Varlek New York 13 NY
 United Wood Specialty Fall River Mass
 Unitek Corp 275 N Halstead Ave Pasadena 8 Calif
 Unity TV 1501 Bduy New York 36 NY
 Uni-Ventions 303 S Ave New York 16 NY
 Universal Aviation Equip 362 S Ave New York 1 NY
 Universal Broadcast Equip 184 N Franklin Chicago 6 Ill
 Universal Chain 92 Burnett Ave Maplewood NJ
 Universal Drafting Mach 7960 Lorain Cleveland 2 Ohio
 Universal Electric Co 300 E Main St Quosno Mich
 Universal Electronics 2012 S Sepulveda Los Angeles 25
 Universal General 365 Canal St New York NY
 Universal-Int'l Lanekshim Blvd Universal City Calif
 Universal Major Appl Lima Ohio
 Universal Match Corp Box 191 Ferguson 21 Mo
 Universal Mfg 410 Hillside Hillside NJ
 Universal Microphone 424 Warren Inglewood Calif
 Universal Microwave 380 Hillside Ave Hillside N J
 Universal Motor 465 Universal Dr Oshkosh Wis
 Universal Products Eng'g 4100 Taylor Racine Wis
 Universal Recorders 6757 Hollywood Hollywood 28 Calif
 Universal Record'g 140 W 57 New York 19 NY
 Universal Reels 9-10 37 Ave Long Island City NY
- Universal Scientific 1102 Shelby Vincennes Ind
 Universal Specialty PO Box 1892 Boston 5 Mass
 Universal Winding PO Box 1605 Providence 1 RI
 Universal X-Ray Prods 1140 N Western Ave Chicago 22 Ill
 University Loudspeakers 80 S Kensico White Plains NY
 President—Irving Golin
 Sales Mgr—Lawrence J Epstein
 Dir of Engineering—Sidney Levy
 Ch Engr—Saul J White
 Purchasing Agt—Seymour Blumenfeld
 Albuquerque R—Gates Co Harold L Poulson 110
 Harvard Dr SE
 Atlanta R—Hollingsworth & Still Whitehead Bldg
 Covers Ala-Flo-Ga-N&S Cor-E Tenn
 Chicago R—George Pettit Co 349 N Ashland Ave
 River Forest Ill Covers Ill
 Dallas R—Hal F Corry Co 3111 Knox St Covers
 Tex-Okla
 Detroit R—William S Lee 22128 Grand River Ave
 Suite 207 Covers Mich
 Evansville R—Wright Engineering Co James A. Ma-
 bry, 118 Kenmore Drive
 Fort Wayne R—Wright Engineering Co Burt Homsher
 2018 Jessie Ave
 Indianapolis R—Wright Engineering Co 4241 Mel-
 bourne Rd Covers Ind Ky
 Kansas City R—W E Fry & Co 406 W 34th St Covers
 Ia Kan Nebr-W Mo
 Los Angeles R—Marshank Sls Co 672 So Lafayette
 Park Pl Covers S Calif-Ariz Las Vegas Nev
 Memphis R—Cartwright & Bean 1336 Madison Ave
 Covers Ark Miss-La-W Tenn
 Minneapolis R—Heimann Co 1711 Hawthorne Ave
 Covers Minn-Wis-N&S Dak
 New Orleans R—Cartwright & Bean, Marion O Aime
 821 Pontalba St
 New York R—Blair Steinberg Sls Co 395 Broadway
 Covers NY-NJ Del-Md Va E Penn
 Pittsburgh R—Tanner & Cover 600 Grant St Covers
 W Penn-W Va
 Portland R—Don H Burcham Co 519 NW 19th Ave
 Covers Ore-Wash Alaska-Brit Col
 Salt Lake City R—Gates Co 200 S Main St Covers
 Colo Wyo-Mont N Mex-Idaho Utah
 San Francisco R—E L Berman Co 758 Natoma St
 Covers N Calif-Reno Nev
 Seattle R—R M Loughrey, 1327 Norcross Way
 Toronto R—John R Tilton 1166A Lakeshore Rd Long-
 branch Covers Canada
 Wellesley Hills Mass R—Michael Scott Co 90 Ed-
 munds Rd Covers Conn-Me-Mass-NH-RI-Vt
 Winnipeg R—John R Tilton C M Robinson Co 207
 Scott Block
- Univox Corp 102 Warren New York 7 N Y**
 Phone: WOrth 2-5630
 President—Albert L Rubenstein
 V P Sales—Richard Wiggins
 West Coast Mgr—A C Gerrish
 Los Angeles Plant—4301 W Jefferson Blvd Phone RE
 4-4163 specializing in extra low capacity
 coaxial cables
- Up-Right Inc 1013 Pardee St Berkeley 10 Calif**
 U S Components 454 E 148 St New York 55 N Y
 U S Electrical Motors 200 E Stanton Los Angeles 54 Calif
 U S Electronic 262 Cannon St New Haven 11 Conn
 U S Electronics 275 Warren Lyndhurst NJ
 U S Engineering 521 Commercial Glendale 3 Calif
 U S Gasket 602 N 10 Camden 1 NJ
 U S Gauge Clymer Ave Sellersville Pa
 U S Gypsum Co 300 W Adams St Chicago 6 Ill
 U S Instrument 409 Broad Summit NJ
 U S Motors Corp 420 Nebraska St Oshkosh Wis
 U S Plywood 55 W 44 St New York NY
 U S Radiam 535 Pearl New York 7 NY
 U S Record'g 1121 Vermont N W Washington 5 DC
 U S Relay Co 1744 Albion St Los Angeles 31 Calif
 U S Steel 436 7th Ave Pittsburgh Pa
 U S Stoneware Co Akron 9 Ohio
 U S Testing 1415 Park Hoboken NJ
 U S Time Corp 500 S Ave New York 36 N Y
 U S Tower Union Trust Bldg Petersburg Va
 U S TV Mfg 3 W 61 St New York NY
 U S Wire & Cable Progress & Monroe Union NJ
 Utah Radio Prods 1123 E Franklin Huntington Ind
 Utica Drop Forge & Tool Utica 4 NY
 Utilites Service Co #1 Pine St Allentown Pa
 Utility Electronics 231 Grant St E Newark NJ
 Vacolite Co 3003 N Henderson Dallas 6 Texas
 Vaco Prods 317 E Ontario Chicago 11 Ill
 Vacumet Inc 1009 W Wood St Chicago 22 Ill
 Vacuum-Electronic 86 Denton New Hyde Park LI NY
 Vacuum Metals 70 Memorial Cambridge Mass
 Vacuum Tube Prods 506 S Cleveland Oceanside Calif
 Valco Mfg 4700 W Walton Chicago 51 Ill
 Valentino Inc T J 150 W 46 St New York 36 NY
 Valite Corp Whitney Bldg New Orleans 12 La
 Valley Industries Inc P O Box 362 Algonquin Ill
 Vallores Jewel Co P O Box 958 Lancaster Pa
 Valpey Crystal 1244 Highland Holliston Mass
 Vapor Heating Corp 6420 W Howard St Chicago 31 Ill
 Valtronics Inc 242 Valley Dayton 4 Ohio
 Valverde Labs 252 Lafayette New York 12 NY
 Van Cleaf Bros 7800 S Woodlawn Chicago 19 Ill
 Van Dyke Instruments 1927 1 Ave S St Petersburg Fla
 Van Eps Lab R-2 Plainfield NJ
 Vanguard Electronics 3384 Meteor Los Angeles 34 Calif
 Van Roe Electronics 495 Kent Ave Brooklyn NY
 Vapor Recovery System 2820 N Alameda Compton Calif
 Varbox Corp 508 W Court Rmms NY
 Variable Condenser 63 Hope St Brooklyn NY
 Varian Associates 611 Hansen Way Palo Alto Calif
 Vari-Equip Co 35 Grove White Plains NY
 Vari-L Co PO Box 1433 Stamford Conn
- Vare Mfg 1801 Walnut Garland Tex**
Vector Electronics 3352 San Fernando Los Angeles Calif
Vectron Inc 400 Main Waltham 54 Mass
 Phone: Waltham 58700
 President—Fred H MacLeod
 VP & Treas—Harold D Adler
 Ch Elec Engr—Harvey Korp
 Ch Mech Engr—Roger T Coffey
 Ch Purch Agt—Oscar S Lightbody
 Sales Mgr—Stewart K Gibson
 Contract Sales—U Victor Turner
 Boston-SO—400 Main St Waltham 5-8700
 Dayton-R—Andrew N Grimm 1731 Ruskin Rd Oregon
 1496
- Vectron Commercial Test Instrument Section—**
 Microwave Spectrum Analyzer . . . Variable Fre-
 quency Generator . . . Crystal Controlled
 Transistor Oscillator etc
 Albuquerque R—Gates Co 122 Harvard Dr SE Albu-
 ququerque 3-8010
 Atlanta R—Bivins & Caldwell 267 East Paces Ferry
 Road NE Cherokee 7522
 Boston R—Technical Services Co 150 Causeway St
 Capitol 7-9797
 Buffalo (Kenmore) R—Edw A Ossmann & Asso Eugene
 A Snelling 60 Pullman Ave Rivers de 6613
 Chicago R—J L Cappsels & Assoc 1214 W Madison St
 Taylor 9-1818
 Cleveland R—S Sterling Co Harry Crows 13431 Ce-
 dar Rd Yellowstone 2-7849
 Detroit R—S Sterling Co 15310 W McNichols Rd
 Broadway 3-2900
 Fort Myers Fla R—Arthur H Lynch & Assoc PO Box
 466 Edison 5-6762
 High Point NC R—Bivins & Caldwell Security Bank
 Bldg High Point 3672
 Los Angeles R—J T Hill Sales Co 800 W 11th St
 Richmond 7-5384 (FAX)
 Menlo Park Calif R—C E Ault Assoc 625 Laurel Ave
 Davenport 5-4983
 New York City R—G C Engel & Assoc Edw P Nelson
 Rector 2 0091 New York City and Long Island
 Philadelphia R—G C Engel & Assoc John K Thomas
 PO Box 4383 Chestnut Hill 8-0892
 Ridgewood NJ R—G Curtis Engel & Assoc G Curtis
 Engel Chas D Berry PO Box 24 Gilbert 4-0878
 Rochester R—Edward A Ossmann & Assoc Inc 3
 Juniper St Culver 7640 WUX TWX
 Salt Lake City R—Gates Co 200 S Main St Salt Lake
 9-1101
 Saratoga Springs NY R—E A Ossmann & Assoc Don-
 ald W Fox 65 Webster St Schenectady 6-5428
 Seattle R—Ron Merrill Co 120 W Thomas St GAR-
 field 6644
 Syracuse R—E A Ossmann & Assoc Edw W Stone 308
 Merritt Ave Syracuse 9-3825
 Canada Toronto R—R O R Assoc Ltd 290 Lawrence
 Ave W ORchard 3003
 Export—Bendix International Attn S B Randolph 205
 E 42nd St Murray Hill 3-1100
- Vectron Precision Components Section—**
 Precision Wire-Wound Potentiometers etc
 Albuquerque R—C G Electronics Corp 305 Dallas St
 NE Albuquerque 6-6121
 Boston R—Technical Services Co 150 Causeway St
 Capitol 7-9797
 Chicago R—J L Cappsels & Assoc 1214 W Madison
 St Taylor 9-1818
 New York City R—G C Engel & Assoc Edw P Nelson
 Rector 2 0091 New York City and Long Island
 Philadelphia R—G C Engel & Assoc John K Thomas
 PO Box 4383 Chestnut Hill 8-0892
 Ridgewood NJ R—G Curtis Engel & Assoc G Curtis
 Engel Chas D Berry PO Box 24 Gilbert 4-0878
 Seattle R—Ron Merrill Co 120 W Thomas St GAR-
 field 6644
- Veeder-Root Inc 70 Sargeant Hartford 2 Conn**
Vemaline Products Co P O Box 222 Hawthorne 1 N J
Vendo Co 7400 E 12 St Kansas City 8 Mo
Verd-A-Ray Corp 615 Front St Toledo 5 Ohio
Vesta Co 1916 Clay N Kansas City Mo
Vibracore Corp 425 Bush St San Francisco 8 Calif
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 verter and choppers—research development and
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Vibroscope Co 6 E 39 St New York 16 NY
Vickers Electric Div 1835 Locust St Louis 3 Mo
Victor Animategraph PO Box 6000 Davenport Iowa
Victor Instrument 3800 Perkins Cleveland 14 Ohio
Victor Electric Prods 2950 Robertson Cincinnati 9 Ohio
Victor Electric Wire & Cable Clifton NJ
Victor Insulators Inc Maple Ave Victor N Y
Victorlite Industries 4117 W Jeff Los Angeles 16 Calif
Victory Engg Springfield Rd Union NJ
Victory Mfg 1722 N Arcade Pl Chicago 12 Ill
Vidairo Electronics 576 W Marlick Lynbrook NY
Video Accessory Mfg Co P O Box 223 Tulsa 10 Ohio
Video Anne 1821 Adams St Toledo Ohio
Video Corp of America 229 W 28 New York 1 NY
Videocraft Mfg 5720 W Armitage Ave Chicago 39 Ill
Video Electronic Lab 304 Rogers Rd Des Moines Iowa
Video Industries 42-46 Palmer Pt Chester NY
Video Electronic 902 E Michigan Indianapolis Ind
Video Products 42 West Red Bank NJ
Videx Inc 35-01 Queens Blvd Long Island City NY
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Listings Cont. on p. 346



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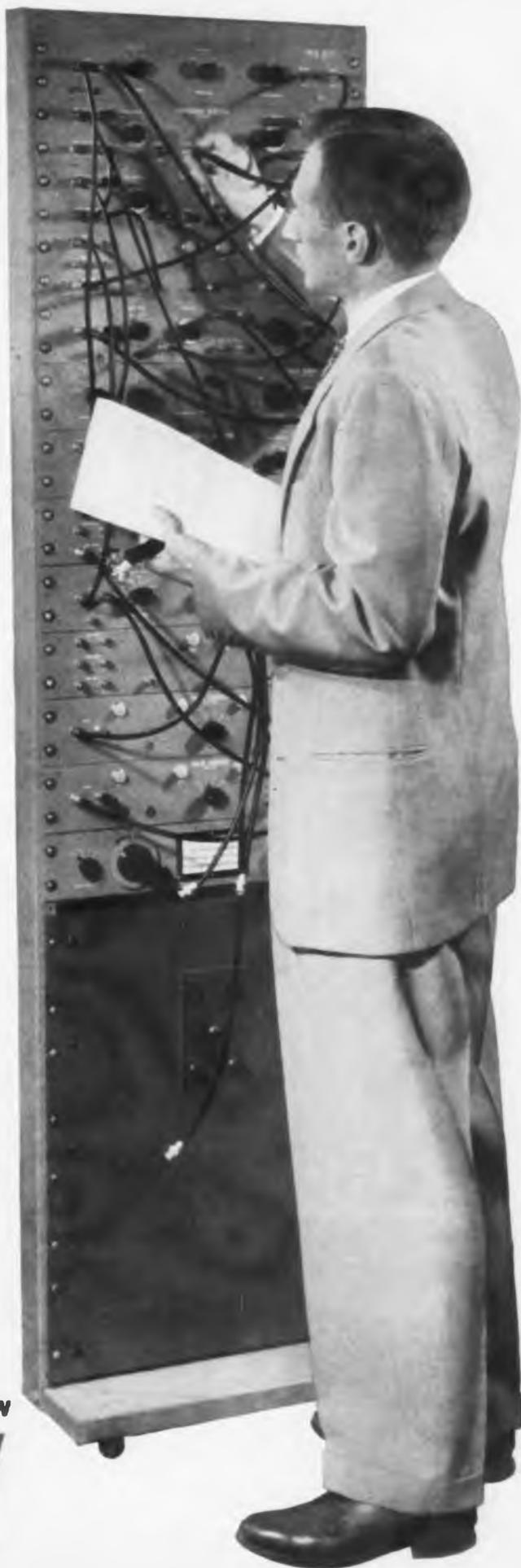
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<p>AIRTRON PRECISION CASTING FACILITIES Precision castings, holding tolerances of $\pm .002$" per inch of dimension, economically made to your own specifications. Bulletin 6002.</p>	<p>FLEXIBLE WAVEGUIDE Available in all sizes for high power pressurized applications over wide temperature ranges. Seamless, twistable, perforated and circular. Special waveguides to meet specific problems. Cat 1011.</p>	<p>TWO-POSITION WAVEGUIDE SWITCHES For rapid and/or cyclic switching to or from noise sources, signal generators, dummy loads, etc. Low VSWR, excellent crosstalk and high peak power performance. Cat. 2331.</p>
<p>SHORT SLOT HYBRIDS Precision cast one piece hybrids. Low VSWR, excellent isolation and low attenuation over broad bandwidths. Used in balanced mixers, duplexers, power splitters. Cat. 2361.</p>	<p>K-BAND TEST HORNS For test purposes over the frequency range from 12,400 to 40,000 mc. One piece aluminum castings to close tolerances. Low VSWR. Low secondary lobes. Cat. 3291.</p>	<p>WAVEGUIDE MAGIC TEES Hybrid junctions for power splitting with minimum energy loss. From 3.00 x 1.50 to all smaller standard and military sizes. Low VSWR and excellent broadband isolation. Cat. 3330.</p>

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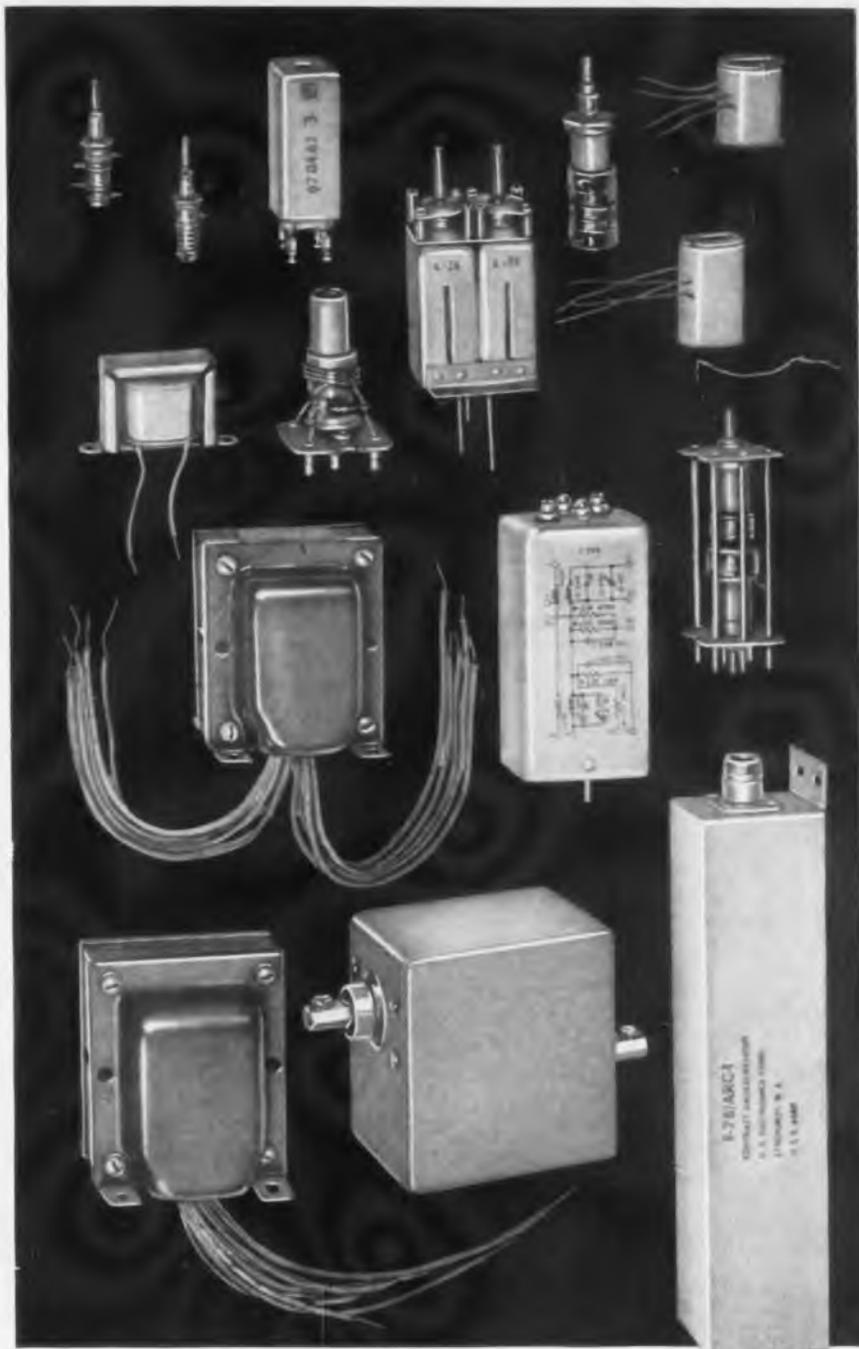
LOCALIZER LISTINGS (Cont.)

- Viking Tool 2 Main Belleville NJ
- Vincent Co AW 163 St Paul St Rochester 14 NY
- Vinson Co E R 1401 Middle Harbor Oakland 20 Calif
- Visart Inc 2634 Park New York 51 NY
- Vitramon Inc Box 544 Bridgeport 1 Conn
- Vitro Corp of America 120 Wall St New York 5 NY
- Vitroseal Corp 6325 Galliford Indianapolis 20 Ind
- V-M Corp 4th & Park Benton Harbor Mich
- Vocaline Co of America Coulter St Saybrook Conn
- Vocalite Screen 19 Devoise Roosevelt NY
- Voco Inc 33 34 St Brooklyn NY
- Vokar Corp Dexter Mich
- Volkers & Schaffer 1679 Broadway Schenectady NY
- Volkert Metal Stampings 222-34 96 Queens Village NY
- Vorac Co Rt 17 at Meadow Rd Rutherford NJ
- Voron & Co George 835 N 19 St Philadelphia 30 Pa
- Volcan Electric Co 88 Holton Danvers Mass
- Waage Electric 720 Colfax Kenilworth NJ
- Wabash Metal Products Co Box 305 Wabash Ind
- Wade Electric Prods 2000 Jacob Sturgis Mich
- Wagner Electric 6400 Plymouth Ave St Louis Mo
- Wakmann Watch 15 W 47 St New York 36 NY
- Waldes Kohlnoor 47-16 Austel Long Island City 1 NY
- Waldom Electronics 4625 W 53 Chicago 10 Ill
- Waldorf Instrument Corp Park Ave Huntington NY
- Walker Electric B 132 Nassau New York 7 NY
- Walker Co Geo 118 Amsterdam Ave Passaic NJ
- Walker-Turner 639 South Ave Plainfield NJ
- Walkirt Co 145 W Hazel Inglewood 3 Calif
- Wall Mfg Co P Erie St Grove City Pa
- Wallace Mfg Wm T Para Ind
- Wallace & Tiernan Belleville NJ
- Wallack & Associates 1532 Hillcrest Rd Cleveland 18 Ohio
- Walnut Machine 1525 S Walnut South Bend 14 Ind
- Walston Electronics 3225 Exposition Los Angeles Calif
- Walsor Automatic Timer 420 Lexington New York 17 NY
- Walter Co S 1400 Atlantic Brooklyn 16 NY
- Walsham Horological Corp 711 Broad St Lynn Mass
- Walsham Screw Co 77 Rumford Ave Waltham 54 Mass
- Wang Labs 296 Columbus Boston 16 Mass
- Wagler Inc 27-10 Astoria Blvd Long Island City NY
- Ward Co EM 8039 S Michigan Chicago 11 Ill
- Ward Leonard 115 MacQueen Pky S Mt Vernon NY
- Ward Products Div Gabriel Co Cleveland 15 Ohio
- Warren Corp J C 21 Hanse Ave Freeport NY
- Warren Plastics Corp Warren Pa
- Warren Wire Pawnee Vt
- Warrick Co C F 1964 W 11 Mile Rd Berkley Mich
- Warrick Co P 6732 Dixie Hwy Clarkston Mich
- Warwick Mfg 4640 W Harrison Chicago 44 Ill
- Washington Inst of Technology College Park Md
- Wassco Electric Prods 126 W Cass St Joliet Ill
- Wasserman Mfg 126 W Cass Joliet Ill
- Waterman Prods 2445 Emerald Phila 25 Pa
- Waters-Conley 501 1st Ave NW Rochester Minn
- Waters Mfg 4 Gordon Waltham 54 Mass
- Watertown Mfg 777 Echo Lake Rd Watertown Conn
- Waveforms Inc 333 6 Ave New York NY
- Waveline Inc Passale Ave Caldwell NY
- Weathers Industries 66 E Gloucester Barrington NJ
- Webber Mfg Co 2740 Madison Ave Indianapolis Ind
- Weber Co F 1220 Buttonwood St Phila 23 Pa
- Webster-Chicago 5610 W Bloomingdale Chicago 39 Ill
- Webster Electric 1900 Clark Racine Wis
- Webster Spring 176 Johnson St Brooklyn 1 NY
- Weckesser Co 5261 N Avondale Chicago 30 Ill
- Weinschel Eng's 10505 Metropolitan Kensington Md
- Weksler Thermometer 49 W 32 St New York 1 NY
- Welch Electric 1221 Waco Cincinnati Ohio
- Welch Mfg WM 1515 Sedgwick Chicago 10 Ill
- Welco Mfg Co 802 Washington St Burlington Iowa
- Weldex Inc 2200 W Fort St Detroit 16 Mich
- Welin Div 500 Market Perth Amboy NJ
- Weller Electric 808 Packer Easton Pa
- Wells B Co AH 181 E Aurora St Waterbury Conn
- Wells-Gardner 2701 N Kildare Chicago Ill
- Welltronic Co 19500 W 8 Mile Detroit 19 Mich
- Wen Products 5806 North West Hwy Chicago 31 Ill
- Wenzel Projector 2509 S State Chicago 16 Ill
- Wesbar Stamping Corp West Bend Wis
- Westberg Mfg 144 S Coombs Napa Calif
- West Coast Electrical 10008 S Main Los Angeles 3 Calif
- West Coast Electronics 5873 W Jeff Los Angeles 16 Calif
- Western Cali & Electrical 215 State Racine Wis
- Western Color-Graphics 39 SE Salmon Portland 14 Ore
- Western Electric 120 Broadway New York NY
- Western Electro-Acoustic Labs Beverly Hills Calif
- Western Electronic Enterprise Gardena Calif
- Western Felt 4029 Ogden Ave Chicago Ill
- Western Gear Works PO Box 182 Los Angeles Calif
- Western Gold & Platinum 589 Bryant San Francisco 7
- Western Instrument 826 N Victory Burbank Calif
- Western Insulated Wire 2425 E 39 St Vernon Calif
- Western International 45 Vesey New York NY
- Western Lithograph 600 E 2 St Los Angeles 54 Calif
- Western Mfg 1400 W 22 Kearney Neb
- Western Radiation Lab 1107 W 24 Los Angeles 7 Calif
- Western Sound & Electric 805 S 5 Milwaukee 4 Wis
- Westfield Metal Products Westfield Mass
- Westinghouse Electric PO Box 868 Pittsburgh 30 Pa
- Westinghouse Electric 2519 Wilkens Baltimore Md
- Westinghouse Electric Electronic Tube Div P O Box 284 Elmira NY
- VP—E W Ritter
- Gen Sales Mgr—J A Curtis
- Purchasing Agt—H D Hanofus
- Engineering Mgr—E A Lederer
- Equipment Sales Mgr—R F Roberts
- Renewal Sales Mgr—J J Doyle
- Govt Sales—R N Stoddard Asst to Sales Mgr
- Appl Eng Mgr—M Aron
- Customer Service—D J Harner
- Atlanta-IDS—A W Boon 1299 Northside Dr NW Atlanta 104

Westinghouse Electric (Continued)

Bloomfield NJ-IDS—W A Hayes . . . DS A Karman
 — IS J W Reed . . . SE J Crowley . . . Mac
 Arthur Ave Bloomfield 2-2700
 Boston-IDS—W E Cohan 10 High St Liberty 2-0600
 Charlotte-IDS—H A Loring 210 E Sixth St 6-6461
 Chicago-IDS—J G Thompson . . . IS E G Brierty
 — DS R E Warner . . . SE O Jaeger . . .
 Merchandise Mart Plaza Whitehall 4-3860
 Cincinnati-IDS—L Rice 207 W Third St Garfield
 2250
 Dallas-IDS—H E Goff 1232 Fidelity Union Bldg Rl
 5231
 Denver-IDS—F Simon PO Box 614
 Detroit-IDS—H Zimmerman 3757 Trumbull Ave TRin-
 nity 2-7010
 Elmira-IDS—M H Parker PO Box 784 Elmira 9-3611
 Los Angeles-IDS—G Sherman E F Larson 600 St
 Paul Ave MAdison 6-3881
 Minneapolis-IDS—E T DeBlock 2303 Kennedy St NE
 Granville 3545
 Philadelphia-IDS—R G Lyon 3001 Walnut St Ever-
 green 2-1200
 Pittsburgh-IDS—J R Fox 306 Fourth Ave Atlantic
 1-8400
 Providence-IDS—R E Richard 31 Empire St GAspee
 1-0818
 West Instrument Corp 525 N Noble St Chicago Ill
 Westline Electronics 11656 W Olympic Los Angeles Calif
 West Mich Sound 1932 Peck St Muskegon Mich
 Weston Electrical Inst 614 Frothinghysen Newark 5 NJ
 Weston Laboratories Harvard Mass
 Westrex Corp 111 8 Ave New York 11 NY
 Weymouth Instr 1440 Commercial E Weymouth 89 Mass
 Wheatland Tube Bankers Securities Bldg Philadelphia Pa
 Wheaton Co T C Millville NJ
 Wheelco Instruments Rockford Ill
 Wheeler Insulated Wire 150 E Aurora Waterbury Conn
 Wheeler Labs 122 Cutter Mill Great Neck NY
 Whistler & Sons S B 752 Military Buffalo 23 NY
 Whitaker Cable 1301 Burlington N Kansas City 16 Mo
 White Dental Mfg S S 10 E 40 New York NY
 White Industries 421 W 54 New York 19 NY
 White Instrument 203 Riverside Dr Austin 4 Texas
 White Rock Mfg White Beach SC
 White-Rodgers Electric 1209 Cass Ave St Louis 6 Mo
 White & Son J L 374 Verona Newark 4 NJ
 White & Sons W O 178 Atlantic Boston 10 Mass
 Whitehead Stamping 1663 W Lafayette Detroit 16 Mich
 White Tanning 421 W 54 St New York NY
 Whitney Blaha Co 1565 Dixwell New Haven 14 Conn
 Whitney Metal Tool 150 Forbes Rockford Ill
 Whitso Inc 9330 Byron Schiller Park Ill
 Whittington Pump 1126 Prospect Indianapolis 3 Ind
 Wickes Engg & Construction Co 12 & Ferry Camden NJ
 Wickwire Spencer Steel 575 Madison New York 22 NY
 Wiedemann Machine 4272 Wissahickon Phila 32 Pa
 Wiegand Co Edwin L 7500 Thomas Blvd Pittsburgh Pa
 Wilco Corp 546 Drovers St Indianapolis 21 Ind
 Wilcox Electric 1400 Chestnut Kansas City Mo
 Wilcox-Gay Corp 604 W Seminary St Charlotte Mich
 Wilcox Research 11122 Aqua Vista N Hollywood Calif
 Wildberg Bros Smelting 742 Market San Francisco Calif
 Wilder Mfg Mechanic & Erie RR Pt Jervis NY
 Willard Storage Battery 1220 Huron Cleveland Ohio
 Williams Brown & Earle 904 Chestnut Phila 7 Pa
 Williams & Co C K 640 N 13 Easton Pa
 Williams Screen 1674 Summit Lake Akron 7 Ohio
 Williams Recordg Service Ash 133 W 16 Lincoln 8 Nebr
 Williams Ship Radle 4366 Mentone San Diego 7 Calif
 Willson Camera 1401 Lawrence Havertown Pa
 Wilmar Mfg Co 2715 E 14th St Kansas City 27 Mo
 Wilmington Fibre PO Drawer 1028 Wilmington 99 Del
 Wilson & Co G C 1950 8th Ave Huntington W Va
 Wilson Co W A US Route 22 Union NJ
 Wilton Tool Mfg 925 W Wrightwood Chicago Ill
 Wincharger Corp E 7 & Division Sioux City Iowa
 Winchester Electronics 15 Crescent Glenbrook Conn
 Winchester Repeating Arms Div Olin Ind New Haven Conn
 Wind Turbine Co West Chester Pa
 Windsor Co 999 N Main Glen Elyn Ill
 Winegard Co 3000 Scotten Blvd Burlington Iowa
 Wingpower Mfg Newton Iowa
 Winslow Co 9 Liberty St Newark 5 NJ
 Winsted Div Hudson Wire Winsted Conn
 Wire Stripper 1725 Eastham E Cleveland 12 Ohio
 Wirt Co 5221 Greene St Philadelphia 4 Pa
 Wirtron Electronic Div Roberts Mfg Cleburne Texas
 Wisconsin Porcelain Sun Prairie Wise
 WMC Inc 1753 N Damen Chicago 47 Ill
 Wolfe Co F C 3644 Eastham Dr Colver City Calif
 Wollensak Optical 850 Hudson Rochester 21 NY
 Wood Counter Lab N 5491 Blackstone Chicago 15 Ill
 Woodall Industries 7569 E McNichols Detroit 34 Mich
 Woodbury Glass Co 34 Burnside Ave E Hartford 8 Conn
 Woodland Mfg 416 Woodland Ave Toledo 2 Ohio
 Woodruff Assoc 210 41 St New York 17 NY
 Woodruff & Stokes 349 Lincoln Hingham Mass
 Woodward-Schomacher 1725 W North Chicago 22 Ill
 Woodwelding Inc 3000 W Olive Burbank Calif
 Worcester Pressed Aluminum 13 Hope Worcester Mass
 Worcester Pressed Steel 100 Barber Worcester 6 Mass
 Workman TV Inc 309 Queen Anne Rd Teaneck N J
 Werner Electronic Devices Rankin Ill
 Worthco Corp 430 N Camden Dr Beverly Hills Calif
 Wright Electronic Devel 1519 McGee Kansas City 8 Mo
 Wright Eng'g 180 E Calif St Pasadena 1 Calif
 Wright-Hopp Assoc 138 West S Hackensack NJ
 Wright Inc 2233 University St Paul 14 Minn
 Wright & Sons W R West Warren Mass
 Wright Steel & Wire 243 Stafford St Worcester Mass
 Wright Zimmerman Inc 330 S Ave New Brighton Minn
 Wrought Washer Mfg 2275 S Bay Milwaukee 7 Wis
 Wunderlich N E 2 5 Ave New York 11 NY

Listings Cont. on p. 348



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 Worlitzer Co Rudolph R Tonawanda NY
 Wybar Electronics PO Box 534 Syracuse NY
 Wyeth Engg 6021 Dempster Morton Grove Ill
 Wyzenbeck & Staff 223 N California Ave Chicago Ill
 Xcelite Inc Thorne & Bush Orchard Park NY
 Yale & Towne 9335 W Belmont Ave Franklin Park Ill
 Yarnoy Electric 105 Chambers New York 7 NY
 Yellow Springs Instrument Yellow Springs Ohio
 Young Bros 1829 Columbus Rd Cleveland Ohio
 Yonkers Industries 28 School St Yonkers NY
 York Co Otto H 69 Glenwood Pl E Orange N J
 Zell Products Box 590 Newark Conn
 Zenith Electric 152 W Walton St Chicago 10 Ill
 Zenith Optical Div Polan Ind Huntington W Va
 Zenith Optical Lab 1940 Great Neck Capizaga LI NY
 Zenith Radio 6001 Dickens Chicago 39 Ill
 Zephyr Products Co 129 E 124 St New York 35 NY
 Zernickow Co 8 15 Park Row New York 38 N Y
 Zero Mfg Co 1121 Chestnut St Burbank Calif
 Zierick Mfg Brookwood & Rockdale New Rochelle NY
 Zoomar Inc 55 Sea Cliff Ave Glen Cove L I N Y
 Zophar Mills 112 26 Brooklyn 32 NY
 Z & W Machine Prods 5100 St Clair Cleveland 3 Ohio

AIEE Color TV Meet

The AIEE Summer and Pacific General Meeting at the Biltmore Hotel, Los Angeles, Calif., will be held on June 21-25, 1954. It will feature a color TV session sponsored by the Committee on TV and Aural Broadcasting. Papers at the June 21 color TV session include:

"Color Television Today," by D. E. Foster, Hazeltine; "A Single-Tube Color Camera System for the NTSC Standards: The Chromacolor," by Peter C. Goldmark, CBS; "NTSC Color Television Transmission Via Local Wire and Microwave Facilities," by E. R. Clark, R. W. Bixler, and J. H. Clark, Pacific Tel. & Tel.

Presiding officer is C. F. Hanson of Pacific Tel. & Tel.

Raytheon Opens Lab For Naval Research

A new, ultra-modern, \$2,000,000 electronics laboratory has been opened by Raytheon Manufacturing Company at Bedford, Mass.

The U. S. Navy began construction of the building late in 1952, when it was planned that Raytheon would use the structure as a Navy research and development center. It has 100,000 square feet of floor space on two floors, and will house approximately 700 workers. There are 21 specially designed bays for operating and testing radar equipment.

"Precision" Moves To New Plant By Summer

Precision Apparatus Co., Inc., manufacturers of radio, television and electronic test equipment of Elmhurst, Long Island, plans to move its manufacturing, engineering and administrative facilities to a new plant in Glendale, Long Island, by mid-summer of 1954.

The new 2-story, airconditioned, fire-proof structure will provide expanded facilities for the Precision concern as well as for the Pace Electrical Instruments Co., Inc., their wholly owned meter manufacturing subsidiary.

Bulletins begin on p. 356



REED FREQUENCY METERS • ELAPSED TIME METERS
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Model 30-F
Dual Range, Double Window



Model 36-FX-21
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Model 34-FHXX
9-Reed in 3 1/2" Sealed Case



Model 41-FX
Dual Range in 4" Case



Model 15-FHAC
2-Reed in 1 1/2" Sealed Case



Model 33-FP-9M
Portable, Metal Case
TS-328 A/U (400 cy. type) Shown

VIBRATING REED FREQUENCY METERS

Meters illustrated are typical panel mounting or portable—for use where constant or known frequency is important to efficient operation of equipment.

- Permanently Accurate within $\pm 0.3\%$ or better at reference temperature, depending on the model. This accuracy is not affected by poor wave form, external magnetic disturbances, or voltage fluctuations.
- Size and Type for Every Service. Made in a wide variety of portable and panel case styles, reed groupings and frequency ranges from 12 to 650 cycles and above; 100-130 volts furnished unless otherwise specified.
- Rugged Construction of simplified, patented design, with no moving parts to wear out or get out of calibration. Ideal for field and mobile applications.
- Suitable for Electronic Circuits because of relatively low power consumption and J-B-T reeds with high Q and sharp, immediate response.

3 1/2" and 2 1/2" SEALED Types

3 1/2 inch FHXX Meters sealed, glass-to-metal construction with solder terminals, meet or exceed the sealing and electrical requirements of JAN-1-6 and MIL-M-6A including the 3000 volt breakdown, and use the front mounting dimensions specified. Max. barrel diameter, 2 1/16"; 2 3/8" overall depth behind flange. While not regularly stocked, these meters are in volume production. New 2 1/2" meters Model 21-FHXX available on special order.

1 1/2" SEALED Types

Model 15-FHAC (illustrated half actual size). 60 and 400 cycles, 2 reeds, 8-10 volts, for cathode follower circuit. Widely used on audio oscillators to standardize output. Meets intent JAN-1-6 and amendments on sealed meters. Barrel, 1 1/2" diameter; detachable flange, 2.094" diameter; solder terminals.

Model 15-FH Series (not illustrated)—Same case, sealed, 5 reeds, 58-62 cycles, 100-130 volts, or 390-410 cycles, 100-130 volts. Variations such as 6 reeds or 25 cycles available on special order.

ASK FOR CATALOG 354

ELAPSED TIME METERS

For Maintenance, Tube Life Data, and Operating Time Records—on Motor Generators, Transmitters, Receivers, Rectifiers, Test Set-ups, etc.

Model 31-EX (illustrated) also known as running-time or total time meter, registers in 1/10 hours to 9,999.9 hours, then automatically resets. Normally stocked for 60 cycles, 110-130 volts. 3 1/2" standard meter mounting. Variations such as 50 cycles; 230 volts; 0-99,999 hours; 3" rectangular case; and readings in minutes available on special order.



SEALED TIME METERS

Model 31-EHXX—Completely sealed meter, reading 0-9,999.9 hours, same as Model 31-EX above. Glass-to-metal construction, solder terminals, and 3 1/2" detachable flange, all match XX metal frequency meter case.

Model 33-EHXX—Operates on 400 cycles, 110-125 volts, to read 0-9,999.9 hours in 1/10 hour steps. It is presently made only in 3 1/2" flange sealed metal case, 2 3/4" diameter, 4" deep behind panel.

Model 21-EHXX—New. 2 1/2" flange, sealed, full size counter.

FREQUENCY — TIME METERS

Combination Reed-Type Frequency — Elapsed Time Meters—One Meter Does the Work of Two.

Model 31-FE (illustrated) pioneered by J-B-T, saves panel space and cost, and encourages periodic maintenance; 3 1/2" flange, metal case, 4 1/2" overall depth, standard. 3 1/2" case known as 31-FEX-1 supplied on custom orders. 5 reeds, 60 cycle range, standard; 7, 9, 11 reeds or 50 cycle range on special order.



DISTRIBUTOR SERVICE

Standard J-B-T items are available through authorized electronics parts distributors.

TOGGLE SWITCHES FOR JAN-S-23



J-B-T now manufactures toggle switches of the quality required by Specifications JAN-S-23 and MIL-S-6745. The complete series ST-40 and ST-50 with screw terminals, and ST-42 and ST-52 (with solder lugs) are available. Solid silver contacts and rocker arms, rugged construction, and a tested combination of lubricant, plating and materials enable these switches to exceed many of the requirements. Ask for Bulletin TS-4. A convenient adhesive-backed list of Preferred Types (PPL-23-ST) also will be sent upon request. Smaller, lower capacity toggle switches, such as ST-12, -13, -22, -23, -26 and -27, also designed for JAN-S-23 will be released for sale in the third quarter of 1954. Your inquiries are invited.

MOLDED ROTARY SWITCHES

Shorting and Non-Shorting... 14 or 20 Positions... 1 to 6 Decks.

All moving contacts enclosed — eliminates dirt and corrosion... contact lugs permanently integrated into switch assembly... sturdy construction with 3-post deck suspension, double-grip collector arms, and rectangular drive shaft through decks for precision indexing... interchangeable, electrically and mechanically with J-B-T Series SS-14 and 20 position Laminated Switches.

Carrying capacity (not make-and-break): 1 amp.; maximum momentary, normal 5 amp.; maximum voltage between contacts and ground, 1000 volts R.M.S.; between decks and ground, 2000 volts R.M.S. Average contact resistance 0.007 ohms or less. Also available in 6-pole per deck double throw construction.



Model MS-14-2

LAMINATED ROTARY SWITCHES

Used widely in quality test equipment, portable instruments, inspection setups and avionics where trouble-free, dependable performance counts. Two basic types — 14 pos. (2" dia.) or 20 pos. (2 2/32" dia.) give extra contacts in minimum space. One to six decks.



Model SS-14-2

LEVER ACTION SWITCHES

Excellent for test equipment and communications systems, these switches use the same high quality parts as the SS-14 series. Bracket mounting holes 1 5/8" apart; single deck types may be mounted in groups 3/4" between centers; two-deck types, 1 1/16" between centers.



Model SS-14-114

ASK FOR CATALOG 354

J-B-T INSTRUMENTS, INC.



NEW HAVEN 8, CONN.

**DO YOU
KNOW???**

Photocircuits

CORPORATION

**PRODUCES Printed-Circuit PANELS and
Dip Soldered Electronic Sub-Assemblies**

(to your specifications)

with PLATED-THRU HOLES

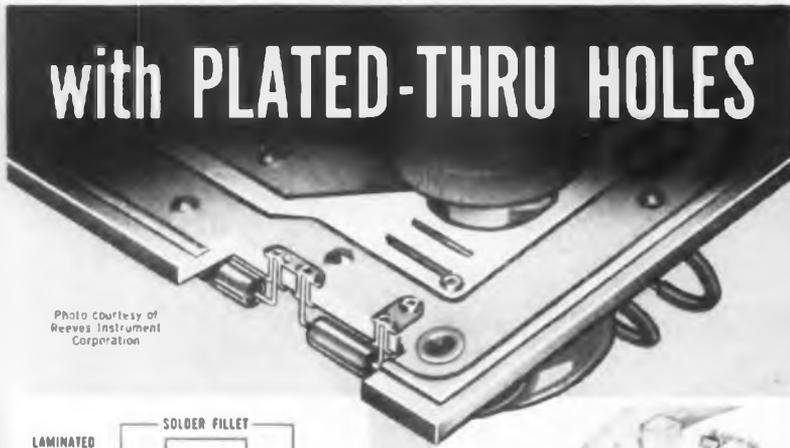
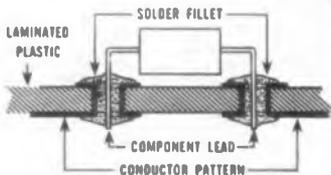


Photo Courtesy of
Reeves Instrument
Corporation



NOW further **COST REDUCTION** and **PROFIT POTENTIAL** accrue from Photocircuits development of cross-through connections by *plating through panel holes*. This is another good reason for having your products engineered and produced by Photocircuits Corporation.

ADVANTAGES:

1) **IMPROVED RELIABILITY**... for cross-through connections between printed circuitry on two sides of a plastic laminate since hole plating is continuous with pattern plating. No hardware need be inserted or soldered to the conductor patterns to achieve through-connection.

2) **COST REDUCTION**. Obviously, since all through-connections are achieved simultaneously by electro-plating, considerable economies are realized.

3) **VIBRATION RESISTANCE**. Dip soldered joints are more easily made and are virtually impervious to shock and vibration.

... PLUS these "usual" advantages of Photocircuits' Printed Circuits:

- 4) Exact Circuit Reproducibility
- 5) Reduced Assembly Time
- 6) Miniaturization
- 7) Product Improvement

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on request.



Photocircuits

CORPORATION

Dept. TD, GLEN COVE, NEW YORK

Glen Cove 4-4000 • Flushing 3-8910



*Trade Mark

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CHICAGO: 4250 W. Irving Park Rd. • PALlades 3-1170
PHILADELPHIA: 1531 Spruce St. • KINGSley 3-1205

ROCHESTER, N. Y.: 8 Juniper St. • CULver 7635
LOS ANGELES: 6907 1/2 Melrose Ave. • WEbster 3-7275
ROYAL OAK, MICH.: 4512 N. Woodward Ave. • LIBerty
CLEVELAND: Fidelity Bldg. • PRospect 1-1952 9-3910
TORONTO, CAN.: 290 Lawrence Ave., W. • ORchard 3003

News of MANUFACTURERS' REPS

Gerald B. Miller Co., 1550 North Highland Ave., Hollywood 28, Calif., has been appointed sales representative for Teletronics Laboratory, Inc., producers of electronic test equipment. Also appointed were, **Loren F. Green & Associates**, 4949 West Diversey Ave., Chicago 39, Ill.; **Murphy & Cota**, 1409 Peachtree St., N.E., Atlanta 5, Ga.; **The Satullo Co.**, 4512 North Woodward Ave., Royal Oak, Mich.; and, **Computing Devices of Canada, Ltd.**, P. O. Box 508, Ottawa 4, Ontario, Can.

Logan Sales Co., 530 Gough St., San Francisco, Calif. was appointed to handle distributor and manufacturer sales in northern California and Fresno by Astron Corp., East Newark, N. J.

Ronald G. Bowan Co., 446 Broadway, Denver 3, Col. has become exclusive representative for Sensitive Research Instrument Corp., Mount Vernon, N. Y. to cover Colorado, Utah, Wyoming, eastern Montana and eastern Idaho.

Horman Associates, 2017 "S" St., N.W. Washington 9, D.C., will represent the company in Washington, D.C., Maryland, Delaware, and north-eastern Virginia, also on an exclusive basis. **Arthur H. Lynch & Associates**, P. O. Box 466, Fort Myers, Fla., will represent the company exclusively in Florida.

Theodore B. Lowell of St. Louis, will handle distributors and manufacturers in Kansas for Centralab, division of Globe-Union Inc., Milwaukee, Wis., in addition to his present territory in Missouri and southern Illinois. **Robert E. Nesbitt**, Dallas, will handle manufacturing accounts in Texas, (except west of the Pecos River), Oklahoma, western Arkansas, and western Louisiana. **Al S. Engelman**, Memphis, will handle distributors and manufacturers in Tennessee, Mississippi, Alabama, western Florida, and eastern Arkansas. **Frank Nickerson**, Atlanta, will handle distributors and manufacturers in North and South Carolina, Georgia, and eastern Florida. **McLoud & Raymond Co.**, Denver, will handle distributors and manufacturers in Texas west of the Pecos River in addition to the present territory from Montana to New Mexico. **J. Earl Smith**, Dallas, will handle distributors only in Texas (except west of the Pecos River) Oklahoma, western Arkansas, Louisiana, and manufacturers in eastern Louisiana. **Richard L. Stone**, Los Angeles, will handle distributors only in southern California, Arizona, and Clark County, Nevada.

David C. Clem, 1420 Walnut St., Phila., Pa., has been named by Uniform Tubes, Inc., Collegeville, Pa., as representative for eastern Pennsylvania, southern New Jersey, Maryland, and Delaware.



**Complete
Testing
Equipment
for**

OMNI and LOCALIZER RECEIVERS

A.R.C. Type H-14 Signal Generator



For a quick and accurate check by pilot before take-off, or for maintenance on the bench, this is the favored and dependable instrument. Checks up to 24 omni courses, omni course sensitivity, to-from and flag-alarm operation, and left-center-right on localizer. For ramp check, RF output 1 volt into 52 ohm line; for bench checks, 0-10,000 microvolts.

The H-16 Standard Course Checker is a companion instrument to the H-14.

It makes possible a precise check on the course-accuracy of the H-14 or of any other omni signal generator. Just as a frequency meter is necessary in connection with a variable frequency signal generator, the H-16 Standard Course Checker is required in connection with a VOR signal generator for a precise measurement of phase accuracy.

These instruments sold only direct from factory.

Write for detailed literature



News of MANUFACTURERS' REPS

Gerald B. Miller Co., 1550 N. Highland Ave., Hollywood 28, Calif., with branch offices in Albuquerque, New Mex., Belmont, Calif., and Seattle, Wash., has been appointed West Coast representative of the Electronics Instruments Div., Burroughs Corp., 1209 Vine St., Phila. to cover California, Oregon, Washington, Nevada, Arizona, New Mexico, and western Montana. Earl Lipscomb Associates, P. O. Box 8042, Dallas, Texas, will represent Burroughs in Texas, Oklahoma, Arkansas, Mississippi, and Louisiana. H. E. Ransford Co., Grant Building, Pittsburgh 19, Pa., will represent the company in West Virginia and western Pennsylvania. Bivins and Caldwell, Security Bank Building, High Point, North Carolina, will cover North Carolina, South Carolina, Georgia, Alabama, Tennessee, Kentucky, and Virginia, with the exception of Arlington and Fairfax counties.

Bernie Mayer, formerly with Westinghouse Electric Corp., has become a member of the engineering staff of Egert & Fields Co., representatives, 11 Park Place, New York, N. Y. He will cover industrial firms and distributors in the Metropolitan New York area and northern New Jersey.

Alfred Crossley & Associates, 4501 North Ravenwood, Chicago, Ill. has been appointed representative of Wm. Miller Instruments, Inc., Pasadena, Calif., manufacturers of oscillographs, amplifiers, transducers, and computing equipment. Crossley, a sales and service organization, will cover western Ohio, Indiana, Illinois, Iowa, Nebraska, Minnesota, North and South Dakota, and Wisconsin.

Harry Appleton Co., Inc., 136 San Fernando, Rd., Los Angeles 31, Calif., has been named representative for Metal Textile Corp., Roselle, N. J. to handle electronic products in California, Arizona, and New Mexico.

1954 Directory of Los Angeles Reps

The Los Angeles Chapter of Representatives, Inc., has issued its 8th directory. Copies can be obtained without charge from Dr. Ralph L. Power, executive secretary treasurer, 767 Castelar St., Los Angeles 12, Calif. The 36-page booklet contains approximately 500 manufacturers and a chapter roster. Also, it contains an alphabetical product index with over 500 classifications and nearly 2,000 listings. This year's directory committee was composed of chapter officers, George Davis, Al J. Rissi, and Frank A. Emmet. The group is in its 21st year.

SQUARE PULSE GENERATOR

MODEL
300



for the MILLIMICROSECOND to MICROSECOND RANGE

New Basic Test Instruments for NUCLEAR, RADAR, TV, UHF, and other fields in which FAST PULSE CIRCUITS are employed. Three or more pulse outputs are available in Model 300.

SPECIFICATIONS

PULSE SHAPE: square pulse
RISE TIME: .001 μ sec. from 10% to 90% amplitude
PULSE WIDTH: .001 μ sec to several μ sec., selectable.
PULSE AMPLITUDE: From 100 volts to .006 volts in one db steps
OUTPUT IMP: Matched to any impedance for standard coax lines
POWER INPUT: 105-125 V, 60 cy.
SIZE: 17-1/2" x 19" x 10-3/16"

Catalog TP-6 on request

**ELECTRICAL & PHYSICAL
INSTRUMENT CORP.**

42-19 27th Street, L.I.C. 1, N. Y.

10 mc DECADE Scaler



0.1 Microsecond Resolution SPECIFICATIONS Model 412

INPUT CIRCUIT:
POLARITY: Positive pulses only. Negative pulse available at extra cost.
AMPLITUDE: Minimum amplitude of 5 volts required at low counting rates. Increasing to 10 volts minimum at the maximum counting rate.
REQUIRED RATE OF RISE: Minimum of 10 volts per μ sec.
INPUT IMPEDANCE: Greater than 5000 ohms.
RESOLVING TIME: 0.1 μ sec.
MAXIMUM ACCEPTABLE UNIFORM RATE: 10mc or 10⁶ counts/second, no lower limit on counting rate.
SCALING FACTOR: Decade Scale of 100 Neon light interpolation. Also Binary.
OUTPUT:
POLARITY: Positive or Negative pulse selected by front panel switch.
PULSE CHARACTERISTICS: Triangular pulse of approximately 1 μ sec. rise time, 4 μ sec. width and 50-60 volt amplitude.
POWER REQUIREMENTS: 105-125 volts, 50-60 cycles, approximately 300 watts.
SIZE: 10 1/2" x 19" x 13" deep

Complete literature on request Dept TD-6

**ELECTRICAL & PHYSICAL
INSTRUMENT CORP.**

42-19 27th Street, L.I.C. 1, N. Y.

Specify
MYCALEX[®]
glass-bonded
mica for the
ultimate in

dimensional stability*

Relay Contact Spacers
made of MYCALEX
400 and 410

- NO SHRINKAGE
- NO WARPAGE
- NO COLD FLOW
- NO MOISTURE ABSORPTION
- LOW THERMAL EXPANSION
- DIMENSIONAL ACCURACY

The application shown above is a typical example of product improvement thru the use of MYCALEX glass-bonded mica. In this case, the unchanging characteristics of MYCALEX insure permanent positioning of the contact pile throughout the life of the relay. This is but one of the thousands of product improvements effected by MYCALEX, the unique ceramoplastic dielectric. For information call or write J. H. DuBois, Vice President-Engineering at the Clifton, N. J. address below.

NOTE: The MYCALEX glass bonded mica materials designated above, are all exclusive formulations of and manufactured only by the Mycalex Corporation of America.

*MYCALEX PHYSICAL PROPERTIES REMAIN UNCHANGED THRU THE YEARS



MYCALEX CORPORATION OF AMERICA

World's largest manufacturer of glass-bonded mica products

Executive Offices: 30 Rockefeller Plaza, New York 20, N. Y.

ADDRESS INQUIRIES TO—

General Offices and Plant: **112** Clifton Blvd., Clifton, N. J.

PERSONAL

Lloyd Espenschied, co-inventor of the co-axial cable system, recently retired after forty-four years with the Bell Telephone System.

R. H. Williamson and **R. R. Rosenkoetter** have been appointed sales engineers for the newly formed industrial sales department of the Kellogg Switchboard and Supply Co., div. of the I. T. & T. Corp.

John S. Boyers has been appointed chief engineer of the new Magnetic Memory Devices Div. of the National



J. S. Boyers

Co., Malden, Mass. Until recently, Mr. Boyers was vice-president of Magnecord, Inc. which he helped organize in 1946.

Dr. Wilfred E. Campbell, formerly of Bell Labs, has joined the Brush Laboratories Co. as director of chemico-physical research. Brush Labs is the basic research division of Clevite Corp. Dr. Campbell, who for the past year has been the president of the American Society of Lubrication Engineers, will direct basic research in surface physics and chemistry.

C. D. Richard Jr. has been named supervisor of the Electronic Laboratory of the Technical Div., Superior Tube Co., Norristown, Pa. He has been with this company since 1946 as electronics engineer.

C. M. Granger, former assistant to the general manager of the TV and radio division of Bendix Aviation Corp., has been promoted to general factory manager of the TV division. **Kenneth Brown**, formerly field service chief, has been promoted to TV service manager.

George A. Brettell has been named chief loudspeaker engineer for Ampex Loudspeaker Corp., North Hollywood, Calif.

Martin D. Bergen has been appointed engineering technical director of the Thomas & Betts Co., Elizabeth, N. Y.

PERSONAL

Jay T. Nichols, formerly with the Armour Research Foundation, has been appointed to the post of chief engineer



J. T. Nichols

at Pentron Corp., Chicago, Ill., tape recorder manufacturers.

Kenneth F. Oldenburg has been appointed supervisor of the Electronic Lab. of the Clary Multiplier Corp., San Gabriel, Calif. In his new position he will head research and development on all the company's electronic data handling products.

Frank Swinehart has joined the Engineering Dept. of the Turner Co., Cedar Rapids, Iowa, manufacturers of



F. Swinehart

microphones. He had previously been associated, at different times, with the Radiart Corp., Astatic Corp. and the Brush Development Co.

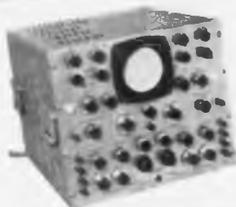
Ralph A. Krause, who has been with the Stanford Research Institute since 1948 as director of research, has been recently named an associate director. **Merrit L. Kastens**, former asst. to the director, has been promoted to the position of assistant director. **John K. Shallenberger** of the Div. of Economics Research, has been named Manager of Institute Relations, a newly created staff position.

(Continued on page 365)

MULTI-CHANNEL SCOPES & MULTI-GUN TUBES

THAT

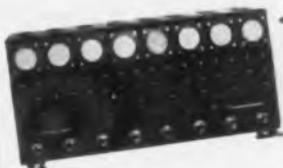
Tackle the TOUGH Jobs!



✦ **Dual Channel Scopes**—Wide band, high gain. Separate intensity, focus, & axes controls on each channel. #H-21A:DC to 200kc, #H-23:DC to 1mc, #H-25:DC to 10mc.



✦ **Four Channel Scopes**—Same separate controls. #H-43, DC-200kc range, for use with continuous film strip camera. #H-45, DC to 300kc range, sensitivity over .028 Vdc/in.



✦ **Multi-Tube, 8 Channel Scopes**—For film strip seismography recording, etc. #H-81, AC amp. #H-82, DC amp., greater sensitivity.



✦ **Multi-Gun C.R. Tubes**—Complete line from 1-gun to 10-gun types, special purpose tubes—virtually every type capable of commercial manufacture.

✦ Representative types only—write for catalog covering the complete line.



electronic tube corporation

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...AND SUP RING ASSEMBLIES



BRUSHES - CONTACTS - ASSEMBLIES

... Use **SILVER GRAPHALLOY** for applications requiring low electrical noise; low and constant contact drop; high current density and minimum wear.

EXTENSIVELY USED IN:

**SELSYNS • GUN FIRE CONTROLS
ROTATING THERMOCOUPLE and
STRAIN GAGE CIRCUITS
ROTATING JOINTS • DYNAMOTORS**

Wide range of grades available for standard and special applications.

Other Graphalloy Products



OIL-FREE self-lubricating Bushings, Bearings, Piston Rings, Seal Rings, Thrust and Friction Washers, Pump Vanes.

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 Send data on BUSHINGS.

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STREET _____

CITY _____

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R. B. Hutton has been appointed vice-president in charge of sales of all the West Coast electrical companies for the Leach Corp. and its divisions, Leach Relay Co., Inet, Palmer Electric Mfg. Co., and Jeffries Transformer Co.

Bruce A. Coffin, formerly vice-pres. and a director of CBS, has been elected to chairman of the board of directors of the Victoreen Instrument Co., Cleveland, Ohio.



B. A. Coffin

Henry Bowes was recently made sales promotion manager of the TV Div. of Philco Corp., Philadelphia, Pa. Former Washington government sales manager for the company. Mr. Bowes was transferred to Philco headquarters in 1952. **Edward M. Bland**, who had been director of sales training for Philco Corp. since 1950, was made advertising manager of the TV Div. He succeeded **Morgan A. Greenwood** who recently became general advertising manager of Philco Corp.



R. S. Barbaros

Robert S. Barbaros has been named sales manager at Stupakoff Ceramic and Mfg. Co., Latrobe, Pa. Other appointments were: **David E. Albert**, to head the field sales organization, and **E. J. Straus**, to direct the marketing activities of the Kovar Alloy Dept.

(Continued on page 398)

PRECISION MACHINING OF ALL THE PLASTICS

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POLYSTYRENE • COPOLYMER 1422
BUTYRATE • NYLON • TEFLON • KEL-F

PLASTIC FABRICATING

Printloid is equipped for the complete production of a wide variety of consumer and industrial items in any quantity. We work with any plastic material in sheets, rods and tubes. Die-cutting, deep drawing, stamping, forming, finishing, and assembling in our own plant.

PLASTIC PRINTING

LETTERPRESS • SILK SCREEN • HOT STAMPING
for Containers, Displays, Dials,
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NEW PRECISION DYNAMOMETER



For determining the force required to actuate delicate mechanisms.



Here is a new instrument that has quickly become an indispensable aid to measure, calibrate and standardize the pressure or power required to actuate fine precision mechanisms and spring tensions of **ELECTRIC CONTACTS - RELAYS - CLOCKS - TELEPHONES - BUSINESS MACHINES - MICRO MOTORS** for Electric Razors - **WINDSHIELD WIPERS - TIME SWITCHES - ETC. . .**



THE DYNAMOMETER IS AVAILABLE IN 2 SIZES WITH OPERATING PRESSURES RANGING FROM 5-15 GRAMS TO 100-1000 GRAMS.

WRITE FOR ILLUSTRATED FOLDER

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New Products

ANALYZER

The Model TSA spectrum analyzer covers the range 10 mc to 22,000 mc with 3 interchangeable r-f heads. A single dial r-f tuning control enables selection of any frequency spectrum. A swept i-f yields constant dispersion characteristics independently of frequency setting. Frequency dispersion from 250 kc to 25 mc can be realized with a resolution



of 25 kc. A marker measures frequency differences to ± 12.5 mc on a 5-inch CRT display. Sensitivity is better than -80 dbm over the entire range. A built-in r-f attenuator accommodates large signals. **Polarad Electronics Corp., 100 Metropolitan Ave., Brooklyn 11, N.Y.—TELE-TECH & ELECTRONIC INDUSTRIES.**

HERMETIC TERMINALS

Five basic solder type "Strat-O-Seal" hermetic terminals for the first time make available a complete assortment of these units that can be solder-assembled by the user. Increased company production facilities make it possible to supply the electronic industries with any type or size of solder type hermetic



terminal. New catalog pages that fully describe these terminals are available for design and production engineers. **Strato-O-Seal Manufacturing Co., 3039 West Fullerton Ave., Chicago 47, Ill.—TELE-TECH & ELECTRONIC INDUSTRIES.**

More New Products on Page 358



TO **SPEED**

YOUR PRODUCTION

You just can't beat Klein pliers for smooth, easy operation—for steady dependability whatever your production job. That's because Kleins are quality made of finest tool steel, precision fitted—individually tested. Handles fit the hand to perfection—knives shear through toughest wire with ease.

And now the Klein plier selection is bigger than ever—in standard size patterns—in new compact patterns specially designed for intricate wiring and cutting in confined space. Available with or without a flexible steel leaf spring.

NEW SMALL PATTERNS



209-5L compact oblique cutting plier



307-5½L extremely slim long nose plier



204-6L transverse end cutting plier



317-5L chain nose plier
Ask to see the complete new line.

ASK YOUR SUPPLIER

Foreign Distributor:
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New York

Write for your free copy of the Klein Pocket Tool Guide. Contains information on all types of Klein Quality Pliers.



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INTRODUCING...

the new

TURBOZONE 40

PLASTIC TUBING manufactured to meet the requirements of MIL-I-7444A

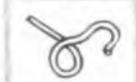
A vinyl plastic tubing that combines fungus resistance with exceptional low temperature characteristics to provide outstanding electrical protection. TURBOZONE 40 is highly resistant to heat . . . cold . . . fungus . . . moisture . . . and has long enduring aging characteristics, plus 5 superior features:



COLD IMPACT —
down to -90°F (-67°C)



FLAME RETARDANT —
meets the requirements of
specification MIL-I-631B



ELONGATION —
highly flexible for snaking operations



TENSILE STRENGTH —
1800 P.S.I. — gives rugged
durability



TRANSPARENCY —
sufficient to permit ready
identification of color
coding



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BRAND**

TURBOTHERM 105
High dielectric and
physical properties . . .
excellent for high operating
temperatures.

TURBOLEX 63 & 85
General purpose tubing—extreme-
ly flexible—good dielectric properties.

TURBOTRANS 105 Specially
processed for potting and baking operations
—oil resistant—high heat resistance.

Sizes $\frac{5}{8}$ " I.D. to
 $1\frac{1}{2}$ " I.D. Inclusive



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SALES REPRESENTATIVES IN PRINCIPAL CITIES

BULLETINS

Power Supplies

The Perkins Engineering Corporation, 345 Kansas St., El Segundo, Calif., recently released a 4-page bulletin, MA154, describing its line of airborne, high-voltage, power supplies and magnetic amplifier regulated units. It includes unit lists, operating characteristics, and performance curves. Can be obtained if requested on company letterhead.

Printed Circuit Sockets

A recently released data sheet describes and illustrates 7 and 9 pin injection-moulded "Mycalex," glass-bonded mica printed circuit sockets that can be mounted with eyelets or rivets. Available on request to Mycalex Corporation of America, Clifton Blvd., Clifton, N.J.

Receivers

Single-sideband receivers, Models 48 and 156, are discussed and graphically presented with engineering data in Technical Publication 254, issued by Crosby Laboratories, Inc., Box 233, Hicksville, N.Y.

Resistors

Engineering bulletin L-30 gives complete specifications and laboratory performance data covering "P" type encapsulated precision wirewound resistors. Copies are available on letterhead request to Shallcross Manufacturing Co., Collingdale, Pa.

Diodes and Transistors

Bulletin N. G-23, a new 8-page catalog issued by Selectron and Germanium Div., Radio Receptor Co. Sales Department, 251 W. 19th St., New York 11, N.Y., describes the company's complete line of germanium diodes and transistors. Available on request.

Relays

Kurman Electric Co., Inc., 35-18 37th St., Long Island City, N.Y. have released Catalog G-S covering the technical data and performance characteristics of various classifications of relays made by the company for electrical, electronic, and industrial use.

Quartz Crystals

The booklet, "Quartz Crystals" contains all needed information for ordering—such as, crystal holder type, temperature range, etc. Available on request at General Electric Co., Germanium Products, Electronics Park, Syracuse, N.Y.

Crystal Units

McCoy Electronics Co., Mt. Holly Springs, Pa., has released a 4-page folder that contains a MIL Specification Chart that covers all government type crystal units in use.

Printed Circuits

Engineering Bulletin No. 106, issued by Insulated Circuits, Inc., 115 Roosevelt Ave., Belleville, N.J., presents illustrations and engineering data covering "carry-through" printed circuits.

Facilities

Loral Electronics Corp., 794 E. 140th St., New York 54, N.Y. have published a comprehensive booklet that presents the engineering, development, and manufacturing facilities of the company.

Null Meter

A two-page data sheet presenting the characteristics and performance data covering the "Phazor" null meter and a reprint of the article, "Null Detection of Complex Wave Forms," is available at Industrial Test Equipment Co., 55 E. 11th St., New York 3, N.Y.

Standby Plants

Bulletin T-O11, issued by D. W. Onan & Sons, Inc., Minneapolis, Minn., describes standby electric generating plants, methods of control, and easily understood wiring diagrams. Copies available without charge.

Resistor Production

Artistically designed brochure relates manufacturing policy, production facilities and resistor products to the sensations of sight, hearing, smell, taste and touch—plus the sixth sense. Available from International Resistance Corp., 401 N. Broad St., Philadelphia, Penna.

BULLETINS

Solenoids, Etc.

Bulletins Nos. 1 and 2 released by G. H. Leland Inc., 123 Webster St., Dayton 2, Ohio, present applications of "Ledex" rotary solenoids, circuit selectors and relays, with wiring diagrams. On request, engineers will be put on mailing list.

Coils

J. W. Miller Co., 5917 S. Main St., Los Angeles 3, Calif. have released Catalog No. 55, which illustrates and describes the company's line of radio coils, and allied products.

Instruments

Data sheets DSA 1-2 and 101 describe the line of miniature servo accelerometers and the Model 10 laboratory linear and angular oscillator, respectively, produced by Donner Scientific Co., 2829 7th St., Berkeley 10, Calif. Operating principles and specifications of the instruments are included.

Components

Donald P. Mossman, Inc., 84 W. Jefferson St., Joliet, Ill., have released a 16-page catalog containing illustrations, diagrams, and technical data covering the company line of heavy duty multiple circuit lever switches, turn switches, push switches, and plug jacks.

"Ceramicons"

The new 16-page catalog, D-54, released by Erie Resistor Corp., 644 W. 12th St., Erie, Pa., supersedes previous catalogs and includes the new line of temperature-compensating tabular and disc "Ceramicons" with standard electronic components.

Coupler

Bulletin DC-1 released by Microwave Development Laboratories, 220 Grove St., Waltham 54, Mass., describes the first of a new design concept series of directional couplers enabling superior operating performance. Includes specifications and operating characteristics.

Emergency Power

"When Power Fails," form D432, published by Caterpillar Tractor Co., Peoria 8, Ill., presents pictures and data on diesel electric standby sets, and charts a range of engines and sets produced by the company.

3M Products

A list of 3M adhesives, coatings, and sealers meeting government specification requirements is contained in a pocket-size booklet issued by Minnesota Mining and Manufacturing Co., Adhesives and Coatings Div., 423 Piquette Ave., Detroit 2, Mich.

Transmission Line

Transmission Line Data Catalog No. 415, issued by Prodelin Inc., Kearney, N.J., presents efficiencies for boundary channels that serve as bases for estimating intermediate channels. An efficiencies table for all channels will soon be available.

Magnetic Amplifiers

Bulletin S235-15-4 summarizes in table form the 60 and 400 cps standard line of Magnetic Amplifiers, Inc., 632 Tinton Ave., New York 55, N.Y. It includes servo systems and their performance characteristics.

Acoustic Devices

General Catalog No. 44B, issued by Shure Bros., 225 W. Huron St., Chicago, Ill., contains illustrations and data on company microphones, microphone accessories, magnetic tape, wire recording heads, etc.

Audio Equipment

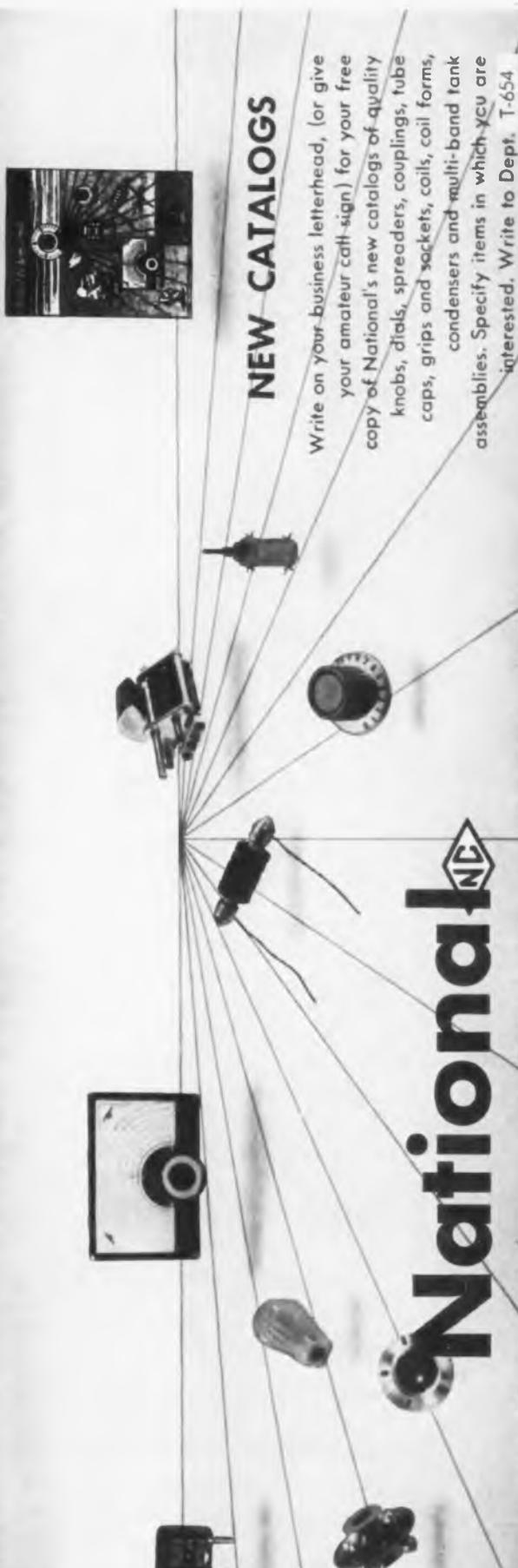
The Engineering Products Div., Radio Corporation of America, Camden 2, N.J. has released Form 2J8930, a 144-page catalog covering broadcast audio equipment for AM and FM television. Available to broadcasters only sending requests on station letter heads.

Kit

A circular on the S.O.S. titler and special effects kit for 16mm and 16-35mm camera professional use was recently released by S.O.S. Cinema Supply Corp., 602 W. 52nd St., New York, N.Y.

(Continued on page 379)

PRECISION COMPONENTS tuned to tomorrow



NEW CATALOGS

Write on your business letterhead, (or give your amateur call-sign) for your free copy of National's new catalogs of quality knobs, dials, spreaders, couplings, tube caps, grips and sockets, coils, coil forms, condensers and multi-band tank assemblies. Specify items in which you are interested. Write to Dept. T-654

NATIONAL COMPANY, INC., 61 SHERMAN ST., MALDEN 48, MASS.

National



multiplex problems?

- TELEPHONE** thin route toll service
- COMMUNICATIONS** point-to-point, long & short range
- GUIDED MISSILE** control
- WAVE PROPAGATION** research
- ANY APPLICATION** requiring the finest in radio equipment

► REL has your answer. Thirty-two years of Reliable Engineering Leadership have culminated in a comprehensive line of multiplex radio systems from 70 to 1000 mcs. Output powers range from 2 watts to 10 kw, and the associated receivers have noise levels of 3 to 7 db.

► Transmitting equipment utilizes REL's exclusive SERRASOID modulator, which has no tuned circuits, and which assures unequalled noise and distortion figures. Base bands are from 60 kc to one-half megacycle. The typical equipment pictured is designed for operation at 500 mcs, with 500 watts output.

► REL FM systems are unique in quality and dependability. Your multiplex radio problems are invited; REL has the experience and facilities to solve them.

REL RADIO ENGINEERING LABORATORIES • INC.

36-40 37th Street • Long Island City 1, N.Y.

Telephone: STillwell 6-2100 • Teletype: NY 4-2816

Canadian representative:

Ahearn & Soper Co., Ltd., P.O. Box 794, Ottawa

New Products

TRANSFORMERS

Custom plastic-molded transformers and reactors, made by a method of plastic encapsulation under the name "Telectrans," are said to make obsolete hermetically-sealed transformers and solder terminals. Units are made with sealed flexible leads in any length and with any type of termination. They have been approved by the Signal Corps Engineering Labs., and meet the requirements of Specification MIL-T-27, Grade 1, Class A. **Telectro Industries Corp.**, 35-18 37th St., Long Island City 1, N.Y.—TELE-TECH & ELECTRONIC INDUSTRIES.

VT VOLTMETER

Model 1060 high impedance vacuum tube voltmeter, for making tuned circuit measurements at audio and supersonic frequencies, features input impedance of 50 megohms in parallel with 25 μ f condenser. Accuracy 2% on all ranges, with full wave average reading meter calibrated in rms. Frequency range 10 cps — 30 kc. Logarithmic voltage scale calibrated from 1 to 10, plus a 0 to 20 db linear decibel scale. Meter, 4 in. suppressed zero protected against overload. **Freed Transformer Co., Inc.**, 1715 Weirfield St., Brooklyn (Ridgewood) 27, N.Y.—TELE-TECH & ELECTRONIC INDUSTRIES.

Shurite

ELECTRICAL MEASURING INSTRUMENTS



RUGGED • ATTRACTIVE • MODERATELY PRICED

TYPES—ammeters, milliammeters, voltmeters, AC and DC; resistance meters; many with zero adjusters; also pocket types.

ACCURACY—well within 5%. AC meters are double-vane, repulsion type with jeweled bearing; DC meters are polarized-vane solenoid type or moving magnet sensitive type.

METAL CASES—three basic styles, round or rectangular, all requiring 2-5/32" hole. Also pocket types.

DIALS—all metal—age and moisture resistant. Special calibrations, one to five colors.

USES—plate current and voltage readings; battery charging, emergency lighting, fire or burglar alarm units; TV antenna rotator indicators; voltage regulators, transmitters, receivers, plating equipment, AC line testers, field indicators, etc.

STOCKED—by leading electronics parts distributors. Ask for Bulletin G-56(SH) showing 219 models.

SHURITE METERS

13 Hamilton St. • New Haven 8, Conn.

TELE-TECH & ELECTRONIC INDUSTRIES • June 1954

New Products

MAGNETIC AMPLIFIER

Magnetic amplifier, Type 2063-01, designed for meteorological sensing systems and use in navigation, aircraft, and gun fire automatic controls, is entirely



self-contained in an hermetically-sealed case. It measures $1\frac{1}{16} \times 3\frac{1}{2} \times 3\frac{7}{8}$ in. and weighs 15.5 oz. Consisting of two stages of vacuum tube preamplification and a magnetic power output stage, the unit operates from 115 v, 400 cps source. Requires approximately 14 va at a power factor of 0.7. Input impedance, 5,000 ohms. Maximum time delay, $\frac{1}{400}$ secs. **Kollsman Instrument Corp., 80-08 45th Ave., Elmhurst, N. Y.—TELE-TECH & ELECTRONIC INDUSTRIES.**

PASSIVE NETWORK

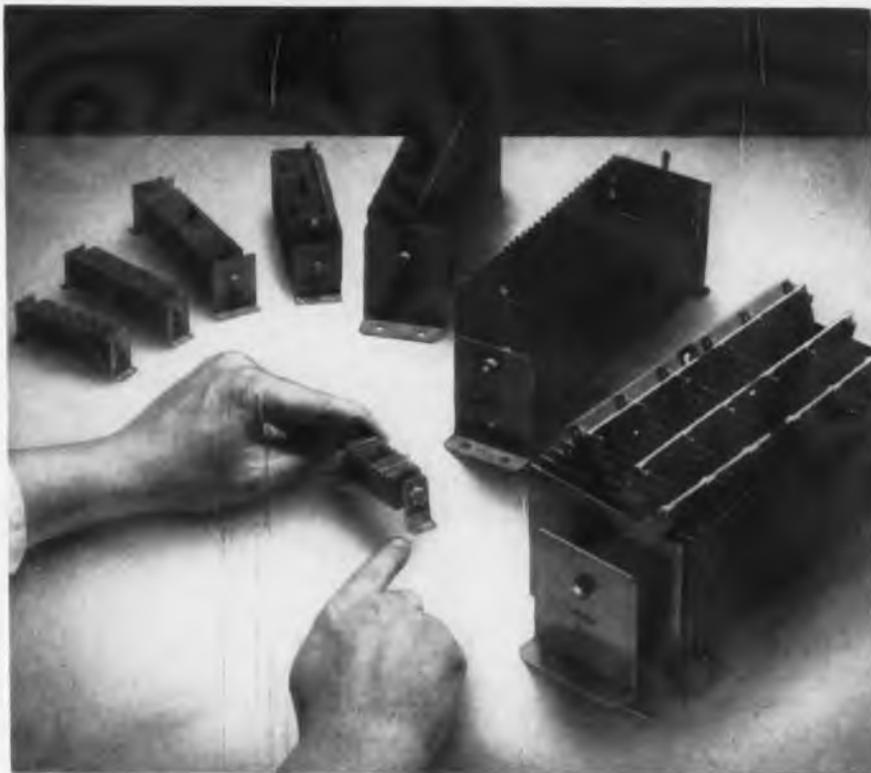
Type 303 continuously variable time delay passive network for time delay matching or phase measurement of TV systems, has a resolution time of less than 5×10^{-10} seconds; passive signals of any waveform. Rise time is less than 7% of the time delay at any point. Overshoot is less than 2%. Unit consists of an input amplifier, an output ampli-



fier, and a continuously variable delay line. Ten different types of continuously variable delay lines. The shortest is 0 to 0.05 μ sec and the longest is 0 to 0.8 μ sec. **Advance Electronics Co., Inc., 451 Highland Ave., Passaic, N.J.—TELE-TECH & ELECTRONIC INDUSTRIES.**

More New Products Next Page

TELE-TECH & ELECTRONIC INDUSTRIES • June 1954



STACKS OF STABILITY

Bradley rectifiers invariably exceed performance requirements, but this quality bonus does not carry a premium price. Our exclusive vacuum process not only assures stability and long life; it also assures low cost. We would like to prove it by quoting now on your rectifier needs. Please fill out the form below — you'll get quick action.

VACUUM PROCESSED — for performance as rated

BRADLEY LABORATORIES, INCORPORATED
170A COLUMBUS AVE., NEW HAVEN 11, CONN.



DC Output: Volts Min _____ Amperes Max _____ Circuit _____	FINISH REQUIRED: _____
AC Input: Volts Max _____ Phase _____	QUANTITY: _____
LOAD: Res. _____ Ind. _____ Cap. _____ Battery _____	NAME _____
DUTY: Continuous _____ Intermittent _____ On _____ Off _____	ADDRESS _____
COOLING: Convection _____ Forced _____ Ft. Per Min. _____	_____
Max. Ambient Temp. _____ °C	_____

For product information, use literature card on last page. 359

McCoy PRESENTS . . .

TWO NEW ANSWERS TO "TOO OLD" PROBLEMS

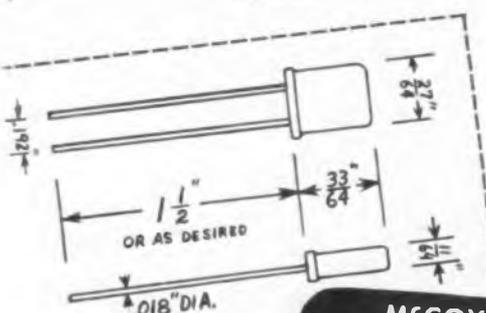
MCCOY "MCMITE" SUB-MINIATURE CRYSTAL M-20



(shown actual size)

The McCoy M-20 "McMite" is a Subminiature hermetically sealed unit which delivers the same performance as a regular sized crystal, yet takes up just one-fifth the space formerly required.

The M-20 "McMite" Subminiature crystal unit meets MIL-C-3098A specification for type CR-55/U. It is being produced in fundamental frequencies from 5 mc up and in overtone frequencies from 15 mc up. There is no sacrifice of stability or dependability when compared with crystals mounted in the regular HC-6/U holder.



FREQUENCY RANGE
5 mc to 110 mc

MCCOY MO-1 MO-1L (OCTAL) (LOCTAL) CRYSTAL OVENS

MO-1 (OCTAL)
Hermetic or gasket seal. Holds 1 or 2 McCoy M-1 (HC-6/U) crystal units. Temperature: 65°C to 85°C (adjustable). Stability: ±5°C from nominal. Ambient Ranges: -55°C to 5°C below nominal. Power: less than 6 watts. 6, 12 or 24 volt operation.



MO-1 (OCTAL)

MO-1L (LOCTAL)

MO-1L (LOCTAL)
see description MO-1
One or the other of these McCoy Ovens is the answer to the problem of maintaining close temperature control in all transmitting and receiving equipment—mobile, railway, marine and aircraft.

Write, wire or call us for full information on these or any other of your crystal requirements.

McCoy
ELECTRONICS COMPANY
MT. HOLLY SPRINGS, PA.

New Products

CONDENSER MICROPHONE

Condenser microphone, Model CM 2001, houses a self-contained pre-amplifier though it is only 1/8 in. in diam., 6 in. long, and weighs only 12 ozs. It has a smooth frequency response of 30 to 15,000 cps, plus or minus 3 db. Omnidirectional, it is free from angular discrimination, blast proof, and unaffected



by moist atmosphere. Its small size and continuous shape prevent free field distortion. The unit is supplied with cable and power supply. Frank L. Capps & Co. Inc., 20 Addison Pl., Valley Stream, N.Y.—TELE-TECH & ELECTRONIC INDUSTRIES.

COLOR GENERATOR

The Model Uni-Chrome "Cromabar" Signal generator, for the presentation of NTSC standard colors, selects any desired color and black and white bars are provided simultaneously. A built-in dot generator provides small, sharp dots with which to check color receiver con-



vergence and linearity. No other equipment needed to produce colors on TV receivers. Output at video frequency, variable to 1.4 v peak-to-peak positive and negative into 75 ohm load. Kay Electric Co., Pine Brook, N.J.—TELE-TECH & ELECTRONIC INDUSTRIES.

New Products

MAGNETIC AMPLIFIER

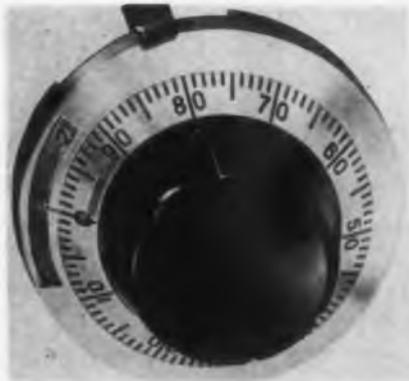
Type SMA4-102 magnetic amplifier has the following specifications: frequency, 400 cps; line voltage, 115 v; dimension; $4\frac{1}{8} \times 3\frac{5}{16} \times 4\frac{3}{16}$ in. The unit is typical of the conventional and min-



iaturized servo and resolver amplifiers designed and fabricated to meet customer specifications covering system requirements. Complete systems, such as gear trains and stabilization for given kinematic requirements can be supplied. Servo-motor, tachometer-generator combinations are also available. **Ketay Mfg. Corp., 555 Broadway, New York 12, N.Y.—TELE-TECH & ELECTRONIC INDUSTRIES.**

COUNTER

The Rb series "Duodial" is used in electrical, mechanical, hydraulic, and pneumatic applications to count accurately the turns of a rotating component. Calibrated to count hundredths of a turn,



an inner dial, integral with a black nylon knob, fastens onto the component shaft. An outer dial is calibrated to count the number of complete turns up to 15. Models are available to fit $\frac{1}{4}$ in. and $\frac{1}{8}$ in. diameter shafts. Nominal diameter is $1\frac{1}{16}$ in. Nominal weight, $2\frac{3}{4}$ oz. **Helipot Corp., 916 Meridian Ave., South Pasadena, Calif.—TELE-TECH & ELECTRONIC INDUSTRIES.**

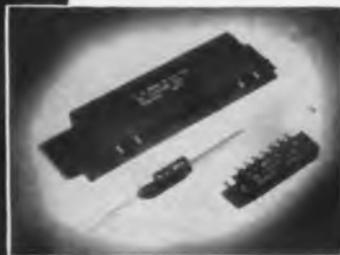
More New Products Next Page

Delay Lines

—by Brew—

accuracy
dependability
uniformity

Here is the one place where all types of delay lines are available to meet your needs . . . *distributed constant, lump constant, and solid.* The advanced design of Brew delay lines and the special manufacturing techniques assure you of the greatest possible accuracy and dependability. The large number of companies that depend on Brew for delay lines is proof of their superiority. Today you find Brew Delay Lines on many types of equipment in both commercial and government applications.



Distributed constant delay lines

Highly consistent. Attenuation as low as 1 db per microsecond. Rise times to 0.035 microsecond are possible for short delays. Characteristic impedance from 500 ohms to 2500 ohms. Standard delay tolerances 0.05 microsecond, closer if required. Hermetic seal mountings and miniaturized design.

Lumped constant delay lines

Lumped constant lines are designed and produced to meet the customer's most stringent electrical characteristics. Size, weight and mounting techniques are consistent with the electrical requirements. All lines exhibit excellent thermal and shock resistant qualities. Hermetically sealed mountings are available. Quick delivery on prototypes.

Solid delay lines

Frequency range from 5 to 100 MC. Bandwidth 5 MC at 20 center frequency to 14 MC at 50 MC center. Delays accurate to .1%. Low attenuation of delayed pulse. Spurious responses 40 DB below delayed pulse. Triple travel at least 30 DB below delayed pulse.

Consult Brew about your next delay line requirement and you'll get the answer you want. Yours for the asking . . . a new Brochure covering Brew Delay Lines and also describing the technique used by Richard D. Brew and Company for the measurement of delay lines.

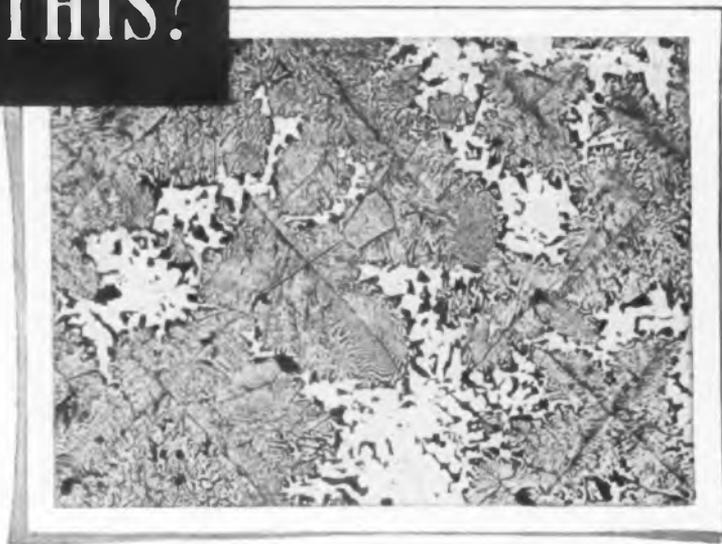
BREW

Airport Rd., Concord, N. H.

Richard D. Brew and Company, Inc.
design · development · manufacture

WHAT IS THIS?

- Photo of earth terrain taken from a guided missile?
- A piece of cobalt?
- Close up of leaf structure?



If you answered cobalt you are correct. The illustration is a photomicrograph of a piece of cobalt magnified 80 times.

THE PROBLEM: In making such a photograph the microscope camera must be completely isolated from vibration. Even the slight tremor caused by a step on the laboratory floor can affect the accuracy and clarity of the photograph.

William J. Hacker & Co., Inc., New York, agents for the Reichert Research Metallograph, brought this problem of vibration to Robinson.

THE SOLUTION: Since conventional types of vibration control systems were inadequate, Robinson engineers designed a mounting base employing their exclusive all-metal resilient cushioning material, Met-L-Flex. This mounting system is so sensitive it will isolate vibration from every angle, and keep the camera free-floating and motionless at all times.

Do you have a problem of Vibration Control in your business?

This same engineering know-how and skill can be put to work on your vibration control problem . . . whether it involves precision instruments, electronic or television equipment, aircraft, motor vehicles, home appliances, or industrial machinery of any size or weight.

Unlike old fashioned rubber mountings, Robinson Met-L-Flex* mountings

are unaffected by age, oil, bacteria, water, dust, dirt or temperature extremes. They are inherently damped, and they do not pack down or wear out.

A letter or telegram will bring a Robinson engineer to analyze your particular problem and suggest a solution. Write or wire us immediately. Industrial Division, Dept. TT6.

*MET-L-FLEX is the copyrighted designation for the all-metal resilient cushions developed and pioneered by Robinson.

ROBINSON AVIATION INC.
TETERBORO, NEW JERSEY
Vibration Control Engineers

362 For product information, use literature card on last page.

New Products

TURRET TUNER

The TV 900 82-channel turret tuner, designed to switch stations automatically, and provide better performance over the entire spectrum, can be mounted as a replacement unit in the



space used for any VHF tuner, or on the side of the cabinet. Improved performance is achieved by use of the new 6AN4 tubes. One is employed as an r-f amplifier for all 82 channels. The other is used in place of a crystal mixer. A 6T4 oscillator operates at the fundamental with full output, even on channel 83. Anchor Radio Corp., 2215 S. St. Louis Ave., Chicago 23, Ill.—TELE-TECH & ELECTRONIC INDUSTRIES.

MICROPHONE

The 670, a high quality directional microphone, weighs only 1¼ lbs. and affords greater mobility under broadcast conditions. The unit has impressive cardioid characteristics with front-to-



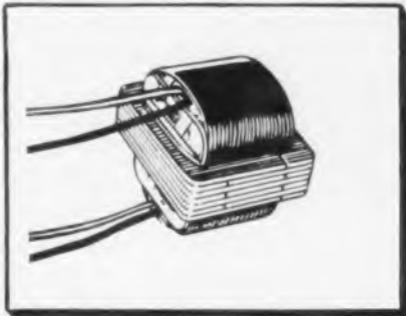
back discrimination averaging 18 db. A new feature enables variation from omni-directional through figure 8 to cardioid pattern, and provides output impedance of 30/50 ohms and 150/250 ohms. Output level is -58 dbm. Provided with three standard thread fittings and an XL plug. Altec Lansing Corp., 161 Sixth Ave., New York 13, N.Y.—TELE-TECH & ELECTRONIC INDUSTRIES.

TELE-TECH & ELECTRONIC INDUSTRIES • June 1954

New Products

TRANSISTOR TRANSFORMERS

A complete line of transistor transformers has been designed for use in transistorized circuitry—such as hearing aids and other audio devices. Units



are available for input, interstage, and output applications. Size of the unit is $\frac{1}{2} \times \frac{7}{16} \times \frac{3}{8}$ in. Frequency response is flat from 200 to 10,000 cps. Power output, maximum undistorted level, is 15 mw. over the flat frequency range. Telex, Inc., Telex Park., St. Paul, Minn.—TELE-TECH & ELECTRONIC INDUSTRIES.

RESISTORS

A complete new line of "Borohm" resistors meet and exceed requirements of MIL-R-10509A, Characteristic "R," as proved by temperature cycling, moisture resistance, and load life tests. Units have epoxy resin coating which does not crack or chip under rough handling. Three borocarbon types are currently available: BC20— $\frac{1}{2}$ watt, BC25—1 watt, and BC30—2 watt. Standard resistance tolerances are 1, 2, and 5% with stability averaging 0.25 after 1,000 hour load life tests. Shallecross Mfg. Co., Collingdale, Pa.—TELE-TECH & ELECTRONIC INDUSTRIES.

FLUORESCENT PENCIL

The "Brite-Line" 7-inch pencil with a $\frac{3}{16}$ in. wax-stearate base fluorescent lead is available in a white-green color that is invisible on white or light surfaces but fluoresces to a brilliant green when activated by "Blacklight." Combined with Blacklight equipment the pencil is useful for radar-plotting, night field operations, fire-control scoring, etc. Encased in a cedar sheath, the pencil can be sharpened with a conventional sharpener. Norco Manufacturing Co., 392 Bleecker St., New York 14, N.Y.—TELE-TECH & ELECTRONIC INDUSTRIES

More New Products Next Page



Get this latest booklet!
...a new concept of

Vibration and Shock Control

Special types of Robinson all-metal (Met-L-Flex) mountings described in this booklet incorporate advanced design features which have been developed after extensive research and laboratory work, collaboration with missile designers and service experience.

Exclusive Robinson all-metal designs provide damping four times better than conventional mounts employing rubber, organic or synthetic materials. *This high damping results in utmost stability assuring greater reliability of the mounted equipment.*

Yours for the asking, the new booklet (No. 800) offers the answers to many exacting and unusual problems of mounting electronic equipment in supersonic aircraft and missiles.

The booklet includes engineering data and specific examples of various types of mounts and engineered mounting systems currently being applied and used in important missile projects. Send for your FREE copy today.

New Standards of Vibration Control

Whether your problem involves precision instruments, electronic equipment, aircraft, motor vehicles, home appliances or industrial machinery, we will tackle it with the same engineering know-how and skill that has marked Robinson as leaders in the field of airborne vibration and shock control. Write or wire, stating your problem. Dept. TT-7.



COAXIAL SWITCHES and MICROWAVE

Test Equipment



REMOTE CONTROL SWITCHES

28 V. DC., 110 V. DC.—Compact, lightweight—available in Radial, spring return; Radial, transfer; parallel connector configuration.

115 V. AC., 60 cycle—Compact, lightweight—available in Radial, spring return; parallel connector configuration.



MANUAL CONTROL SWITCHES

Compact, lightweight—available in Radial; parallel connector configuration.

GENERAL CHARACTERISTICS—(all switches)

Frequency range	0 to 10,500 MC
VSWR	1.2:1 max. at 3000 MC
Insertion loss	0.3 db max.
Crosstalk	greater than 60 db at 3000 MC greater than 40 db at 10,500 MC
Operation Life	10,000 cycles, min.
Construction	weatherproof
Connectors	N, BNC, C, HN, BM, LM
Positions	2, 3, 4 and 6: single and double pole

Easily adaptable for specialized usage.



"S" BAND BEACON

A highly miniaturized receiver-transmitter for accurate telemetering in missile application. Supplied with power supply, cable and antenna (not shown).

"X" BAND TEST EQUIPMENT

Test set BMS (AN/UPM-10A) is a portable microwave signal generator for testing and adjusting beacon equipment and radar systems operating in the range of 8500 to 9600 MC. Measures power and frequency of external signals. Supplies pulse-modulated, square wave-modulated or unmodulated signals of known power and frequency. Also supplies frequency-modulated signals.



GENERAL COMMUNICATION COMPANY
681 Beacon Street, Boston 15, Massachusetts

SUBMINIATURE VOLTAGE REGULATOR TUBES

NEW!

DEPENDABLE!

INEXPENSIVE!

Type	Starting Voltage	Operating Voltage	Maximum Current
65ST2-32	67 VDC	65 VDC	1.5 MA
90ST2-32	110 VDC	90 VDC	1.5 MA
140ST2-32	150 VDC	140 VDC	1.5 MA

Other Voltages & Currents to your Specifications

Complete Technical Data Furnished on Request

Signalite Inc.—41 Neptune H'wy.—Neptune, N. J.

Actual Sizes Shown

New Products

POWER BRIDGE

The Electro-Metric VHF-UHF power bridge covers a frequency range of 10-1,000 MC, and measures power levels from 2 μ w to 30 mw in six ranges, 0.1 mw through 30 mw, full scale. The circuit is self-balancing. Input impedance is 300 ohms-balanced. VSWR is better than 1.3 in the specified frequency range. Total error is less than 5%. The unit has an extensive range of applications including gain and transmission measurements. Recorder connections are made available. **Electro-Metric Instrument Co., 241 Centre St., New York 13, N.Y.—TELE-TECH & ELECTRONIC INDUSTRIES.**

FLARE MACHINE

The Model 2310 automatic flare machine produces flared necks for cathode ray tubes at the approximate rate of 800 per hr. from standard tubing lengths. The machine feeds, cuts, and flares automatically. Cutting is by hot-chill technique. The machine also can be used as a tubing cutter by locking out the flaring mechanism. **Kahle Engineering Co., 1307 Seventh St., North Bergen, N.J.—TELE-TECH & ELECTRONIC INDUSTRIES.**

WIRE CLOTH

... all meshes and metals precision-woven for many applications in the electronic industries.

✓ Direct factory sales

✓ Immediate shipment from our Pittsburgh warehouse on a wide range of commonly used materials and meshes.

✓ Brass, copper, monel and pure nickel etc. in various meshes and weaves, or stainless steel and phosphor bronze woven up to 400 x 400 mesh.

For fast service,

please contact . . .

FACTORY ENTERPRISES, INC.

P. O. Box 4025
Pittsburgh 1, Pennsylvania
Telephone: Museum 1-1199

PERSONAL

John Lachmann, who until recently was engaged in chemical research at E. I. DuPont de Nemours, has been appointed exec. technical director at the Chester Cable Corp., Chester, N. Y.

Walter R. Wolfgram, formerly plant manager for Standard Transformer Corp., Chicago, Ill., has been appointed factory superintendent for Jensen Manufacturing Co., Chicago, and has taken over all the manufacturing operations at the Chicago plant.

John R. Curran was promoted to the position of director of engineering at the Hammel-Dahl Co., Providence, R. I.



J. R. Curran

manufacturers of automatic control equipment. He had been associated with the firm since 1945, the last four years as chief design engineer.

Roy Witte has been appointed chief mechanical engineer, and **William F. Boylan** has been named chief electronic engineer at Magnecord Inc., manufacturers of professional tape recorders. Witte had previously been with the Hallicrafters Co., as chief mechanical engineer, and at Motorola Inc. He joined Magnecord in 1953. Boylan joined the company in 1950 as an electrical engineer after previously serving as an instructor of electronics and mathematics at the DeForest Training School.

John H. Graham, **Jerome C. Hill**, **James B. Humfeld**, **Wesley A. Wright**, **Joseph E. Zimmerle, Jr.**, **Donald W. Baker**, **Frank T. Hata**, **Claude G. King, Jr.**, **Ira W. Martin**, and **Logan E. Setzer** have become members of the technical staff of the Hughes Research and Development Labs., Culver City, Calif., as electrical engineers.

Harold T. Westerheim and **Theodore R. Edmonds** are recent additions to the engineering staff of Varo Mfg. Co., Garland, Texas. Mr. Westerheim was formerly with Minneapolis-Honeywell and the Chance-Vought Aircraft Co. Mr. Edmonds was with Sylvania Electric Products, Inc. where he was active in tube manufacturing processes.

American Beauty

**ELECTRIC
SOLDERING
IRONS**
for



**BETTER
SOLDERED
CONNECTIONS**



DEPENDABLE . . . DURABLE . . . EFFICIENT. Since 1894 American Beauty Electric Soldering Irons have been the standard for performance for all soldering irons.

NOW . . . American Beauty gives you precision production soldering with the new **BANTAM**—a light, sturdy, quick-heating soldering iron with small-diameter tip.

HEAVY-DUTY ELEMENT-IN-TIP—3438
A different, more efficient electric soldering iron than any on the market. An iron designed especially for heavy-duty or production-line use. It embodies a new type of heat application with the element permanently-embedded in the tip.

**TEMPERATURE REGULATING
STAND 475**

Set the thermostat at the desired temperature—your iron will be ready to use without waiting.

WRITE FOR DESCRIPTIVE LITERATURE

SINCE 1894—ALWAYS DEPENDABLE
American Electrical Heater Company
NO. 140-H DETROIT 2, MICHIGAN



"Nobleloy" METAL FILM RESISTORS

TRADE MARK REG.

FOR APPLICATION WHEN PERMANENCY AND HIGH TEMPERATURE STABILITY — ARE A MUST

Efficient manufacturing methods and adequate plant equipment combined with our research facilities maintains our pace with electronic progress to economically provide dependable, high quality resistors. The Nobleloy metal film resistor is our tribute to the electronic industry for a fixed resistor that assures initial accuracy and high stability.

NOBLELOY TYPE NF 1/2 WATT

A metal film miniature precision resistor with a metallic resistance element deposited on a low loss ceramic carrier and axial leads firmly fastened to silver contact bands. A layer of vitreous enamel protects metal film against unusual atmosphere conditions. Primarily designed to meet MIL-R-10509A specifications.



NOBLELOY TYPE X

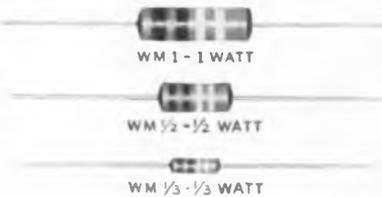
A metal film resistor with radial leads firmly fastened to extremely low resistance metal contact films to reduce contact resistance. It has a hollow center that permits greater heat radiation to withstand overloads, and possesses excellent resistance stability under adverse operating conditions. Each unit marked with resistance and tolerance.

NOBLELOY TYPE PX

A metal film resistor identical in construction as type X. A different improved alloy resistance film is used to allow for better temperature coefficient. Each unit marked with resistance and tolerance.

WM WIRE WOUND RESISTORS

Composed with a minimum of .0015 inch wire that is wound automatically for true parallel winding to prevent shorting at turns. Terminals are securely bonded for permanent connections to the winding. They are moisture resistant and recommended for circuits requiring very low resistance, which is not ordinarily available in the carbon style.



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PLASTICS for ELECTRONICS

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New Product Briefs

PRECISION SWITCH. High-speed line for telemetering and strain gauge sampling, parameter display, drift correction, etc., available at General Devices, Inc., P. O. Box 253, Princeton, N. J.

INSTRUMENT SWITCHES. Shallcross Mfg. Co. announces mica-phenolic push-button types 10057 SPST, 10058 DSPT, 10059 SPST, 10060 DSPT. Contacts normally open. Units 2-3/8 in. lg. Mount in 3/8 in. holes.

CHOKES. type CL1/2, CLA, CL1, CL2, introduced by International Resistance Co., Phila., Pa., have range size and characteristic combinations that enable accurate specification of space and electrical requirements.

POWER SUPPLY. type 5206, made by Langevin Mfg. Corp., New York, N. Y., supplies plug-in ac power for amplifier filaments and dc for plate circuits. Unit power 22 type 5116 amplifiers.

REFLECTORS. All-alum. heliarc-welded framework and passive reflector by Gabriel Electronics Div., Norwood, Mass., can be hoisted in tower position as a unit to where U-clamps have been set at required height.

TELEPHONE HANDSET. TH10, specifically designed for 2-way communications by Shure Bros. Chicago, Ill., has controlled-reluctance assembly as receiver; high-output balanced-response carbon transmitter.

CAPACITORS. series HP, made available by Special Products Div., Aerovox Corp., New Bedford, Mass., have disc and cylindrical dielectric bodies that save space and weight. Use no strategic or imported materials.

LIGHT OVEN. JK09, mass-produced by James Knights Co., Sandwich, Ill., measures only 1.28 in. in diam. by 1.70 in. high and weighs only 1.5 oz., but can meet a specification of 75° C. over a -55° = +70° range.

TUBES. General Electric Tube Dept., Schenectady, N. Y., has announced type GL2C39-B, an improved direct replacement for type GL-2C39-A. Also, type GL-6265 for existing aircraft and mobile 2-way radio receivers.

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New Product Briefs

GERMANIUM DIODES, "Red Dot" series, made by International Rectifier Corp., El Segundo, Calif., resist exposure to 95% relative humidity at 0° to 85° C. for 500 hrs without appreciable change in back resistance.

MICROPHONE CONNECTORS, "QUICK" name, made by American Phenolic Corp., Chicago, Ill., are bullet-shaped, smaller, and designed to operate with one hand. Contacts are gold plated; dielectric, "Amphenol" type 1-501.

TRANSCRIPTION ARM, model 202, turret-head, announced by Fairchild Recording Equipment Co., Whitestone, N. Y., has viscous damping but a completely changed application method that eliminates sluggishness.

MATCHED DIODES, pair-mounted in a single bracket, type 1N35, supplied by Selectron and Germanium Div., Radio Receptor Co., New York, N. Y., supersedes the more difficult to mount and costlier handling double bracket.

AMPLIFIER, tube type 6DB6, announced by Westinghouse Electronic Tube Div., Pittsburgh, Pa., is for use as a color-demodulator, synchronous-detector in color TV circuits. Can be driven harder and gives larger outputs.

VARIABLE RESISTOR, type LR6, tab-mounting, with insulated, hexangular, slotted shaft extending from front for easy control adjustment on either side, announced by Components Div., Stackpole Carbon Co., St. Marys, Pa.

WAVEGUIDE DISCONNECTION, fixture announced by Airtron, Inc., Linden, N. J., enables fast, positive, waveguide flange decoupling without use of tools. Fits waveguide sizes from 2.0 x 1.0 down to 0.360 x 0.220 O. D.

INDICATORS, phase sequence PS 160 for 60 and PS 1400 for 400 rps for 110, 120, 440 v. operation available with standard and dimmer type lenses at Brunswick Instruments, New Brunswick, N. J.

RESISTORS, miniature, wire-wound types 27 E and 28 E "Blue Jacket," announced by Sprague Electric Co., North Adams, Mass., are specifically designed for point-to-point wiring, terminal board mounting, and dip-soldering.

COMPARISON BRIDGE, type No. 1010A, made by Freed Transformer Co., Brooklyn, N. Y., for laboratory and production testing, is self-contained and ac operated. Frequencies: 60 CPS, 1 KC and 1 KC. Ranges are 5% and 20%.

RELAYS, The high-speed, polar-rotary type "KP" relay described by Union Switch & Signal Div., Westinghouse Airbrake Co., Pittsburgh, Pa., has operated more than 100,000,000 times without failure. Power: 5 to 150 mw.

INSULATION TESTER made by Slaughter Co., Piqua, O., enables detection of insulation weaknesses, shorts, or grounds at final test or during use by the application of high voltages to the product. Has detachable test leads.

AMPLIFIER, beam power 6094, offered by Bendix Aviation Corp., Red Bank Div., Eatontown, N. J. to replace 6AQ5/6005 and other such tubes. "Nonex" bulb and stem, tungsten pins, and low exhaust enable 300° C. operation.

AMPLIFIERS, linear model 218 patterned after O.R.N.L. models by Atomic Instrument Co., Cambridge, Mass., has increased stability for use with proportional counters, scintillation counters, and other nuclear detection devices.

"CONOLITE" EPNXXP, a new plastic material offered by Continental Can Co., New York, N. Y., has physical and electrical properties comparable with NEMA standards, accepted by Underwriter's Labs. Width 36 in., 0.025 to 0.062 in. thick.

MOTORS, fan cooled, constant normal speed; available at Sterling Electric Motors, Inc., Los Angeles, Calif., in frame sizes 182 and 184. Incorporate new NEMA approved standards and eliminate 50% inactive space in former designs.



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NEW MODEL C

"BALANCED" TRIPOD HEAD

gives you correct center of gravity

... in a Flash!

No more groping for center of gravity. The new Model C "Balanced" Tripod Head is equipped with a convenient, accessible positioning handle mounted below the top plate, which allows the operator to reposition the camera to the correct center of gravity. No matter what focal length lens is used on the camera turret, the camera can be balanced on the Model C Head without loosening the camera tie-down screw.

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FOR Remote Operation with Rust and other Remote Control Systems

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Commercials fall into place—accurately—with the Fairchild 530. Exact timing of transcribed program material is assured with this superior transcription turntable.

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New Product Briefs

TERMINAL for either solder or "Tineman" clip mounting is offered by Bennett Products Mfg. Co., Palo Alto, Calif. Available in either feed-through or stand-off modes for 0.250 in. punched holes. Design is ceramic to metal.

ROTARY ACTUATOR, announced by Globe Industries, Inc., is 2 x 5 1/16 in. in size. Capacities range up to 2,000 in.-oz. torque depending on output speed. Voltages range from 6 to 1100 v. Units can be developed for special applications.

GEAR BOXES, high precision, introduced by Link Aviation, Binghamton, N. Y., have speed ratios from 20 to 1 to 3,125 to 1. Units have less than 0.01 in.-oz. frictional torque at input shaft. Slow shaft backlash at 500 rpm speeds has been less than 0.27°.

REGULATOR AND INVERTER ASSEMBLY, model M-1087, made by W. L. Maxon Corp., New York, N. Y., is used for high precision rate gyros, and fire control and navigational system motors and servos. Average control of ±400 ±0.1 CPS.

LAPPING STONE, Fixed stone distributed by Abrasive Engineers, Waukegan, Ill., enables lapping hardened steels, soft metals, and alloys to a 2 micro-inch finish after grinding and fine machine finishing.

HF RESISTOR, type HFR, miniature 1/4 W unit offered by International Resistance Co., Phila., Pa., a 9.16 in. body; 3.32 in. body diam. (over caps), lead length, 1 1/2 in.; lead dia. 0.025 in. Meets MIL-R-10683A.

SELENIUM RECTIFIERS, offered by International Rectifier Corp., El Segundo, Calif., for currents under 50 ma. The "CR" series (CR08), the smallest, 0.375 in. diam., 0.625 in. long; CR58, the largest, 0.750 in. diam., 0.625 in. long.

(Continued on page 370)

BARRIER STRIPS NEW DESIGN

**SAVES
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AND
MONEY**



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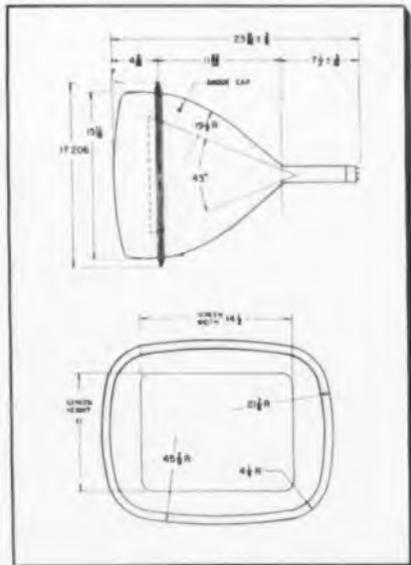
GARDE
MANUFACTURING COMPANY
588 Eddy St. Providence 3, R. I.

"Chromatron" in Production

Chromatic TV Labs. has launched pilot production of the Chromatron PDF 21-3, an improved version of the Lawrence color TV tube. This new design incorporates a radiation-suppressed Chromapac (color grid structure at front of tube) which limits radiation to less than 15 μ v at 100 ft. Samples of this single-gun tube are being furnished; delivery is 60 days.

Dimensions

Picture size is 14.5 x 11 in. Neck diameter is only 1 1/16 in. See accompanying drawing for other dimensions. The tube uses magnetic focus and deflection, and electrostatic color switching. Deflection angles are 65° diagonal, 55° horizontal, and 43° ver-



Dimensions of new Chromatron PDF 21-3

tical. Typical operating voltages (design center ratings in parentheses) are: Anode, or accelerating dc between cathode and phosphor plate, 18 kv (18); grid #3, 3.5 to 6 kv (8); color deflector, 400 v. peak (1000); seeker, or dc between color deflectors and grid #3, 150 to 600 v. (600). Rating for color grid to phosphor plate is 14.5 kv dc. Need for static and dynamic convergence equipment or adjustments is reportedly eliminated.

For a description of how the Chromatron operates, see Feb. 1953 TELE-TECH & ELECTRONIC INDUSTRIES, page 71.



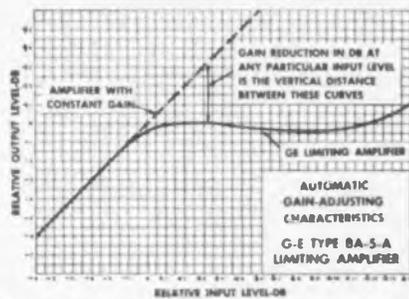
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- Exceedingly low steady state distortion and noise level because of inverse feedback gain reducing circuit design.
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- Output Impedance 600 ohms
- Provides limiting over a 12 db range with only 1/2 db rise in output
- Frequency response — \pm 1 db, 50 to 15,000 cps under any conditions of gain reduction



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Electronics Park, Syracuse, N. Y.

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New Product Briefs

FREQUENCY METER. "Colortone," TS-175 A U has a frequency range of 85-1,000 MC. Calibration accuracy is $\pm 0.005\%$; stability, $\pm 0.0025\%$. Made by Colortone Electronics, Inc., New York, N. Y. Components in accordance with JAN. specs.

CYCLE TIMER. VTP Model F-216, made by Vacuum Tube Products, Oceanside, Calif., for resistance welding, operates from 220 v, 3-wire, 50-60 CPS source. Weld time is adjustable from 1/6 to 1/2 CPS. Output 40 amps.

DECADE AMPLIFIER. Model 103, wide band dc, announced by Kalbfell Labs., Inc., San Diego, Calif., provides step-wise variable gains of 0, 20, 40, and 60 db from dc to high ac frequencies. Chopper-stabilized circuitry.

CALIBRATOR. Model 420, designed by Ballantine Labs., Inc., Boonton, N. J., combines stable dc and ac voltage sources. Output range 0 to 10 v; 3 outputs dc, rms, and peak-to-peak of 1,000 CPS. sine wave.

DC VOLTAGE STANDARD. Model VRS15, made by Sorensen & Co., Inc., Stamford, Conn., has an output of 1 1/2 v. dc at 6 ma; output impedance 12 ohms. Ripple, 350 μ v. Stability, drift in 24 hrs. under 1 mv. Input, 95-130 v. ac, 60 CPS.

"SYNCOVERTER." a small, non-resonant, reed-type inverter produced by The Bristol Co., Waterbury, Conn., converts low-power dc signals to alternating voltages. Hermetically sealed. Fits in 7-pin miniature tube socket.

CONNECTORS. subminiature, made by Harvey Hubbell, Inc., Bridgeport, Conn., has automatic locking, quick-disconnect action, vibration-proof lock, and low-contact resistance. Size, approx. 1/2 in. Used on printed circuits.

SHIFT REGISTERS. Four new models of magnetic shift registers designed by Magnetics Research Co., Chappaqua, N. Y., for computer and other electronic systems can handle information rates to 125 KC. Unit is self-contained.

PHAZOR PHASE METER MODEL 200A



\$349.50 F.O.B. New York, N. Y.

Measures phase shift in transformers, amplifiers, filters, and phase displacement networks.

- Measures from 0 to 360 degrees.
- Readings not affected by noise and harmonics.
- Phase shifts of the order of .01 degree can be measured employing special circuit techniques.
- Measures in-phase and quadrature components separately.

SPECIFICATIONS

Accuracy—Basic accuracy plus or minus 2 degrees. Plus or minus 1 degree due to meter error.

Noise and Harmonic Rejection—40 db. down

Sensitivity—6 millivolts full scale

Maximum Input Voltage—125 volts RMS

Peak Input Signal—400 volts

Frequency Range—20 to 20,000 cps.

Input Impedance

High Gain—2.0 megohm shunted by 25 mmfd.

Low Gain—2.5 megohm shunted by 10 mmfd.

Reference Input Impedance—4000 ohms

Power Supply—105 to 125 volts, 60 cps., 25 watts

Dimensions—Length 15 in., Hgt. 9 in., Depth 8 in.

Weight—25 pounds

INDUSTRIAL TEST EQUIPMENT CO.
55 EAST 11th ST., N. Y. 3 - Tel: GR. 3-4684

Conelrad

(Continued from page 178)

ville of WWDC, Washington D.C.

This switch, shown in Fig. 6, will presently handle three channels but can be extended to more if necessary. Six stations could be handled by paralleling two on each channel. The time disc shown on the drawing does not show the actual time intervals but has been constructed so as to vary the interval that each station will be on the air from 6 to 40 seconds. The switch has been constructed so that it will run unattended for one hour and forty minutes before beginning to repeat the sequence. Manual operation of the stepper is provided in the operation of a push button appearing on the front panel and labeled PB1 on the drawing. Means for eliminating any channel in the event of failure of the channel is provided by the selective operation of SW4, SW5 or SW6 as required. Operation of the ganged switch SW3 provides distribution of program failures either sequentially or simultaneously. Si-

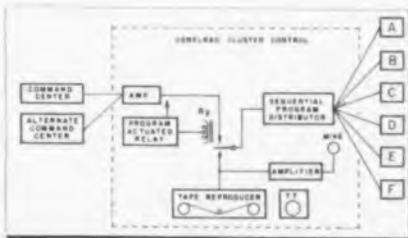


Fig. 7: Typical 6-station Conelrad cluster

multaneous distribution is useful in test operations of cluster connecting lines and in transmitting "ALL CLEAR" notices at the termination of an emergency.

The 6J5 vacuum tubes working in connection with relays number 4, 5 and 6 provide the necessary overlap when switching from channel to channel. This is to prevent breaks in programming. Overlap time can be varied from 1/2 to 2 seconds by the operation of P2, P3, or P4. The 60 cycle tone input to each channel was included so as to make possible the use of tone actuated relays at each transmitter in the cluster. Since program actuated relays are presently being used this feature is not operative but is available for use at a later date if necessary.

Fig. 7 shows in block form the manner of operation of one of the clusters in a major city on the east coast. The radio stations "A" through "F" are connected to the sequential program distributor unit at the cluster control station by Schedule F lines. The distributor



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TYPE	μF/ft	IMPED.Ω	O.D.
C 1	7.3	150	.36
C 11	6.3	173	.36
C 2	6.3	171	.44
C 22	5.5	184	.44
C 3	5.4	197	.64
C 33	4.8	220	.64
C 4	4.6	229	1.03
C 44	4.1	252	1.03

NEW MX and SM SUBMINIATURE CONNECTORS
Constant 50Ω 63Ω 70Ω impedances

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DEVELOPING NEW ITEMS TO SUIT
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5 Cubic Feet (140 Liters) Per Minute
GUARANTEED VACUUM 0.0001mm Hg. or 0.1 Micron



- FASTER PUMPING
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- VISIBLE OIL LEVEL
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Overall dimensions for pump and motor 15 1/2" high and 11" wide x 19 3/8" long.

1402B. DUO-SEAL PUMP. MOTOR-DRIVEN. A No. 1402 Pump mounted on a base with a 1/2 H.P. 115 volt A.C. motor. Complete with pulleys, belt, and cord. **Each \$295.00**

1402G. BELT GUARD for 1402B Duo-Seal Pump. **Each \$15.00**

1402. DUO-SEAL TWO STAGE VACUUM PUMP. Pump unit only not mounted on a base, but with a 10 inch grooved pulley, a supply of oil, and directions for use. **Each \$225.00**

No. 1402 B

The 1954 edition of the Welch Catalog on Duo-Seal Vacuum Pumps is now available. This 48 page book lists many new items of interest. A complete description, including performance curves of the Duo-Seal

Pumps ranging from 21 liters per minute to 375 liters per minute, is given, as well as a greatly enlarged listing of Diffusion Pumps, Vacuum Gauges and accessories.

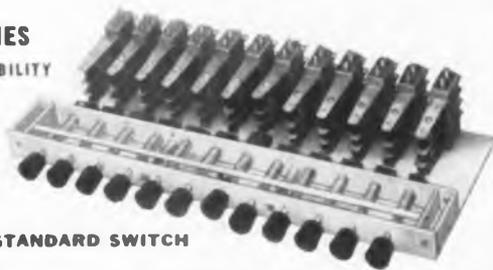
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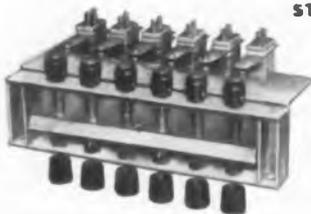
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WITH HIGH CURRENT-HANDLING ABILITY

Perform faultlessly in applications where dependability and long life are of the utmost importance.



STANDARD SWITCH



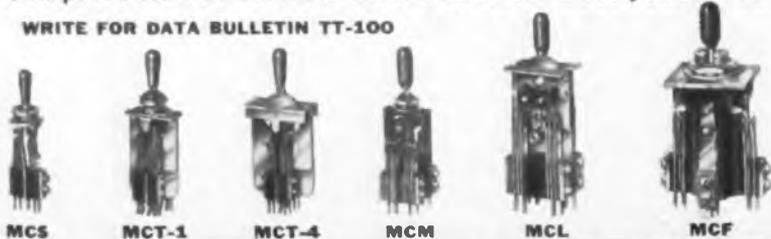
RIGHT-ANGLE

The model MPB Switch consists of a sturdy frame on which is mounted push button units from two to a maximum of twelve positions. They can be supplied in the following types: Accumulative Lock; No Two Interlock; Lock Release; and Non-Lock. Parts are manufactured to meet Government specifications for aircraft and other electrical applications. Each switch is tested after assembly to withstand 2500 volts, 60 cycle between contact springs and frame.

WRITE FOR DATA BULLETIN TT-300

A complete line of LEVER SWITCHES to meet your needs

WRITE FOR DATA BULLETIN TT-100



MCS

MCT-1

MCT-4

MCM

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MCF

GENERAL CONTROL COMPANY

1200 SOLDIERS FIELD ROAD (Established 1934) BOSTON 34, MASS.

Conelrad

(Continued from page 371)

unit automatically switches the program from one station to another. At the station end of each of the lines is a program operated amplifier and associated relay with a time delay circuit to hold the transmitter on for whatever period is desired so that pauses in speech or music would not cause the transmitter to go off the air. It will be seen that programs may be directed into the distributor from both sides of the relay. One side takes the program from the Civil Defense Command Center or Alternate Center. The program actuated relay shown has the feature of pre-emptying the circuit whenever Civil Defense desires to break in with instructions or information. During pauses in speech, the relay switches over to the studio control and momentarily takes whatever program is being provided by the cluster control station.

Some difficulty has been experienced as a result of the time-delay feature utilized to keep the transmitters on the air during pauses in speech. The chief trouble occurs at the switch-over point from one station to another when the first station's carrier is still on the air without modulation. This situation is particularly troublesome when the first carrier is somewhat stronger than the second which results in the AVC action of the receiver holding down the volume so that the received signal from the second station is below the easily readable level. Then too, if there is any appreciable frequency difference between the two stations, the RF carrier beat note adds to the difficulty. It was also learned during the last test of the system that in order to provide intelligible coverage of a large metropolitan area that a relatively efficient antenna system must be used or that the power must be increased to compensate for the inefficiency. In certain instances where the broadcast transmitters are located a considerable distance from the center of the city, it appears that it is impractical to expect a 250 watt station, even with an efficient antenna, to provide the needed coverage. This is chiefly a matter of limitation imposed by skywave signals on the same channel. It was calculated that the effective service area of a cluster of stations during Conelrad operation would be within the 8 or 10 mv/m contour. Generally speaking, this has proven to be a practical value. There are a few areas where the intelligible service

has extended out to approximately the 2 mv/m contour. Where it is required to utilize stations in the 250 watt power category for a cluster, it may be necessary to broadcast Civil Defense information on a sectionalized metropolitan area basis, that is, broadcasting information designed for a particular section of the city only over the station that is known to give adequate coverage to that section. General types of programs such as music, etc., could then be broadcast in the usual manner for cluster operation without any particular regard for the 100% intelligibility factor.

Overall Capabilities

Although a detailed discussion of the navigational deception aspects of the Conelrad System is not appropriate here, I think it proper to say just a few words about the system from the overall standpoint of its capabilities of preventing an air raid from reaching its target. There has been some confusion on this point. The United States Air Force has integrated the entire program of electromagnetic radiation control into what they term "passive defense." It has never been thought of, nor intended that any such system of controlled operation of broadcast stations or those of any other service, could prevent a good air navigator from bringing a flight of planes to within a very close distance from the desired point. We know our navigators are able to do it, so probably those of other countries can too. However, if any difficulties arise in other navigating methods or procedures, it is agreed that one of the most useful adjuncts to navigation would be the radio compass. Consequently, normal operation of standard broadcast stations would immediately provide a multitude of sources for orientation of aircraft. It is common procedure for certain types of navigation both in the military and in commercial aviation, to use broadcast stations with the ADF with excellent accuracy. In one section of our country where radio ranges and beacons are few and far between, the 250 watt broadcast stations render an excellent service. So the Conelrad system was never intended to prevent an enemy flight from reaching its target, but only to make it more difficult by rendering practically useless its radio facilities for direction finding.

For an overall description of the Conelrad plan, see March 1953 *TELE-TECH & ELECTRONIC INDUSTRIES*, page 85.

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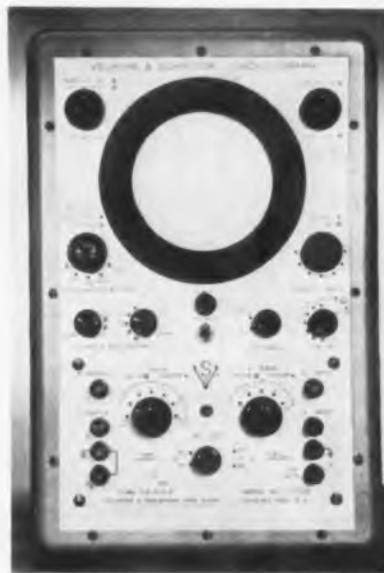
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Feedthru Capacitors

(Continued from page 182)

calculated characteristics.

Two of the capacitors appeared to deviate from the calculated characteristics in the highest portion of the range. The reason presumably was that in this region the dielectric constant and/or the dissipation factor of the ceramic had departed from their lower-frequency values, which is essentially the phenomenon previously preferred to as "Molecular Resonance." As was then indicated the effect is beneficial, rather than harmful, in that the attenuation has been increased above the calculated values.

While TE_{10} mode propagation might be expected in this region for the values of k calculated for these capacitors, it is unlikely that it would be in such phase as to cancel TEM propagation over any but a very narrow range. The effect therefore must be attributed to dielectric variations.

Design Considerations

While the calculated curves of Fig. 7 have been plotted in terms of normalized parameters, Z , A and B , it will be more informative to consider specific examples. As was mentioned earlier, the specific cases of a 2:1 ratio of outside to inside diameters of the ceramic, and terminal impedances of 100 ohms have been used.

Fig. 10 shows calculated attenuation characteristics for 470 μmf capacitors of different values of k , cl , z_{11} , or f , only one of these factors being independently chosen after the capacitance was specified, the others being related as shown by Fig. 3. The dissipation factor d was taken as 0.1. While seemingly high on the basis of low-frequency measurements this value checked quite well with the experimental data in the 100-1000 mc range. The curves of Fig. 15 indicate quantitatively the desirability of using as high a value of k as possible for a given capacitance with attendant short length and high resonant frequency, the only limitations being the minimum practical length and the higher mode cutoff frequency, which is a function of k alone. For example, from Fig. 3 it is seen that a TE_{10} cutoff frequency of 900 mc occurs with a k of 2000. If the capacitor represented by the $k = 4000$, $l = 0.058$ in. curve of Fig. 10 were to be used, higher mode propagation would be a possibility above 630 mc.



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In Fig. 11 are shown calculated curves for a length of 0.1 in., which was arbitrarily taken to be the minimum practical length. As has previously been indicated, with the sole exception of higher mode propagation, if the range of k is unlimited the optimum design for all cases will occur with the shortest length, unless the frequency is low enough that resonance is not a problem. The dissipation factor again was taken to be 0.1. From these curves the best design can be chosen for a particular frequency range. For example, for the UHF-TV range of 470-931 mc (including local oscillator range) a capacitance of about 400 μmf , corresponding to a k of about 2000 would be optimum. Special considerations such as the necessity of providing greater attenuation at lower frequencies, or the desire to increase attenuation at one end of the range at the expense of the other might dictate a modification of this choice.

For a length of 0.1 in., Eq. 24 shows that the TE_{10} cutoff is 1.354 times the quarter wave frequency, or .677 times the half-wave frequency. If



Fig. 14: Feed-thru cap as transmission line

the capacitor is being operated close to its half-wave frequency, higher mode propagation must be considered.

If the highest available value of k , with the 0.1 in. length, did not result in sufficient low-frequency attenuation, then the length might be increased. This would affect neither the magnitude nor the shape of the attenuation curve, but would compress it along the frequency scale, as the broken curve of Fig. 11 shows.

One interesting point which may be seen from the curves is that given a maximum value of k , and specifying a value of resistive terminal impedances, the maximum attenuation of the capacitor is limited. That is, over any range of frequencies, the characteristic impedance of the capacitor, rather than the capacitance determines the maximum attenuation. For example, if the highest k obtainable is 6000, for a 2:1 diameter ratio Z_0 becomes .536 ohms, and for a terminal impedance of 100 ohms, $Z = Z_0/Z_1 = 186.5$. From Eq. 30 or Fig. 4, the quarterwave voltage

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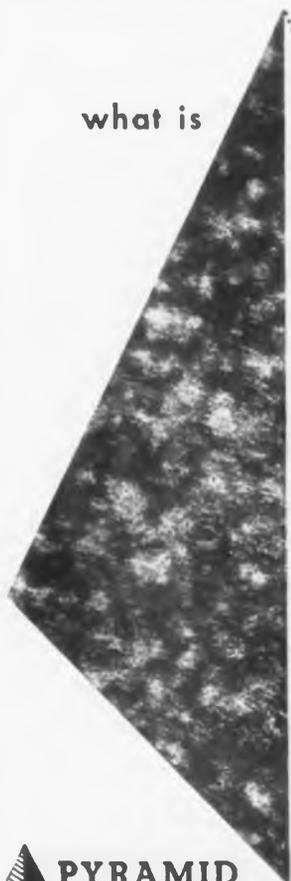
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Feedthru Capacitors

(Continued from page 375)

attenuation ratio then is 93.25, or 39.4 db, regardless of the capacitance and the frequency.

It is not to be assumed that a feed-thru capacitor must be specified so as to keep the half-wave resonant frequency above the operating range. If the capacitor has sufficient loss the voltage attenuation ratio at the half-wave point, while much less than at the quarter-wave frequency, may still be substantial. The requirements for other frequencies may dictate a sacrifice at the half-wave point. Chokes may be used which are self-resonant at this frequency, or at least have a high impedance, to raise the overall attenuation.

Although the assumption made as to constant, resistive, source and load impedances represents only rough approximations to a typical case, still the calculations and measurements made on this basis may be used for fairly accurate comparisons between the operation of different capacitors in most practical circuits, since for all cases except low frequencies and high-Q resonances in the capacitors, the driving-point impedance of the

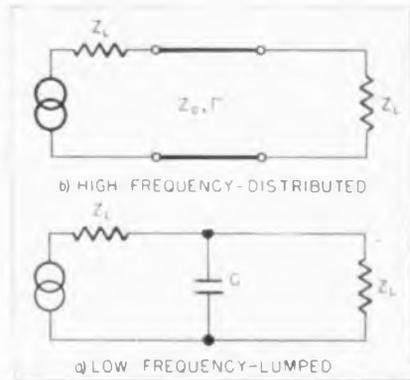


Fig. 15: Equivalent circuits of capacitors

capacitor will be small compared to source or load.

The experimental data show that button capacitors, both mica and ceramic, have an advantage over tubular ceramic capacitors with regard to the elimination of resonances, and high attenuation over the 0-1000 mc range. A well-designed tubular ceramic can only approach the performance of a button over this range.

Resonances in button-type capacitors, though, are seen to exist.

The measured curves illustrate the fallacy of specifying a capacitor on the basis of capacitance alone. Consider, for example, the 490 μmf (after

assembly), .110 in. capacitor of Fig. 8. It is seen that the quarter-wave resonance occurs at about 700 mc, and that resonance causes the attenuation to fall off at higher frequencies. Reducing the capacitance might be expected to increase the resonant frequencies and raise the attenuation in the vicinity of 1000 mc. But if the 402 μf , .160 in. capacitor were chosen to replace it the resonant frequencies would be found to have decreased, and the 1000 mc attenuation to have become substantially worse, since the detrimental effect of the increased length

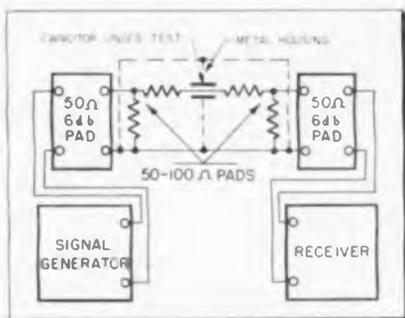


Fig. 16: Test set-up for making measurements

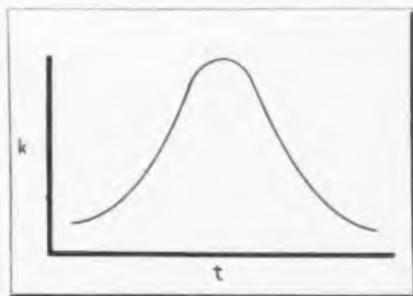


Fig. 17: Highest K is function of temperature

was greater than the beneficial effect of the reduced capacitance.

It must be cautioned that despite the apparently good correlation between theory and measurements, the extremely high temperature coefficients, which are typical of the high-K materials, limit the accuracy of any predictions.

Changing K

The temperature characteristic of these materials generally appears as illustrated by Fig. 17, where the temperature for highest k is dependent on the composition and processing, but is generally placed in the vicinity of 20°C. Temperature coefficients of over 10,000 PPM/°C are not unusual, so that the range of temperatures encountered in typical electronic equipment may readily cause a change of greater than 2:1 in k. A 2000 μf capacitor with a $\lambda/4$ resonant frequency of 400 mc at 20°C



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Feedthru Capacitors

(Continued from page 377)

may be 1000 μf with a resonant frequency of 570 mc at 80°C.

The following rules apply in general to the design or specifications of a capacitor for greatest attenuation wherever resonance is a problem:

- (1) The tube should have as thin a wall as possible.
- (2) The shortest practical silvered length should be used, subject to the limitation that if resonances occur only above the highest operating frequency, the length may be increased to improve attenuation primarily at lower frequencies. Depending upon individual requirements, the quarter-wave resonance should occur near or somewhat below

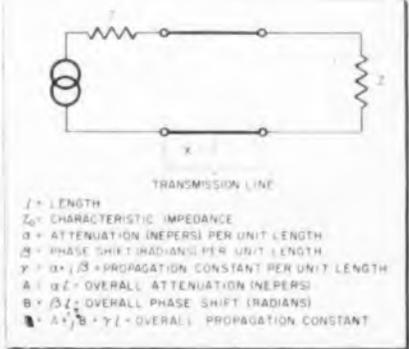


Fig. 18: Problems of cap as transmission line

the highest operating frequency.

- (3) The highest available value of k should be used, providing that the quarter-wave resonance does not fall too far below the highest operating frequency, and that higher mode propagation does not become a problem in the operating range.
- (4) The dielectric should be as lossy as possible.

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2. W. P. Mason and B. T. Mathias, "Theoretical Model for Explaining Ferro-Electric Effects in Barium Titanate," *Physical Review*, Vol. 74, p. 1622, Dec., 1948.
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5. G. I. Ragan, *Microwave Transmission Circuits*, p. 25, Vol. 9, Rad. Lab. Series, McGraw-Hill Book Company, New York, 1948.
6. F. E. Terman, *Radio Engineers' Handbook*, p. 119, McGraw-Hill Book Co., New York, 1943.
7. Ragan, loc. cit., p. 56.
8. Ragan, loc. cit., p. 29.

BULLETINS

(Continued from page 357)

Coil Winders

Catalog No. 54 recently released by Geo. Stevens Mfg. Co., Pulaski Rd. at Peterson, Chicago 30, Ill., contains 44 pages and a price list covering machines for virtually every coil winding need. Each machine is adequately described and illustrated, and appropriate technical data is presented.

Connectors

Tru-Connector Corporation, 416 Union St., Lynn, Mass., has released a comprehensive 24-page illustrated catalog that presents latest commercial and government types of r-f coaxial connectors and allied components for use in UHF through microwave frequencies.

Ceramics

"Titanate Ceramics for Capacitors," Bulletin 542, released by American Lava Corporation, Chattanooga 5, Tenn., outlines the physical properties, etc. of "AlSiMag" dielectric compositions and explains the applications of ceramic dielectrics.

Precision Switches

The new 25-page catalog published by The Daven Co., 191 Central Ave., Newark 4, N.J. presents the characteristics and performance data and other necessary technical information covering the company's extensive line of precision switches.

Contacts

A new 59-page catalog devoted entirely to electrical contacts and contact assemblies released by P. R. Mallory & Co., Inc., 3029 E. Washington St., Indianapolis 6, Ind. contains detailed specifications, sketches, drawings, and charts, etc., and features a "Contact Material Selector Guide."

Chokes

Catalog data Bulletin H-1 (Section C) contains important information for engineering and purchasing departments concerning new sizes and extended ranges of insulated chokes produced by International Resistance Co., 401 N. Broad St., Philadelphia, Pa.

Transformers

Gertsch Products, Inc., 11846-48 Mississippi Ave., Los Angeles 25, Calif. has issued a 4-page folder which describes and illustrates the PT-series standard ratio transformers and presents their mechanical and electrical specifications and typical applications.

Plotter-Recorder

Librascope, Inc., 1607 Flower St., Glendale, Calif., has released a 6-page folder which illustrates and technically describes the X-Y recorder for plotting two independent variables from either analog or digital inputs, and three standard accessories: the punched card converter, decimal keyboard, and binary converter.

Relays

Advance Electric and Relay Co., 2435 North Naomi St., Burbank, Calif. has published a 6-page folder that lists, describes, illustrates, and presents the applications of 48 relays produced by the company.

Cores

Catalog TWC-100, "Performance-Guaranteed Tape Wound Cores," describes the physical and magnetic constants of over 100 standard sizes of toroidal cores, and gives construction descriptions which include hydrogen annealing, tape-winding, and protective boxing. Available on company letterhead request at Magnetics, Inc., Butler, Pa.

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Transistor Tool Control

(Continued from page 190)

required speed. This system would provide a precise speed control without the complexity of a feedback loop.

Thus far, we have indicated how a transistor might be used to pass or block current from a dc supply. With minor circuit variations, transistors can also be used to pass and block ac. Thus, it is quite conceivable that they may replace contactors in induction motor starters and other ac equipment.

The use of a transistor as a switch which is either on or off has probably brought to mind a thyatron or ignitron which is also an on-off device. One difference is that the gas tube is fundamentally a high-

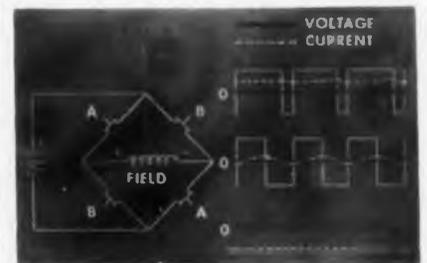


Fig. 4: Static field control circuit

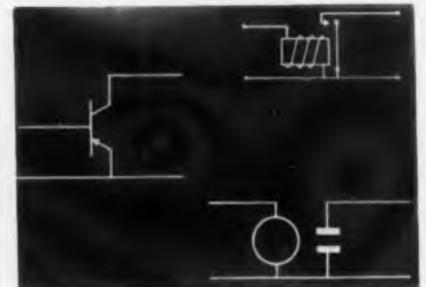


Fig. 5: Equivalent circuit configurations

voltage, low-current device whereas the transistor seems destined to be a high-current, low-voltage unit. However, a more important distinction is that the transistor possesses two great advantages over the thyatron which makes its application much more flexible: it can carry or block currents in either direction and can be turned on or off at any desired instant. With proper driving circuitry, the transistor can be made to perform as a thyatron, but not conversely.

For example, a static field control circuit that may replace rotating amplifiers and excitors is shown in Fig. 4. Here, advantage is taken of the fact that the transistor can pass current in either direction and, hence, can perform functions which are not now practical with thyatrons.

In this circuit, the base-drive cir-

uits which have not been shown in detail are such that transistors A & A' are closed while B & B' are open and conversely. If A & A' are closed, the battery is connected across the field so that the field polarity is as shown; if B & B' are closed, the field has the opposite polarity applied. Thus, this circuit functions similarly to a double-pole, double-throw reversing switch with the one outstanding difference that it can be thrown practically instantaneously. That is, the polarity of the field can be reversed without ever opening the field circuit. Thus, there will be no high-voltage surges and no discontinuities in the current. The average field-current can therefore be controlled by varying the ratio of the time that one polarity of voltage is applied to the field to the time the other polarity is applied. Typical waveforms are shown on the right-hand section of Fig. 4. If the frequency of these rectangular voltage waves is very high compared to the reciprocal of the time constant of the field, the field-current will have very little ripple. This bridge can be held closed in either position and, hence, can apply full forcing to the field in either direction. A voltage regulator containing an exciter of this type would essentially contain only one time constant—that of the field winding itself.

George Bailey President Of Armed Forces Assn.

George W. Bailey, executive secretary of the Institute of Radio Engineers, and wartime assistant to Dr. Vannevar Bush, was elected president of the Armed Forces Communications Association by its Board of Directors for a term of one year.



During World War II, Mr. Bailey served in Washington, D.C., as Chief of the Office of Scientific Personnel, for which he received the Certificate of Merit from President Truman. Mr. Bailey was appointed executive secretary of the I.R.E. in 1945 and heads the national headquarters office of the society in New York City.

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0.5 mc to 250 mc
in eight ranges

The 250-A RX Meter is a completely self-contained instrument for use in measuring the equivalent parallel resistance and capacitance or induction of two terminal networks over a wide frequency range. It includes an accurate, continuously tuned oscillator, high frequency bridge, "unbalance" detector and null indicator.

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SPECIFICATIONS

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R_p RESISTANCE RANGE: 15 to 100,000 ohms.
C_p CAPACITANCE RANGE: +20 uuf to -100 uuf*
*Capacitance range may be increased to ±120 uuf by use of external coils or condensers.



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- Operates over a Wide Frequency Range.
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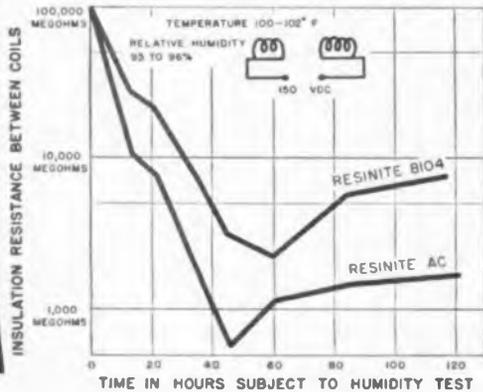
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Tests conducted on .253 I.D. x .283 O.D. tubes used on coil forms for television receivers.

FM Altimeter

(Continued from page 174)

to cut off current i_1 of T-5B and grid current i_2 of T-6. The cathode of T-5B was returned to a positive voltage of .4 dc volts. This reduced, but did not eliminate i_2 . Current i_2 could be eliminated, by increasing the voltage applied to the cathode of T-5B. This voltage controls the start of count and the rate of rise by controlling the charging of C_{13} and C_{14} .

The square wave applied to T-5 must exceed the voltage applied to the cathode of T-5B before C_{13} and C_{14} can be charged. The internal resistance of the voltage applied at the cathode of T-5B, controls the rate of charge of C_{13} and C_{14} . The impedance of the bias source of T-5B is 10 ohms (R_{15}). To control the grid current i_2 , the cathode of T-6 was returned

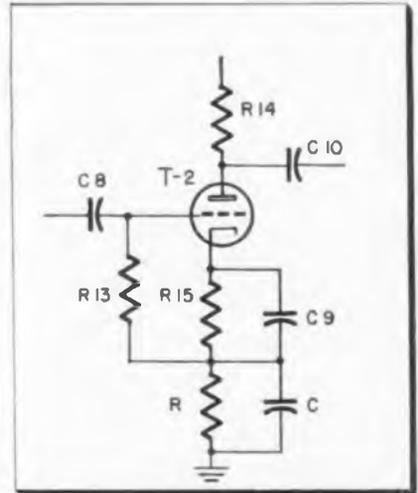


Fig. 6: Diagram of 3rd amplifier stage

to a positive low impedance source for bias control of the tube which also served to control the start of count setting. Current i_1 was reduced by returning R_{10} to a positive point to counteract the negative value at the plate of T-5A and also introduce degenerative current feedback.

The negative voltage at the grid of T-6 was not reduced to zero. If it were, the plate voltage would fall below the output voltage of R_{31} and R_{34} . The counter would indicate a negative voltage and increase the plate voltage of T-6. No recording would exist in the output until the plate voltage of T-6 exceeded the cathode output voltage. If R_{31} was increased greatly, the plate voltage of T-6 would rise. The adjustment control R_{32} would not be effective in reducing the output voltage of

T-7 within desired limits.

The counter output (Fig. 5) over the frequency range of 1 kc to 40 kc varied from minus 1.25 volts to minus 10 volts. This range of 10 to 1 change is very difficult to handle over a linear portion of a tube. The range of voltage variation is 0 to 8.75 volts for 1 kc to 40 kc. This range was reduced from minus 0.61 to minus 0.83 volts for 1 kc to 40 kc by current degeneration. This new range covered a voltage variation of 0 to 0.22 volts as compared to 0 to 8.75 volts. This is accomplished by returning R_{30} to a positive point on the output. Since the counter output is exponential in wave form, a large amount of degenerate current feedback is used to get a linear indication of count.

DC Amplifier

With a narrow range of variation from the counter output, the following amplifier must be high gain and very stable. The output must be 5000 ohm for the use of this instrument. This is accomplished by two stages of amplification with the output stage being a cathode follower having a 5000 ohm resistor in the cathode. The desired results are accomplished by using a pentode amplifier tube, type 6AU6 in a so-called "starved" operation. A high plate load of 10 megohms and a screen grid voltage about 8 volts permit the range of plate current to vary from low count at 25 micro-ampere to high count at 15 micro-ampere. The plate voltage varies from 14 volts to 100 volts. A voltage gain of 387 is achieved in this stage.

Tube parameters of the "starved pentode" operation of the 6AU6 used in this circuit varied over the range of operation. The plate resistance varies 20 megohms to 17 megohms, while the amplification factor changes from 1000 to 500 over the 25 to 15 μ a range. The mutual conductance of the tube is approximately identical for all settings of plate voltage.

The cathode follower tube must be a high current tube to develop the desired voltage output. One half of a dual-triode 12BH7 type fulfills this requirement. A higher frequency range up to 65 kc can easily be obtained if the cathode resistor is increased to 8000 ohms. Plate current saturation prevents the count to extend to this frequency with only 5000 ohms.

The counter reading by virtue of circuit design is very nearly independent of tube characteristics.



Presenting

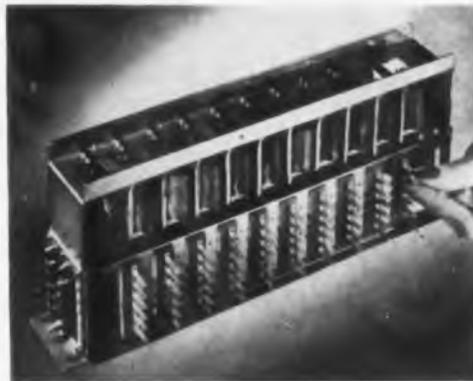
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FM Altimeter

(Continued from page 383)

Tests have been carried out to determine the stability of the counter. This test was continued intermittently for several days where the readings did not change the mean value very much. The error of the daily readings were less than $\pm 1\%$ after a warm up period of 15 minutes when switching on from a cold filament start.

A very accurate low altitude indicator can be achieved with this instrument. If we assume a figure of 20 cycles per foot, this instrument will record up to 2000 ft. To record a higher altitude, the audio frequency response must be increased and the cathode follower resistor made larger. A low impedance output can be maintained by paralleling the duo-triode 12BH7 output tube. Altitudes of 20,000 feet can be

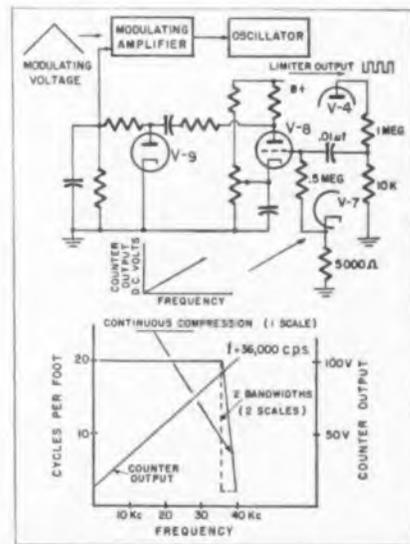


Fig. 7: Circuit for bandwidth compression

achieved by band-width compression. Many FM altimeters record low altitudes and reduce the bandwidth to register high altitudes. The bandwidth reduction changes the number of cycles per foot. The indicator may have two sets of scales when only two different bandwidths are used. Another style may have one bandwidth up to a given altitude and have a continuous reducing bandwidth to its upper recording limit. The latter instrument uses one scale for indication and may use servo operation for bandwidth compression. In the presence of no receiving signals, the servo hunts by expanding and compressing the bandwidth and locks in when a signal is received. Bandwidth compression is achieved by reducing the amplitude of the sweeping volt-

age of the UHF oscillator.

Since the number of cycles per foot are directly proportional to maximum deviation, the scale markings follow the rate of bandwidth compression. The scale may reduce logarithmically or linearly. A very simple method of recording low and high altitudes using this audio amplifier will be illustrated. Suppose at low altitude greater accuracy is desired. A wide scale reading would be used up to 1,800 ft. which corresponds to 36 kc in Fig. 6 (redrawn in Fig. 7). From 1,800 ft. the scale is compressed and records up to 20,000 ft. In order to accomplish this result the number of cycles per foot is reduced to two cycles per foot at 40 kc. Between 36 kc and 40 kc the bandwidth must be compressed to have $\frac{1}{10}$ its value at 36 kc. In Fig. 7, the circuit shown results in a very simple design of bandwidth compression. Two signals are necessary to get this result:

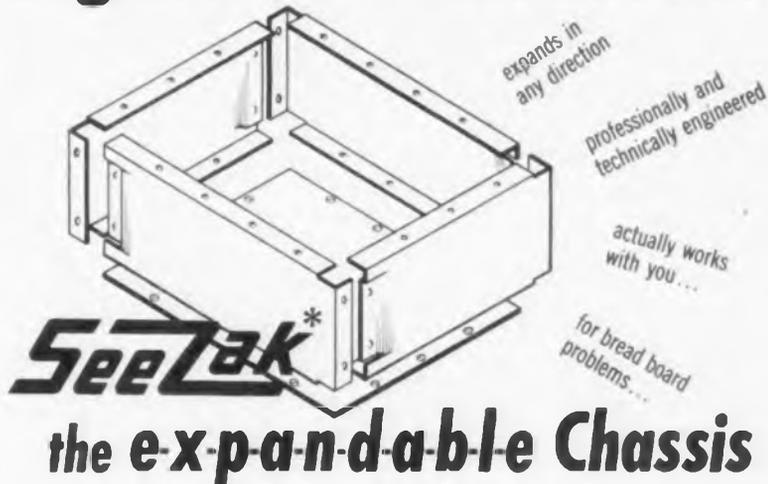
DC voltage from the counter output.

Signal to act as a carrier for dc voltage.

Constant Bandwidth

Up to 36 kc the bandwidth is constant and 20 cycles per foot is used to register altitude. At 36 kc the counter output is 91 dc volts. The square wave output of the limiter is modulated by the output of the counter and fed to V-8 (Fig. 7). The peak-to-peak reading of the square is only two volts and not critical. The tube V-8 is set at cutoff by the bias control in the cathode. No indication of output is shown on its plate until the combination of square and 91 dc v. exceeding the bias voltage. From 36 kc at 91 dc to 40 kc at 100 v., the signal output of V-8 is fed to V-9 and rectifies giving a negative voltage. This voltage in turn is fed to the modulating amplifier to reduce its output so that the oscillator bandwidth is reduced 10 to 1. In the case of a 12AT7 cathode follower output modulating amplifier, an increase of negative bias of $3\frac{1}{2}$ dc v. reduces its signal output 10 to 1. With plate supply voltage of 250 dc v. and a delay bias of approximately 91 dc on the cathode of V-8 this circuit achieves these results very easily. In the case of no signal received, V-8 is cut off and maximum bandwidth is present. Until a signal is received, bandwidth compression does not exist. This circuit accomplishes the same results of a servo operated FM Altimeter with a reduction of volume consumption and the elimination of complex servo circuits.

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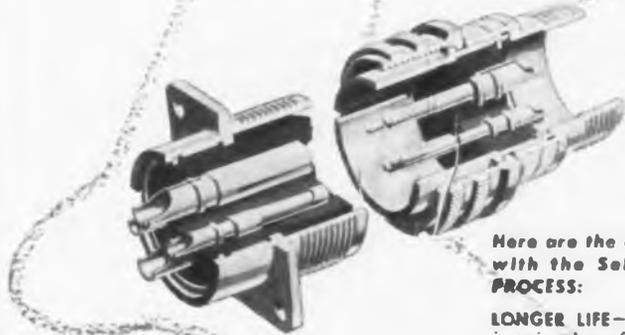
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Mobile Systems

(Continued from page 170)

(One antenna 30 ft. high)
(One antenna 5 ft. high)

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5 miles	8x10 ³	4x10 ³
10 miles	40x10 ³	25x10 ³
20 miles	300x10 ³	200x10 ³

It should be mentioned that these factors were obtained on the basis of a smooth earth, and hence their use will yield calculated results which should be considered as the maximum values to be expected. The effects of hilly country and seasonal foliage variations over the propagation path will alter the radio performance, and the magnitude of such influences is best obtained by experimental measurement.

The received power as estimated above should be compared with that required by the receiver for satisfactory performance. A conservative figure for modern equipment would be 4 μ v across 50 ohms, or 32 x 10⁻¹⁴ watts, and enough transmitter power should be used to bring the received power up to this level. This means, of course, that the maximum range of a two way system will be determined by the power of the mobile unit, since this is the one affected by limitations of size. It should be remarked that a significant improvement in performance can be obtained by using a higher fixed station antenna. The effective power increases as the square of the height ratio under the conditions previously mentioned. For example, raising the elevation from 30 to 100 feet will have the same effect as a tenfold power increase, not counting the loss introduced by the extra transmission line, which can be held small in comparison.

The foregoing represents an attempt towards simplifying a complex situation and is useful in making rough estimates, as well as indicating some general concepts to be followed in planning a two way radio system.

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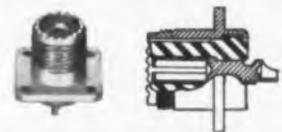
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Ferrite Characteristics

(Continued from page 188)

the core is provided with mechanical motion it will induce a current in the coil at the same frequency as the mechanical motion of the core. The ferrite then, can be a resonant circuit element with a Q value of about 2000. The resonant frequency of the ferrite core is a function of the propagation of sound through the body, Young's modulus, and the length of the core. At 500 kc the core would be about 1/4 in. long.

Ferrites having other vibrational modes of operation are possible. For example, Dr. Roberts used the torsional mode for filter design.⁷

Having a high Q resonant circuit of the ferrite bar, one would naturally wish to have two or more coupled circuits of ferrite bodies for bandpass filter applications. This is not practical for two reasons:

- (1) The ferrites are not easily fabricated into the desired construction.
- (2) The temperature coefficient of resonant frequency is excessively large for most applications.

Fig. 7 shows a practical mechanical filter design which overcomes the above objections. The five center resonators (large cylinders) and the six coupling elements (small cylinders) are made of metal. In this

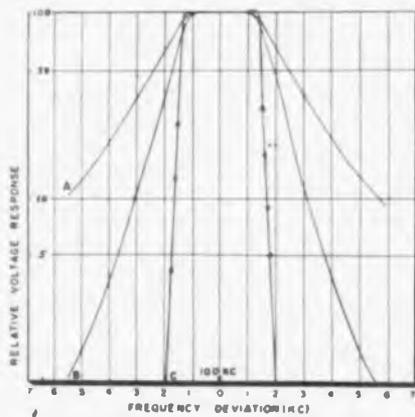


Fig. 8: Comparative selectivity of resonators

case, the metal is Ni-Span C which has a very low temperature coefficient of resonant frequency and a mechanical Q value in excess of 10,000. The ferrites are used on each end as the transducers because they have much lower eddy current losses than the metal. The coils and bias magnets are not shown but are, of course, essential to the operation of the filter. Proper termination, by electrical or mechanical means, is

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Ferrite Characteristics

(Continued from page 387)

also required.

Fig. 8 (Curve C) shows the excellent bandpass characteristic of a seven-element mechanical filter with ferrite transducers. A very high degree of thermal stability is achieved by the use of the high Q metal elements. There is less than 2 db voltage attenuation in the filter because of the high efficiency ferrite transducers. For comparison, the figure shows a pair of electrical tuned circuits (Curve A) and two pairs of electrical tuned circuits in cascade (Curve B). The bandwidth is about the same for the electrical and mechanical filters.

Antenna Cores: For portable and table model broadcast receivers, the current trend is to use a ferrite cored loop antenna because it pro-

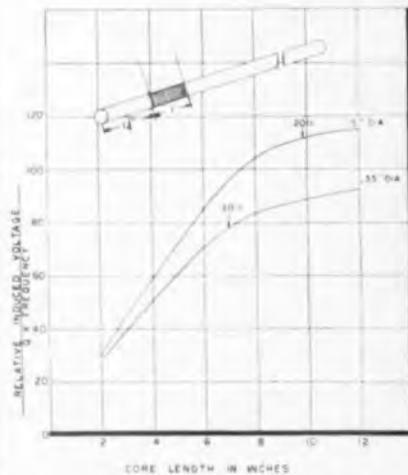


Fig. 9: Relative pickup voltage as a function of dimensions of ferrite cord used as antenna

vides improved pickup (greater signal-to-noise ratio) in a smaller space. The ferrite for this application must have very low losses and good thermal stability of permeability. The ferrite is usually of rod form being 6 to 10 in. long and $\frac{1}{4}$ to $\frac{1}{2}$ in. in diameter as shown in Fig. 9. The coil having the correct inductance to be tunable over the band by the tuning capacitor is usually placed near one end of the core as shown. This placement of the coil allows for a small inductance adjustment by sliding the coil with respect to the core as a manufacturing adjustment.

The core in the form of a rod has been found to be the most economical shape for the ferrite, as illustrated by the curves of Fig. 9. If the core length is small, the diameter is unimportant to the pickup voltage obtained. As the length is increased, the two curves deviate, showing the diameter to be important for the

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longer cores. The curve, for any diameter, of core length versus relative induced voltage has a "knee" as shown which leads us to the following empirical rule. As an antenna, the core length should be 20 times the diameter for optimum utilization of the ferrite material.

At the present state of the art, ferrites are not applicable for antenna cores at frequencies much above the standard broadcast band because the losses are excessive unless the permeability is reduced to an unacceptable value. Presently used ferrites for antenna cores have an initial permeability (toroidal) of 150 to 200.

Ferrites for Small Transformers:
Because of the relatively high permeability of ferrites at radio frequencies, the miniaturization of component parts is possible. This is illustrated in Fig. 10 by a small intermediate frequency transformer which was developed for use in an experimental transistor receiver. Fig. 10a shows the assembled transformer mounted on a chassis plate alongside a transistor to show the relative size. Fig. 10b shows the components of the transformer. The smallness of the transformer is made possible by the ferrite parts which are the two pot shaped moldings into which the coil is placed. The center post of the ferrite pot is molded with a slight taper so that a small change in the air gap of the center post is achieved when one of the pot halves is rotated with respect to the other. This is the inductive tuning adjustment of the transformer, and is made by means of the screw driver slot molded in the ferrite. The three rings are means for holding the assembly securely in the metal shield can. This is a single circuit transformer with coupling windings and is resonant at 455 kc with 150 μ mf of external capacitance. The Q value is 140.

Ferrites provide a useful tool for the circuit engineer provided he understands the nature and limitations of the material. Ferrites find their greatest usefulness in circuitry operating in the frequency range of 10 kc to a few megacycles. At higher frequencies they may be useful if lower values of permeability are acceptable. Ferrites have been made having performance equal to or better than powdered iron cores at 100 mc.

When using ferrites in new applications the circuit engineer should be particularly aware of the following:

- (1) The temperature coefficient of permeability is very large for some ferrites, especially those



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Ferrite Characteristics

(Continued from page 389)

having a low Curie temperature.

- (2) The magnetic resonance is a type of loss unfamiliar to many circuit engineers. This type of loss is evident by a rapid decrease in the Q of the circuit as the frequency of operation is increased.

The ferrites, being of a ceramic nature, are subject to shrinkage and warpage during the manufacturing

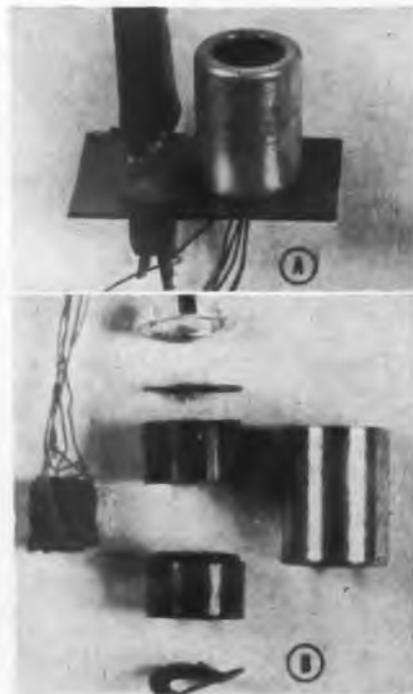


Fig. 10: Miniature intermediate frequency transformer (a) and ferrite components (b)

process and are therefore not easily made to close mechanical dimensions without the expensive process of grinding.

The author wishes to acknowledge contributions by the technical staff of RCA Laboratories, Mr. L. E. Barton, Mr. R. W. George, and Mr. C. Wentworth contributed material used in the applications section of the paper. Dr. H. L. Donley is responsible for the data used in the discussion of magnetic resonance losses.

This paper was presented at the 1953 National Electronics Conference held in Chicago.

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Voltage Regulator

(Continued from page 184)

simple voltage divider circuit and VTVM. This is also shown in Fig. 4.

The method of regulating separate inputs and outputs is readily adaptable to a circuit yielding more than one regulated output. Fig. 7 illustrates one possibility. It will be noted that opposite polarities are obtainable merely by shifting the ground terminal on the output circuit. For the circuit shown, plus 300 volts and plus 200 volts are available when "C" is the ground terminal. When "B" is used as the ground terminal, minus 300 volts and either plus or minus 100 volts are available. If "A" is made the ground terminal, minus 300 and either minus or plus 100 volts may be obtained. These values are merely representative and practically any combination is available.

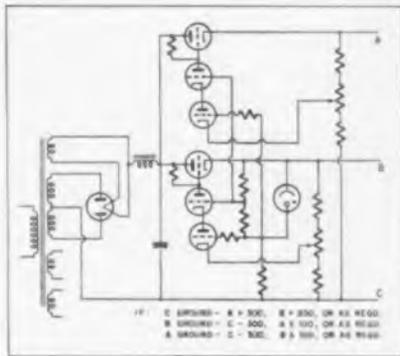


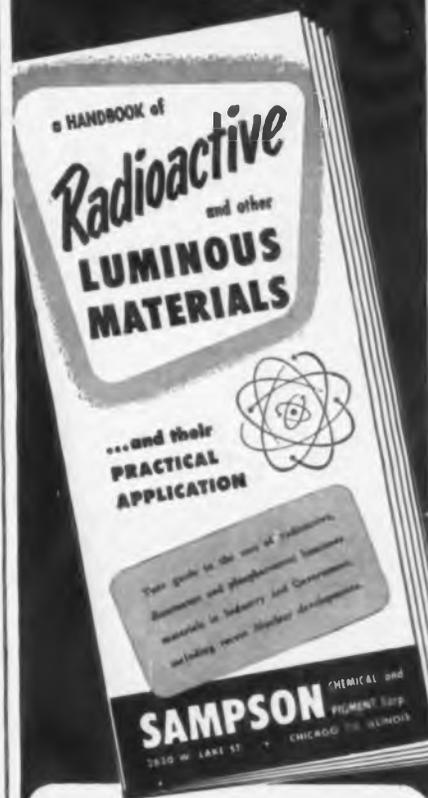
Fig. 7: For handling outputs of 600-1200 v.

Another variation of the basic circuit is shown in Figure 6. In this example, two positive regulated outputs are obtained and are referred to a common reference. Separate inputs may also be utilized. This is an advantage for some applications. A suggested method for measuring the differential voltage by use of a stable bucking voltage and sensitive VTVM is also shown in Fig. 6.

The basic system is also adaptable to regulation of higher voltages. Fig. 5 shows an arrangement suitable for voltage regulating systems having outputs of the order of 600 to 1200 volts without necessitating special regulating and amplifying tubes. Although the method could theoretically be extended to even higher voltages, this would probably not be economical. Special tubes are available and would constitute a better approach to the problem of obtaining regulated voltages in excess of 1200 volts.

In general, a particular application for a regulated power supply will dictate the characteristics required

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Voltage Regulator

(Continued from page 393)

of the supply. Numerous variations are possible. The references in the bibliography provide a broad survey for the design of voltage regulated power supplies.

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Resonator "Q"

(Continued from page 191)

line and the vswr in that line is

$$P_r/P_i = (r - 1/r + 1)^2 \quad (6)$$

since the incident power—the klystron output—can be assumed to remain unchanged for both measurement conditions,

$$\left(\frac{r_o' - 1}{r_o' + 1}\right)^2 = \frac{d'}{d} \left(\frac{r_o - 1}{r_o + 1}\right)^2 \quad (7)$$

Eq. 7 is plotted in nomographic form in Fig. 4 for convenience of reference. Q'_o/Q_o is given directly by the ratio of vswr's. Knowing r_o and r'_o , and making use of Eq. 5, the ratio Q'_i/Q_i can also be computed.

The assumptions made in the preceding analysis are:

- (a) The cavity coupling system varies negligibly over the range of frequencies involved.
- (b) The crystal diode detection law remains unchanged over the frequency and power ranges used.
- (c) The klystron is sufficiently isolated from the measuring line so that its power output is essentially unchanged by variations in cavity impedance.

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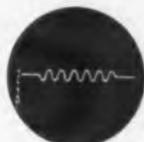
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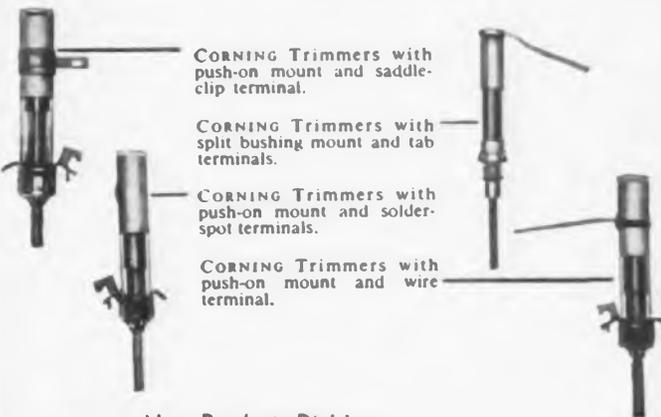


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 - 2H Special Purpose Audio Amplifier
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AN OPERATING UNIT OF
CLEVITE CORPORATION

Resonator "Q"

(Continued from page 394)

charge⁴ — have not yet been fully formed, and consequently no sustained oscillations occur.

To measure the properties of the pre-oscillating magnetron, the tube is placed in a setup similar to Fig. 1, and the klystron frequency is adjusted until the "cold" magnetron resonance dip appears on the oscilloscope trace. If now, the magnetron filament is heated and negative pulses of amplitudes insufficient to cause sustained oscillations (for a given magnetic field) are applied to the cathode, the resonance dip of the magnetron under the pulsed (pre-oscillatory) condition will also appear on the oscilloscope screen, as sketched in Fig. 3. The frequency shifts for various conditions of pre-oscillation (e.g. for various pulse voltages) can be determined by superimposing a wavemeter marker on the trace, while the corresponding changes in the Q factors can be measured by the method presented above.

The pulse repetition rates required for best results vary with the persistence of the oscilloscope cathode-ray tube screen, the sweep frequency on the klystron oscillator, etc., but are generally high. A synchroscope with continuously variable trigger repetition rates was used to obtain photographs from which Fig. 3 was sketched.

References

1. C. G. Montgomery, *Technique of Microwave Measurements*, McGraw-Hill Book Co., New York, p. 300 et seq., 1947.
2. G. B. Collins, *Microwave Magnetrons*, McGraw-Hill Book Co., New York, p. 704; 1918.
3. *Ibid.*, p. 715.
4. H. W. Welch, Jr. and W. G. Dow, *Analysis of Synchronous Conditions in the Cylindrical Magnetron Space Charge*, Jour. Appl. Phys. Vol. 22, p. 433, April 1951.

NEW LABEL METHOD



Pressure-sensitive labels with in-plant imprinting are quickly applied to cartons as they are used, thus reducing label inventories. Manufactured by Avery Adhesive Label Corp. of Menrovia, Calif., the dispensers and labels are reported to provide faster, more efficient labeling for firms stocking large varieties of small items.

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25C1b 4240-4910mc/s	20X1a 8500-10,250mc/s
25C1a 4240-5900mc/s	20X1 8500-9660mc/s
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INDUSTRY NEWS

(Continued from page 354)

J. K. (Kip) Anger has been named asst. sales manager for automobile and home radio at Motorola Inc. Succeeding Anger as national sales training manager will be **George Halsted**, who steps up from his position as field training manager.

Richard McQueen, former director of advertising and promotion for Magne-cord, has transferred to the National Co., where he will occupy a similar position.

Herbert B. Nichols is the new Manager of Public Information at the GE Research Lab., Schenectady, N. Y. His long career in the information media includes 18 years as Natural Science Editor of the Christian Science Monitor.

Robert L. Klabin has been named vice-pres. and general manager of the newly created Elizabeth, N. J. Div. of General Instrument Corp. Prior to this appointment Mr. Klabin was general



R. L. Klabin

manager of F. W. Sickles plant. **C. F. Sullivan** has been elected controller at General Instrument, in which position he will be responsible for the financial operations of all four plants.

David D. Coffin, manager of Raytheon Mfg. Co.'s missile and radar division, has been named an assistant vice-president of the firm.

Charles A. Hansen has become manager of the distributor division of Gramer Transformer Corp., Chicago, Ill. Past chairman of the Association of Electronic Parts & Equipment Manufacturers and former president of the all-industry Electronics Parts Show, Mr. Hansen has been sales manager for Jensen Mfg. Co., Chicago, Ill.

Rear Admiral J. A. Briggs, U.S.N. (retired) recently became associated with Yardney Electric Corporation, New York, N. Y. as special assistant to the president. Admiral Briggs served as senior U. S. representative at the Paris defense materials conference on the formation of N.A.T.O. in 1949.

(Continued on page 402)

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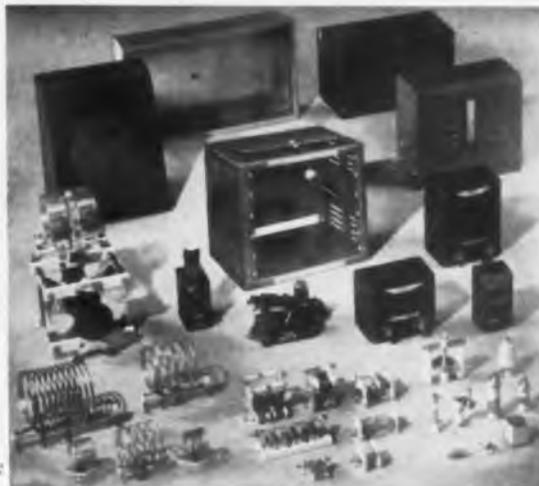
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ANTARA CHEMICALS DIV., GENERAL ANILINE & FILM CORP. 83 Agency—R. T. O'Connell Co.	DIALIGHT CORP. 377 Agency—H. J. Gold Co.	INTERNATIONAL RECTIFIER CORP. 27 Agency—Roy F. Irvin Adv.
ARNOLD ENGINEERING CO. 89 Agency—Walker & Downing, General Agency	DIAMOND MANUFACTURING CORP. 152 Agency—Robert Hartwell Gabine Adv.	INTERNATIONAL RESISTANCE CO. 60, 61, 387 Agency—Arndt Preston-Chapin-Lamb & Keen, Inc.
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AUDIO DEVICES, INC. 139 Agency—Richard & Co. Inc.	EBY INC., HUGH H. 190 Agency—Renner Advertisers	JONES DIV., HOWARD B., CINCH MFG. CORP. 399 Agency—Symonds, MacKenzie & Co., Inc.
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Arnold Engineering Co.
Associated Mfg. Co.

Beta Electric Corp.
Bliley Electric Co.
Bruning Co., A. H.
Bud Radio, Inc.
Burroughs Corp.
Burnell & Co., Inc.

Cannon Electric Co.
Centralab Div., Globe-Union, Inc.
Cinch Manufacturing Co.
Cinch-Jones Sales Div.
Cinema Engineering Co.
Clarostat Mfg. Co., Inc.
Consolidated Molded Products Corp.
Corning Glass Works

Dale Products, Inc.
DeJur-Amsco Corp.
Drake Manufacturing Co.
Drake Co., R. L.

Eitel-McCullough, Inc.
Electra Manufacturing Co.
Electrical & Physical Instrument Corp.
Electronic Fabricators, Inc.
Electron-Radar Products, Inc.
El-Rad Manufacturing Co.
Emerson & Cuming Co.
Empire Devices Products Corp.
Erie Resistor Corp.

Fairchild Camera & Instrument Corp.

INDEX OF LOCALIZER ADVERTISERS

In the free "Alphabetical Listing of Manufacturers" in the *Electronic Industries Directory* published in this issue, many manufacturers use "Localizer Advertisements"—listings of their engineering, executive and sales personnel, and Representatives, regional offices, branches, etc.—all appearing immediately under the manufacturer's name. This department starts on Page 323.

Federal Telephone & Radio Co.
Fretco Television Co., Inc.

Garde Manufacturing Co.
Gawler-Knoop Co.
General Electric Co.
General Precision Lab., Inc.
General Radio Co.
Guardian Electric Manufacturing Co.
Gudeman Co.
G-V Controls, Inc.

Henger-Fairfield Co.
Heppner Manufacturing Co.
Hickok Electrical Instrument Co.
Hicks, W. M. & Keenoth, J. A.
Hobson Brothers
Hughes Co., Kenneth E.
Hughey & Phillips Inc.
Hycan Manufacturing Co.

Induction Motors Corp.
International Rectifier Corp.
International Resistance Co.

Jersey Specialty Co., Inc.
Johnson Agencies, Inc., H. C.
Jones Div., H. B. Cinch Mfg. Corp.

Kay Electric Co.
Kahn Research Laboratories

Kenyan Transformer Co.
Ketay Manufacturing Corp.
Koehler-Pasmoro Co.

Langevin Manufacturing Corp.
Lowery Inc., L. D.

Machlett Laboratories Inc.
Magnetic Recorder & Reproducer Corp.
Master Appliance Mfg. Co.
McBride Sales Co., J. J.
Microdot Div., Felts Corp.
Microtron Co.
Midland Mfg. Co., Inc.
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Murphy & Miller, Inc.

Nealey Enterprises
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Oak Manufacturing Co.
Oradia Industries Inc.
Oxford Electric Corp.

Phostron Co.
Philco Corp.
Photocircuits Corp.
Polarad Electronics Corp.
Polytechnic Reso & Development Co., Inc.

Potter Co.
Precision Paper Tube Co.
Price Electric Corp.
Pyrotheric Corp.

Radio Apparatus Corp.
Radio Corporation of America
Radio Materials Corp.
Rapid Electroplating Process, Inc.
Rapid Specialties Co.
Raypar Inc.
Raytheon Manufacturing Co.
BSA Co.

Scintilla Div., Bendix Aviation Corp.
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Simpson Manufacturing Co., Inc., Mark
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SNC Mfg. Co.
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Sprague Electric Co.
Standard Electronics Corp.
Sylvania Electric Products, Inc.

Technical Appliance Corp.
Teltronics Laboratory, Inc.
Tensolite Insulated Wire Co., Inc.
Times Facsimile Corp.
Tobias & Co., D. F.
Tresco
Tricon Manufacturing Co.

U. M. & F. Manufacturing Corp.
University Loudspeakers, Inc.
Univox Corp.

Vectron, Inc.
Vibration Research Labs.

Westinghouse Electric Corp.

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Standard for performance

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No. 1040 VACUUM TUBE VOLTMETER. Self contained — A.C. operated. High impedance — wide frequency. For use at audio and supersonic frequencies.

No. 1010A COMPARISON BRIDGE. Self contained — A.C. operated. Ideal for laboratory and production testing of resistors, condensers and inductors.



No. 1020B MEGOHM-METER. DIRECT READING. Self contained — A.C. operated. Electronically regulated supply, 1 megohm to 2 million megohms.

No. 1060 VACUUM TUBE VOLTMETER. A 50 megohm input impedance wide frequency range V.M. for use at audio and supersonic frequencies.



No. 1030 LOW FREQUENCY "Q" INDICATOR. DIRECT READING. Measures "Q" factor of coils, also inductances, distributed capacity, impedances and dielectric loss.

No. 1110A INCREMENTAL INDUCTANCE BRIDGE. For accurate testing of communication and television components under load conditions.

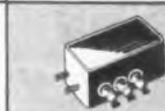


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HIGH FIDELITY. 1/2 DB 20 CPS to 30 KC.



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Brooklyn (Ridgewood) 27, N. Y.

INDUSTRY NEWS



(Continued from page 398)

Laurence B. Lueck, chemist, Magnetic Products Div., Minnesota Mining and Mfg. Co., has been appointed vice president and general manager of E. M. C. Recordings Corp., St. Paul, Minn. Mr. Lueck, who has resigned his position at 3M, is credited with many basic patents in the magnetic tape field.

Edward W. Stone has been appointed district sales engineering manager for Chicago by Standard Electronics Corp., Newark, N. J. a subsidiary of Claude Neon Inc. Similar appointments went to **C. B. Rush & Assoc.**, 3757 Wilshire Blvd., Los Angeles, Calif. and **Lew Pett**, 432 South Curson St., Los Angeles, Calif.

C. Chandler Cole has been appointed general manager of the Ward Products Div. of the Gabriel Co., Cleveland, Ohio.



C. C. Cole

Matt J. Hollingsworth was named asst. sales manager of the Jobber Div. of International Resistance Co., Philadelphia, Pa.

James P. Cody has been promoted to the position of agency vice-pres. at Burton Browne Advertising, Chicago. Mr. Cody joined the firm as a copywriter in 1951 and, for the past year, has managed the agency's service department. He was formerly active in the electronics industry, serving for three years as advertising manager of the Communications Div., Motorola Inc.

Warren C. Dunn has been appointed supervisor of Product Sales in the General Apparatus Sales Dept., Union Switch & Signal Div. of Westinghouse Air Brake Co.

James M. Skinner Jr. has been promoted to vice-pres. of the TV Div. of Philco Corp., Philadelphia, Pa. For the past two years Mr. Skinner has been vice-pres. in charge of distribution for Philco. These duties will be assumed by **Paul E. Burks** who becomes Manager of Distribution.

T. V. Learson, general sales manager of IBM Corp. has been appointed to the position of director of Electronic Data Processing Machines.

STANDARD Electronic CONTROL KNOBS



Shown above, in reduced size, are ten of the new electronic control and instrument knobs just introduced by **ROMAR** and available from stock molds. The knobs are produced in matching sizes and colors, and most styles are furnished in a choice of molded hole, brass or aluminum insert.

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- Experienced design and production engineering.
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Molders of Plastics

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& ELECTRONIC INDUSTRIES

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LEADING MANUFACTURERS

are using space in this issue to acquaint you with their products. Perhaps you want more information on some of them—on one or two, or possibly a score. You can cover all of your needs with the cards below. They are convenient and postfree.

- 401 Adams & Westlake Co.—Mercury relays.
- 402 Aerovox Corp.—Noise suppression filters.
- 403 Aircraft Radio Corp.—Signal generator.
- 404 Air Marine Motors Inc.—Motors, fans & blowers.
- 404A Airtiron Inc.
- 405 Aldon Products Co.—Color TV tube connectors, cables.
- 406 Alpha Metals, Inc.—Rosin-filled solder.
- 407 Alpha Wire Co.—Wire & cable manual.
- 408 Altec Lansing Corp.—Microphones.
- 409 American Electrical Heater Co.—Soldering irons.
- 410 American Lava Corp.—Ceramic insulators, connectors.
- 411 American Phenolic Corp.—Connectors.
- 412 American Television & Radio Co.—Battery eliminators.
- 413 Amperex Electronic Corp.—Tubes for industrial use.
- 414 Amperite Co., Inc.—Delay relays, ballast-regulators.
- 415 Ampex Corp.—Portable tape recorder.
- 416 Andrew Corp.—Flexible air dielectric cable.
- 417 Antara Chem. Div., General Aniline & Film Corp.—Iron powders.
- 418 Arnold Engineering Co.—Magnets for rotors or stators.
- 419 Arton Engineering Co.—Automatic wire strippers.
- 420 Astron Corp.—Capacitors.
- 421 Atlas Resistor Co., Philadelphia Electronics Inc.—Wirewound resistors.
- 422 Audio Devices, Inc.—Magnetic recording tape.
- 423 Avery Adhesive Label Corp.—Pressure-sensitive labels.
- 424 Bardwell & McAllister, Inc.—TV spotlights.
- 425 Bendix Aviation Corp., Scintilla Magneto Div.—Connectors.
- 425A Berndt-Bach Inc.—Kinescope recording with camera.
- 426 Blaw-Knox Co.—Antenna towers.
- 427 Bliley Electric Co.—Crystals, delay lines.
- 428 Bomac Laboratories, Inc.—Microwave tubes & components.
- 429 Bomac Laboratories, Inc.—Magnetrons, thyatronns, switching tubes.
- 430 Boonton Radio Corp.—Multi-purpose test instruments.
- 431 Borg Corp., Geo. W.—Precision potentiometers.
- 432 Bourns Laboratories—Wirewound potentiometers.
- 433 Bradley Laboratories, Inc.—Selenium rectifiers.
- 434 Brand & Co., Inc. William—Plastic tubing.
- 435 Brew & Co., Inc., Richard D.—Delay lines.
- 436 Bud Radio, Inc.—Sheet metal products.
- 437 Burke & James, Inc.—TV camera lenses.
- 438 Burnell & Co., Inc.—Toroids & filters.
- 439 Burroughs Corp.—Pulse equipment.
- 440 Busmann Mfg. Co.—Fuses.
- 441 Camera Equipment Co.—Tripod head, collapsible dolly.
- 442 Cannon Electric Co.—Connectors.
- 443 Carter Motor Co.—Rotary power supplies.
- 443A CBS-Columbia—Engineering personnel.
- 444 CBS-Hytron—Horizontal output tube.
- 445 Ceco Distributing Corp.—All-directional dolly.
- 446 Chester Cable Corp.—Wires & cables.
- 447 Chicago Telephone Supply Corp.—Variable resistors.
- 448 Cinch Manufacturing Corp.—Metal-plastic assemblies.
- 449 Cinema Engineering Co.—Resistors, attenuators, amplifiers.
- 450 Citation Products Co.—Lugs; terminals; hardware.
- 451 Clarostat Mfg. Co., Inc.—Potentiometers.
- 452 Cleveland Container Co.—Phenolic tubing.
- 453 Clippard Instrument Laboratory, Inc.—Automation aids.
- 454 Coaxial Connector Co.—Connectors.
- 455 Collins Radio Co.—Broadcast equipment.
- 456 Communication Accessories Co.—Amplifiers, filters, transformers.
- 457 Consolidated Vacuum Corp.—Tube processing systems.
- 458 Constantin & Co., I. L.—Connectors, seals, terminals.
- 459 Continental Carbon Inc.—Metal film resistors.
- 460 Corning Glass Works—Trimmer capacitors.
- 461 Cornish Wire Co., Inc.—Hook-up wire.
- 462 Cross & Co., H.—Ribbons, strips, formed pieces.
- 463 Cunningham, Son & Co., Inc., James—Crossbar switch.
- 464 Dage Electric Co., Inc.—R-F connectors.
- 465 Dale Products, Inc.—Power resistors.
- 466 DeJur-Amose Corp.—Connectors.
- 467 Dialight Corp.—Pilot lights.
- 468 Diamond Manufacturing Corp.—Coaxial cable connectors.
- 469 Diamond Microwave Corp.—Microwave components.
- 470 Dudok & Bock Spring Mfg. Co.—Wire forms.

- 471 DuMont Labs., Allen B.—Radar tubes.
- 472 Eby Inc., Hugh H.—Transmitter sockets.
- 473 Edison, Inc., Thomas A.—Relays.
- 474 Eitel-McCullough, Inc.—Klystrons.
- 475 Eico Corp.—Connectors.
- 476 Electralab, Inc.—Printed circuits.
- 477 Electra Mfg. Co.—Deposited carbon resistors.
- 478 Electrical & Physical Instrument Corp.—Square pulse generator.
- 479 Electrical & Physical Instrument Corp.—Decade scaler.
- 480 Electrical Industries—Transistor closures.
- 481 Electronic Fabricators, Inc.—Miniature capacitors.
- 482 Electronic Tube Corp.—Oscilloscopes, cathode ray tubes.
- 483 Emerson & Cuming, Inc.—Plastics for electronics.
- 484 Emerson & Cuming, Inc.—
- 486 Factory Enterprises, Inc.—Wire cloth.
- 487 Fairchild Camera & Instrument Corp.—Precision potentiometers.
- 488 Fairchild Recording Equipment Co.—Transcription turntable.
- 489 Federal Telecommunication Labs.—UHF TV amplifiers.
- 490 Federal Telecommunication Labs—Film camera chain.
- 491 Federal Telephone & Radio Co.—Coaxial cables.
- 492 Ford Instrument Co.—Engineering.
- 493 Freed Transformer Co., Inc.—Test instruments.
- 494 Gabriel Electronics Div., Gabriel Co.—Microwave antennas.
- 495 Galerath Electric Corp., C. C.—P.A. systems; loud speakers.
- 496 Gardo Mfg. Co.—Barrier strips.
- 497 Geo-Lar Mfg. Co.—Knobs.
- 498 General Ceramics Corp.—Magnetic cores.
- 499 General Communication Co.—Coax switches; microwave equipment.
- 500 General Control Co.—Push button switches.
- 501 General Electric Co.—TV receiving tubes.
- 502 General Electric Co.—Germanium diodes, transistors.
- 503 General Electric Co.—Limiting amplifiers.
- 504 General Precision Lab., Inc.—Remote control TV camera.
- 505 General Radio Co.—Color TV station monitor.
- 506 Gerlyn Engineering Co.—Coils; antenna assemblies.
- 507 Gianinni & Co., Inc., G. M.—Digital commutators.
- 509 Grant Pulley & Hardware Corp.—Stock slides.
- 510 Graphite Metallizing Corp.—Brushes; contacts; slip rings.
- 511 Graybar Electric Co.—Full line of equipment.

Listings continued on next page >>>

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Listings continued from preceding page

- 512 Grayhill—Miniature tap switch.
 513 Gudobrod Bro. Silk Co., Inc.—Lacing tapes.
 514 Gudeman Co.—Capacitors, pulse transformers, delay lines.
 515 Helipot Corp.—Free technical manual.
 516 Hemlaway & Bartlett Mfg. Co.—Cords & tapes.
 517 Heppner Mfg. Co.—Flyback transformers.
 518 Hermetic Seal Products Co.—Compression seals.
 519 Houston-Fearless Corp.—Film processing equipment.
 519A Hudson Radio & Television Corp.—Electronic parts and equipment.
 519B Hudson Tool & Die Co., Inc.—Metal fabrications; cases; covers.
 520 Hughes Aircraft Co., Semiconductor Div.—Germanium diodes.
 521 Hughes Research & Development Lab.—Engineering personnel.
 522 Industrial Test Equipment Co.—Phase meter.
 523 Insulated Circuits, Inc.—Printed circuits.
 524 International Rectifier Corp.—Selenium rectifiers.
 525 International Resistance Co.—Resistors.
 526 International Resistance Co.—Wirewound resistors.
 527 JBT Instrument Co.—Meters & switches.
 528 Jennings Radio Mfg. Corp.—Variable vacuum capacitors.
 529 Johnson Co., E. F.—Capacitors, inductors, sockets.
 530 Jones Div., Howard B., Clinch Mfg. Corp.—Plugs & sockets.
 531 Kable Engineering Co.—Wire manufacturing equipment.
 532 Kay Electric Co.—Test equipment.
 533 Kenyon Transformer Co.—Transformers.
 534 Keeter Solder Co.—Solder.
 534A Keystone Electronics Co.—Quartz crystals.
 535 Klein & Sons, Mathias—Pliers.
 536 Knights Co., James—Crystal oven.
 537 Kollman Instrument Corp.—Instrumentation.
 538 Langevin Manufacturing Corp.—Transformers.
 539 Langevin Manufacturing Corp.—Broadcast amplifiers.
 540 Lee Laboratories, Inc.—Transistor circuits.
 541 Librancepa, Inc.—Plotter and recorder.
 542 Lockheed Aircraft Corp.—Engineering personnel.
 542A Magnacord, Inc.—Professional tape recorder.
 543 Magnetic Research Corp.—Magnetic DC converters.
 544 Magnetics, Inc.—Magnetic shields.
 545 Mallory & Co., Inc., P. R.—Capacitors & batteries.
 546 Mallory & Co., Inc., P. R.—Capacitors for printed circuits.
 547 Manufacturers Engrg. & Equipment Corp.—Sweep frequency generators.
 548 McCoy Electronics Co.—Crystal ovens.
 549 Measurements Corp.—Test equipment.
 550 Melpar, Inc.—Engineering personnel.
 551 Mendelsohn Speedgun Co., Inc.—Coax connectors.
 552 Methode Manufacturing Corp.—Electronic hardware.
 553 Mico Instrument Co.—Portable engraver.
 554 Midland Mfg. Co., Inc.—Crystals for color television.
 555 Millivac Instrument Corp.—Test equipment.
 556 Mueller Electric Co.—Clips.
 557 Mycalex Corp. of America—Glass bonded mica.
 558 National Co., Inc.—Coil forms; condensers; tank assemblies.
 559 National Vulcanized Fibre Co.—Laminates for printed circuits.
 560 Nomatic, Inc.—Relays.
 561 New London Instrument Co.—UHF TV sweep generator.
 562 N. R. K. Mfg. & Engrg. Co.—Microwave assemblies.
 563 Ogden Coil & Transformer Co.—Transformers, reactors, coils.
 564 Par-Metal Products Corp.—Racks, cabinets, chassis.
 565 Permago Corp.—Permanent magnets.
 566 Phocotron Co.—Meters; deposited carbon resistors.
 567 Phelps Dodge Copper Products Corp.—Coaxial cable.
 568 Philco Corp.—Microwave equipment.
 569 Photoducits Corp.—Printed circuits.
 570 Polarad Electronics Corp.—I-band sweep oscillator.
 571 Polytechnic Res. & Development Co.—Test instruments.
 572 Ponder & Best—TV camera lenses.
 573 Precision Paper Tube—Coil bobbins.
 574 Presto Recording Corp.—Studio tape recorder.
 575 Printhead Inc.—Plastic fabrications.
 576 Prodelia Inc.—Coaxial lines, towers, antennas.
 577 Pyramid Electric Co.—Capacitors.
 578 Radio Corporation of America—VHF TV transmitters.
 579 Radio Corporation of America—Receiving tubes; components; scopes.
 580 Radio Corporation of America—TV receiving tubes.
 581 Radio Engineering Labs.—Multiplex radio systems.
 582 Radio Materials Corp.—High voltage disc capacitors.
 583 Radio Materials Corp.—Disc capacitors.
 584 Radio Receptor Co., Inc.—Transistors, germanium diodes.
 585 Raypar Inc.—TV color components.
 586 Raytheon Manufacturing Co.—Subminiature tubes.
 587 Raytheon Manufacturing Co.—Microwave broadcast accessories.
 588 Reeves Hoffman Corp.—Low frequency crystals.
 589 Resinite Corp.—Resinated forms.
 590 Robinson Aviation, Inc.—Vibration control components.
 591 Robinson Aviation, Inc.—Vibration control mounts.
 592 Romar Plastics, Inc.—Control knobs.
 593 Rust Industrial Co., Inc.—Carrier interruption alarm.
 594 Sampson Chemical & Pigment Corp.—Materials handbook.
 595 Sangam Electric Co.—Paper tubular capacitor.
 596 Scherr Co., Inc., George—Precision dynamometer.
 597 Sei-Rex Precision Metals, Inc.—Connectors.
 598 Shallcross Manufacturing Co.—Boro-carbon resistors.
 599 Shure Brothers, Inc.—Broadcast microphones.
 599A Shurite—Panel meters.
 600 Sigma Instruments, Inc.—Relays.
 601 Signalite Inc.—Voltage regulator tubes.
 602 Specific Products Co.—Changeable breadboard chassis.
 603 Sprague Electric Co.—Precision resistors.
 604 Sprague Electric Co.—Ceramic capacitors.
 605 Stackpole Carbon Co.—Resistors.
 605A Stainless Inc.—Towers.
 606 Standard Electronics Corp.—Broadcast transmitters.
 607 Standard Pile Co.—Crystals.
 608 Stone Paper Tube Co.—Paper tubing.
 609 Stupakoff Ceramic & Mfg. Co.—Glass-sealing alloy.
 610 Sylvania Electric Products Inc.—Subminiature tubes.
 611 Sylvania Electric Products Inc.—Tube sockets.
 612 Sylvania Electric Products Inc.—TV picture tubes.
 612A Sylvania Electric Products Inc.—Power transistor.
 613 Synthase Corp.—Laminated plastics.
 614 Technology Instrument Corp.—Video phase meter.
 615 Tektronix, Inc.—Oscilloscopes.
 616 Telochrome Inc.—Instrumentation for color TV.
 617 Tel-Instrument Co., Inc.—Color TV studio equipment.
 618 Tel-Red Mfg. Co.—
 619 Tenselite Insulated Wire Co., Inc.—Wire & cable.
 620 Texas Instruments Inc.—Silicon transistors.
 621 Tinnerman Products, Inc.—Fasteners.
 621A Transformer & Electronic Specialty Co.—Amplifiers, transformers.
 622 Transcoil Corp.—Servo systems.
 623 Transistor Products, Inc.—Point contact transistors.
 624 Transradio Ltd.—Coaxial cable.
 625 Trucon Steel Div., Republic Steel Corp.—Broadcast towers.
 626 Tung-Sol Electric Inc.—Electron tube manufacturing.
 627 U. M. & F. Mfg. Corp.—Expandable chassis.
 628 U. S. Electronics Corp.—Coils & transformers.
 629 U. S. Engineering Co.—Manual of electronic hardware.
 630 University Loudspeakers Inc.—Loudspeakers.
 631 Varflex Corp.—Tubing & sleeving.
 632 Vectron, Inc.—Spectrum analyzer.
 632A Vectron, Inc.—Wirebound potentiometers.
 633 Victoreen Instrument Co.—Special-purpose tubes.
 634 Victoreen Instrument Co.—Voltage regulator.
 635 Victory Engineering Corp.—Thermistor, varistors.
 636 Volkers & Schaffer Mfg. Corp.—Oscilloscopes.
 637 Ward Leonard Electric Co.—Resistors; relays; rheostats.
 638 Warren Plastics Corp.—Hermetic seals.
 639 Waterman Products Co., Inc.—Oscilloscopes.
 640 Waveline Inc.—Microwave noise generator.
 641 Welch Mfg. Co., W. M.—Vacuum pump.
 642 Weston Electrical Instrument Co.—Tube checker.
 643 White Dental Mfg. Co., S. S.—Flexible shafts.
 644 Wickes Engineering & Construction Co.—
 645 Wybar Elec.—

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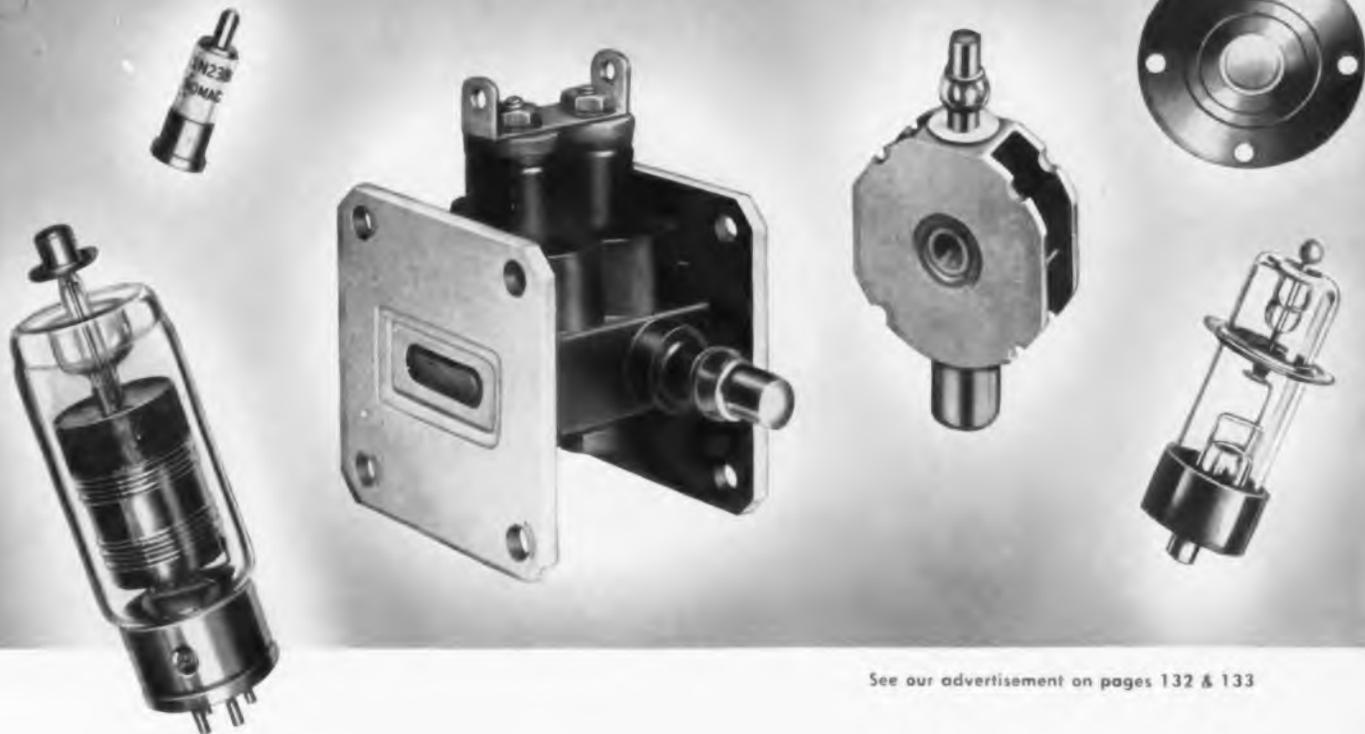
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Bomac



... THE MOST COMPLETE LINE ...



See our advertisement on pages 132 & 133

microwave tubes and components

GAS SWITCHING TUBES — Bomac carries the most extensive line of TR, ATR, Pre TR and attenuator tubes available for all frequency bands and power levels.

SHUTTER TUBES — Bomac has introduced a new concept in TR switching, offering continuous crystal protection through wave guide shorting plus TR tube action.

HYDROGEN THYRATRONS — Bomac offers a complete line for use as switch tubes in line type modulators for pulsing magnetrons in radar equipment. Also used for precise triggering at high power levels.

PRESSURIZING WINDOWS — Bomac has windows available for all wave guide sizes, broad band charac-

teristics with low insertion loss, temperature range — 55°C to 100°C and 30 lb./sq. in. pressure differential either direction.

SILICON AND GERMANIUM DIODES — Bomac diodes are manufactured to high standards to assure electrical uniformity, high burnout and humidity resistance.

DUPLEXERS — Bomac's line of dual TR tubes can be supplied with hybrids to make a complete duplexer to customer specifications.

MAGNETRONS — Bomac has available tunable and fixed tuned magnetrons with high peak RF powers for pulsed service in the higher frequency bands.

We invite your inquiries regarding

- ENGINEERING
- DEVELOPMENT
- PRODUCTION

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BEVERLY, MASSACHUSETTS

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NEW UHF

RCA-6BC4

high gain, low noise RF amplifier



RCA-6BC4
UHF Medium-Mu Triode
(actual size)

Here's an excellent combination of important tube characteristics for UHF tuner designs. The new RCA-6BC4, for rf amplifier service, provides high gain combined with low noise factor . . . thanks to its high transconductance of 10,000 micromhos at relatively low plate current.

You also get the advantages of low lead inductance, low lead resistance, and low interelectrode capacitances . . . plus good isolation

of input and load circuits. In addition, silver-plated base pins are used to reduce UHF skin-effect losses.

A well-tried companion for top UHF performance is the RCA-6AF4 for local oscillator service. This tube features *good* frequency stability as well as low lead inductance, low rf lead resistance, and low interelectrode capacitances.

And, for your VHF tuner applications, you can make an excellent choice of RCA tubes for this service

from the group shown below. Ask your RCA field engineer for details. Call your nearest RCA field office.

(EAST) Humboldt 5-3900
415 S. 5th Street
Harrison, New Jersey

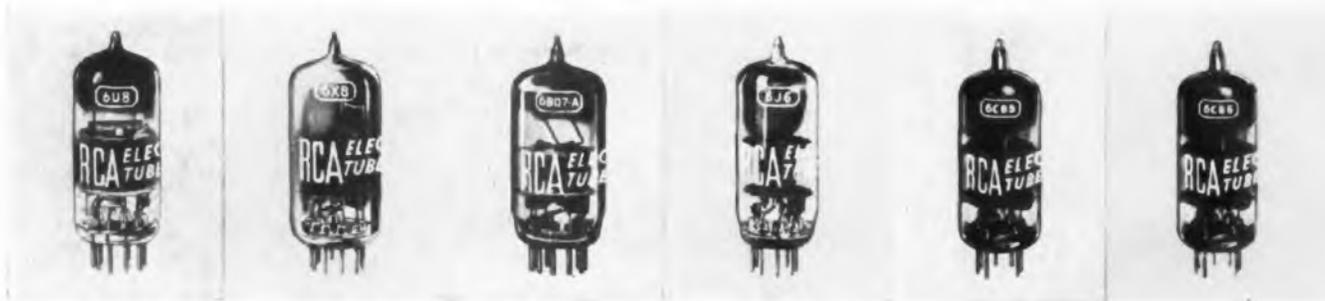
(CENTRAL) Whitehall 4-2900
589 E. Illinois Street
Chicago 11, Illinois

(WEST) Madison 9-3671
420 S. San Pedro Street
Los Angeles 13, California

RCA-6AF4 for local
UHF oscillator service



RCA TUBES FOR VHF TUNERS



RCA-6U8
Triode-Pentode Converter

RCA-6X8
Triode-Pentode Converter

RCA-6BQ7-A
Medium-Mu Twin Triode

RCA-6J6
Medium-Mu Twin Triode

RCA-6BC5
Sharp-Cutoff Pentode

RCA-6CB6
Sharp-Cutoff Pentode



RADIO CORPORATION of AMERICA
ELECTRON TUBES

HARRISON, N. J.

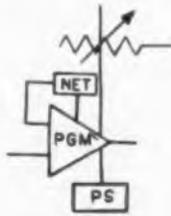
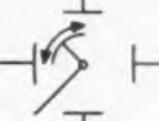
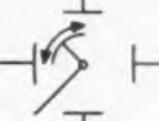
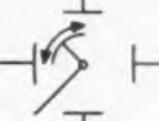
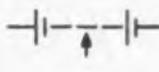
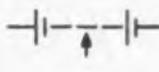
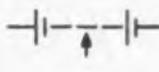
TELE-TECH & Electronic Industries



CALDWELL-CLEMENTS, INC. • 310 LEXINGTON AVENUE, NEW YORK 17, N.Y. • Plaza 9-7580

CIRCUIT SYMBOLS

Graphical representation of electronic and related components provides an efficient shortcut in conveying technical information. To establish a universal meaning for each of these symbols, a set of standards have been developed jointly by the Institute of Radio Engineers (54IRE21S1) and the American Standards Association (Y32.2—1954). Presented here are more than 175 symbols selected from the 67 major categories included in the IRE-ASA standards. These symbols represent those most frequently used in the electronic industries, and may be considered the building blocks of the complete set of standards.

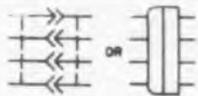
AMPLIFIERS	ARRESTORS, Gap	CAPACITORS										
 <p>General: Triangle points in direction of transmission</p>	<p>For Lightning or Electric Surges</p> <table border="0"> <tr> <td data-bbox="611 982 770 1061">  <p>General</p> </td> <td data-bbox="778 982 941 1061">  <p>Carbon Block</p> </td> </tr> <tr> <td data-bbox="611 1098 770 1177">  <p>Horn Gap</p> </td> <td data-bbox="778 1098 941 1177">  <p>Protective Gap</p> </td> </tr> <tr> <td data-bbox="611 1213 770 1293">  <p>Sphere Gap</p> </td> <td data-bbox="778 1213 941 1293">  <p>Multigap</p> </td> </tr> </table>	 <p>General</p>	 <p>Carbon Block</p>	 <p>Horn Gap</p>	 <p>Protective Gap</p>	 <p>Sphere Gap</p>	 <p>Multigap</p>	<p>Curved Electrode represents: Outside Electrode and/or Negative Electrode and/or Moving Element in Variables and/or Low potential in Feed-thrus</p> <table border="0"> <tr> <td data-bbox="1055 1030 1197 1102">  <p>Shielded capacitor</p> </td> <td data-bbox="1277 1030 1385 1102">  <p>Variable capacitor</p> </td> </tr> <tr> <td data-bbox="1055 1175 1197 1295">  <p>Split stator Capacitor Both parts increase simultaneously</p> </td> <td data-bbox="1277 1175 1385 1295">  <p>Variable differential capacitor</p> </td> </tr> </table>	 <p>Shielded capacitor</p>	 <p>Variable capacitor</p>	 <p>Split stator Capacitor Both parts increase simultaneously</p>	 <p>Variable differential capacitor</p>
 <p>General</p>	 <p>Carbon Block</p>											
 <p>Horn Gap</p>	 <p>Protective Gap</p>											
 <p>Sphere Gap</p>	 <p>Multigap</p>											
 <p>Shielded capacitor</p>	 <p>Variable capacitor</p>											
 <p>Split stator Capacitor Both parts increase simultaneously</p>	 <p>Variable differential capacitor</p>											
 <p>Program Amplifier with Associated Variable Attenuator, Feed Back Path, and Power Supply</p>	<h3>ATTENUATORS</h3>	<table border="0"> <tr> <td data-bbox="1055 1415 1197 1536">  <p>Phase shifter capacitor</p> </td> <td data-bbox="1277 1415 1385 1536">  <p>Feed thru capacitor (terminals on feed thru element)</p> </td> </tr> </table>	 <p>Phase shifter capacitor</p>	 <p>Feed thru capacitor (terminals on feed thru element)</p>								
 <p>Phase shifter capacitor</p>	 <p>Feed thru capacitor (terminals on feed thru element)</p>											
<h3>ANTENNAS</h3>	<table border="0"> <tr> <td data-bbox="611 1415 770 1495">  <p>Balanced General</p> </td> <td data-bbox="778 1415 941 1495">  <p>Unbalanced, General</p> </td> </tr> </table>	 <p>Balanced General</p>	 <p>Unbalanced, General</p>	<h3>CELLS, Photosensitive</h3>								
 <p>Balanced General</p>	 <p>Unbalanced, General</p>											
<p>Types or Functions may be indicated by words or abbreviations adjacent to the symbol</p>	<p>Long line always positive; polarity may be indicated in addition</p>	<p>λ indicates Element Varies with Light</p> <table border="0"> <tr> <td data-bbox="1055 1704 1146 1777">  <p>Asymmetrical Photo Conductive Transducer</p> </td> <td data-bbox="1171 1704 1262 1777">  <p>Symmetrical Photo Conductive Transducer</p> </td> <td data-bbox="1304 1704 1395 1777">  <p>Photovoltaic Transducer</p> </td> </tr> </table>	 <p>Asymmetrical Photo Conductive Transducer</p>	 <p>Symmetrical Photo Conductive Transducer</p>	 <p>Photovoltaic Transducer</p>							
 <p>Asymmetrical Photo Conductive Transducer</p>	 <p>Symmetrical Photo Conductive Transducer</p>	 <p>Photovoltaic Transducer</p>										
<table border="0"> <tr> <td data-bbox="201 1728 292 1825">  <p>General</p> </td> <td data-bbox="389 1728 479 1825">  <p>Dipole</p> </td> </tr> </table>	 <p>General</p>	 <p>Dipole</p>	<table border="0"> <tr> <td data-bbox="611 1777 770 1856">  <p>dc source, General</p> </td> <td data-bbox="778 1777 941 1856">  <p>Multicell</p> </td> </tr> </table>	 <p>dc source, General</p>	 <p>Multicell</p>	<h3>CHASSIS</h3>						
 <p>General</p>	 <p>Dipole</p>											
 <p>dc source, General</p>	 <p>Multicell</p>											
<table border="0"> <tr> <td data-bbox="201 1945 292 2041">  <p>Loop</p> </td> <td data-bbox="389 1945 479 2041">  <p>Counterpoise</p> </td> </tr> </table>	 <p>Loop</p>	 <p>Counterpoise</p>	<table border="0"> <tr> <td data-bbox="611 1945 770 2041">  <p>Multicell with 3 taps</p> </td> <td data-bbox="778 1945 941 2041">  <p>Multicell with adjustable tap</p> </td> </tr> </table>	 <p>Multicell with 3 taps</p>	 <p>Multicell with adjustable tap</p>	 <p>Chassis Frame not necessarily at ground potential</p>						
 <p>Loop</p>	 <p>Counterpoise</p>											
 <p>Multicell with 3 taps</p>	 <p>Multicell with adjustable tap</p>											

CONNECTORS

Symbol not an arrowhead, but larger lines at 90°



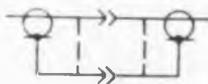
Male Contact



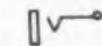
Engaged 4-conductor connectors. Plug has 1 male & 3 female contacts



Female Contact



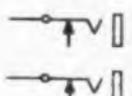
Engaged coaxial connectors. Outside conductor carried through



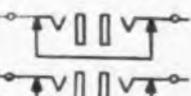
Two Conductor Jack



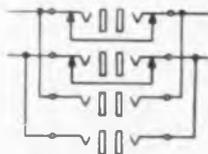
Two Conductor Plug



Jacks with circuit normalled through one way



Jacks with circuit normalled through both ways



Jacks in Multiple, one set with circuit normalled through both ways

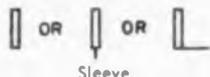


2, 3, 4 Conductor Polarized Plugs, female contacts

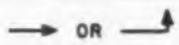
CONTACTS, Electric



Fixed Contact



Sleeve



Adjustable or sliding contact for resistor, inductor, etc.



Segment: bridging contact

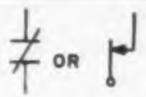


Vibrator Reed

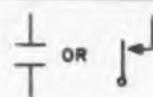


Rotating Contact and brush

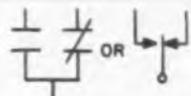
CONTACTS, Electric (Continued)



Closed Contact (break)



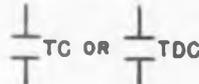
Open Contact (make)



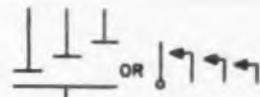
Transfer



Make-before-break



Open Contact w/time delay closing feature



Time Sequential Closing

CORE

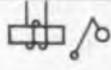


Magnetic Core of Inductor or Transformer



Magnetic Core of Magnet or Relay

COUNTER, Electromagnetic Operated



General



With Make Contact

COUPLER, Directional

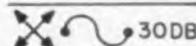
Arrow Indicates Direction of Power Flow. Number of Coupling Paths, Type of Coupling and Transmission Loss May Be Indicated



General



E-plane Aperture Coupling 30 db Transmission Loss



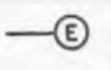
Loop Coupling 30 db Transmission Loss



Probe Coupling 30 db Transmission Loss

COUPLING

E, H or HE inside circle indicates type of coupling. E indicates plane at aperture is perpendicular to transverse component of major E lines. In H the plane is parallel. HE indicates coupling by all other kinds of apertures. Transmission loss may be indicated.



E-plane Coupling By Aperture to Space



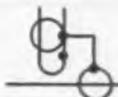
E-plane Coupling 3 ends of Transmission Path Available



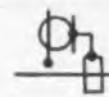
Coupling by Loop to Space



Coupling by Probe to Space

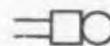


Coupling by Loop from Coaxial to Circular Waveguide with DC Grounds Connected



Coupling by Probe from Coaxial to Rectangular Waveguide with DC Grounds Connected

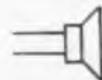
DEVICES, Audible Signal



Bell, general telephone ringer



Buzzer



Horn, Howler, Loudspeaker, Siren

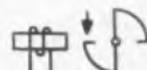
DEVICES, Visual Signal



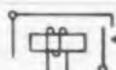
Switchboard Type Lamp



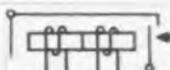
Annunciator, general



Annunciator, Drop or Signal, Shutter or Grid Type



Manually Restored Drop



Electrically Restored Drop

DISCONTINUITY



General



Capacitive Reactance



Inductive Reactance



L and C with Infinite Reactance at Resonance

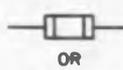


L and C with Zero Reactance at Resonance

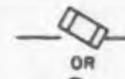


Equivalent Shunt Element General

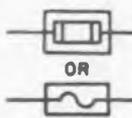
FUSES



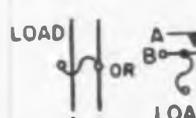
Fusible element



High Voltage Primary Fuse Contact, Dry



High Voltage Primary Fuse Contact, Oil



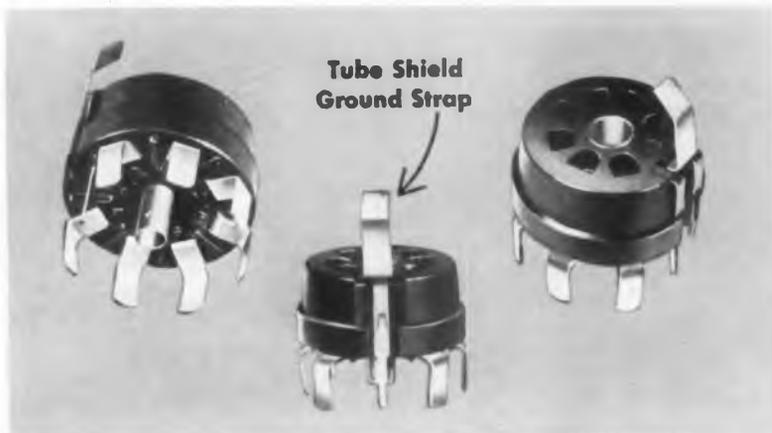
With Alarm Contact [When fuse blows alarm bus B is connected to power bus A. Letters for explanation only]

GROUND



Big Savings Ahead

**2 New SYLVANIA SOCKETS save
Assembly Time... Cut Costs
... Improve Performance!**



1 New Sylvania 7-pin Miniature Printed-circuit Sockets. Contacts and center shield are shaped so that sockets can be stacked one upon another for automatic feeding and assembly. Small slots are used on the circuit board to receive the contacts, resulting in stronger chassis construction. Only one socket assembly need be stocked since terminals can be interconnected by printing the circuit on the chassis board rather than using a metallic connector on the socket itself.

Insulator is molded of general-purpose or low-loss phenolic. Contacts are brass or phosphor bronze, plated to suit your specification. Supplied with or without center shield. Now available in 7-pin construction with 9-pin miniature and other types to follow. Tube Shield Ground Strap can also be furnished.



2 New Sylvania Solderless-type Sockets for wire-wrapped connections are now being made in all 7 and 9-pin miniature sizes. Contacts are shaped to provide reliable connections with the use of present wire-wrapping tools.



See the full story of Sylvania's Fabricating Services in Sweet's Catalog — Product Design File. Look for **1b** **Sy**

For full information concerning these or other Sylvania parts, or special quality components engineered to your own specifications, write to Dept. 4A-4406, Sylvania today.

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HANDSET



General



With push-to-talk switch



3 conductor handset



4 conductor handset with push-to-talk switch

KEY, Telegraph



Simple

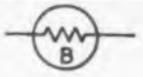


Simple with shorting switch

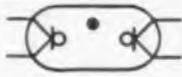


Open circuit or pole changing

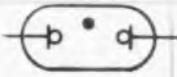
LAMP



Ballast Lamp, Tube



4 terminal fluorescent lamp

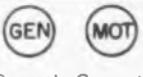


2 terminal fluorescent lamp



Incandescent illuminating lamp

MACHINE, Rotating



General, Generator and Motor



Rotating Armature with Commutator and Brushes or Slip Rings



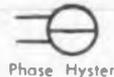
Compensating, or Commutating, Series and Shunt Fields



Generator or Motor dc, Permanent Magnetic Field



DC compound Motor with Commutating or Compensating Field Winding



1 Phase Hysteresis Motor



Reluctance Motor



Synchronous Motor with Neutral brought out

MAGNET, Permanent



METERS



A letter or letter combination from the following list shall be placed within the circle to indicate the function of the meter or instrument unless some other identification is provided in the circle and explained on the diagram.

- A Ammeter
- AH Ampere-hour meter
- CMA Contact-making (or breaking) ammeter
- CMC Contact-making (or breaking) clock
- CMV Contact-making (or breaking) voltmeter
- CRO Oscilloscope or cathode-ray oscillograph
- D Demand meter
- DB DB (decibel) meter
- DBM DBM (decibels referred to 1 milliwatt) meter
- DTR Demand-totalizing relay
- F Frequency meter
- G Galvanometer
- GD Ground detector
- I Indicating
- M Integrating
- μ A or UA Microammeter
- MA Milliammeter
- N Noise meter
- OHM Ohmmeter
- OP Oil pressure
- OSCG Oscillograph, string
- PH Phase meter
- PI Position indicator
- PF Power-factor meter
- RD Recording demand meter
- REC Recording
- RF Reactive-factor meter
- S Synchroscope
- TLM Telemeter
- T Temperature meter
- TT Total time
- VH Varhour meter
- V Voltmeter
- VA Volt-ammeter
- VAR Varmeter
- VI Volume indicator
- VU Standard volume indicator
- W Wattmeter
- WH Watthour meter

MICROPHONE



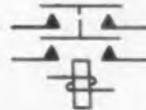
RELAYS



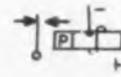
Relay, basic



Relay coil



2-pole, double make



Polarized Relay with Transfer Contact



Relay Protective Function Balance, General



Relay Protective Function under, General

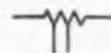


Relay Protective Functional Differential, General

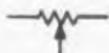
RESISTORS



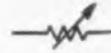
General



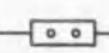
Tapped Resistor



Resistor with Adjustable Control



Adjustable or Continuously Variable Resistor



Instrument or relay shunt

RESONATORS



General: Common for coax and waveguide

SHIELDING



Normally used for electric or magnetic shielding. For other shielding, note should so indicate

SHIFTER, Phase



General



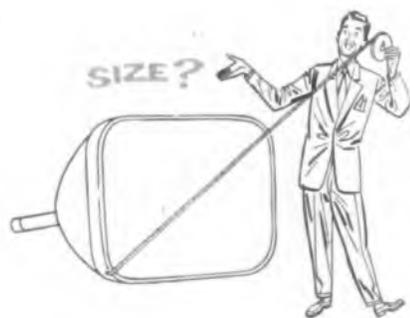
Adjustable



Better Contrast!
 Longer Life!
 Availability!

What are your Aluminized Picture Tube Problems?

Now Sylvania offers a full line!



TODAY, because of greatly increased facilities and improved manufacturing techniques, Sylvania is in a position to offer you perfect answers to your aluminized picture tube problems.

And, much more than your physical spec requirements, Sylvania Aluminized Tubes also offer the finest *performance!* These tubes give whiter whites and blacker blacks . . . a 6-times better picture contrast.

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SUPPRESSION, Mode



Commonly Used in Coax and Waveguide

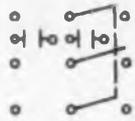
SWITCHES



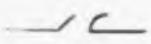
General Single Throw



2 pole double-throw switch showing terminals



3 pole double-throw knife switch with auxiliary contacts and terminals



Switch with horn gap



Pushbutton make switch spring return



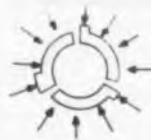
Toggle



Key Relay Jack



2-position Key Switch with Locking Transfer and Break Contacts



Wafer, 3-pole, 3 circuit with 2 non short & 1 shorting moving contacts



10 point selector switch with fixed segment contacts



Safety Interlock Circuit Opening

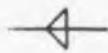
SYNCHROS



Synchro, general

If identification is required, add abbreviations
 CDX—Control Differential Synchro Transmitter
 CT —Synchro Control Transformer
 CX —Synchro Control Transmitter
 TDR—Torque-Differential Synchro receiver
 TDX—Torque-Differential Synchro Receiver
 TR —Torque-Synchro Receiver
 IX —Torque-Synchro Transmitter

TERMINATIONS



Cable Termination



Short Circuit, Movable Common for Coax and Waveguide



Terminating Resistor Common for Coax and Waveguide



Path Open Path Shorted Terminating Series Capacitor

THERMISTORS



THERMOCOUPLES



Temperature Measuring Thermocouple

TRANSDUCERS, Mode



General: commonly used in coax and waveguide



Transducer from rectangular to circular waveguide

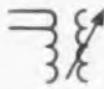
TRANSFORMERS



General



Shielded Transformer with Magnetic Core



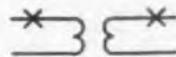
One Winding with Tap, one Winding Adjustable



3-phase Induction Regulator



Current Transformer, Polarity Marked



Potential Transformer Polarity Marked



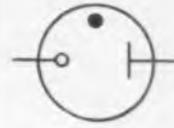
Delta Transformer Connections 3 phase



TUBES, Electron



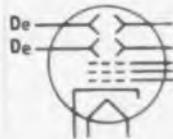
Triode, Indirectly Heated Cathode. Add grids for tetrode, pentode, etc.



Cold Cathode Gas Tube, Rectifier, regulator for dc



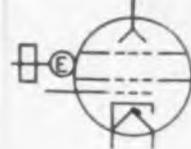
Photomultiplier Tube



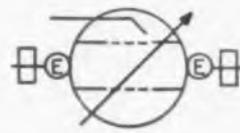
Cathode-ray Tube with Electrostatic Deflection. Remove De for Magnetic Deflection



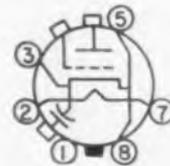
Magnetron Tunable, Loop Coupled



Reflex Klystron Integral Cavity, Aperture Coupled



Transmit-Receive (TR) Tube. Gas filled, tunable integral cavity, aperture coupled with starter



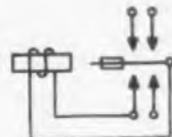
UHF triode (disk-seal type) with internal capacitor. Tube terminals added as shown where desired

CRYSTALS

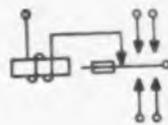


Piezoelectric Crystal

VIBRATORS



Shunt Drive Vibrator



Series Drive Vibrator

NOTE: IRE ASA standards provide two types of symbols, single line and complete. Single line symbols are intended to show essential components and functions in simplified form. Complete diagrams indicate the complete circuit and the devices used therein. In some cases, only a single or complete symbol is available for a particular component. Where a choice of single or complete is available, the complete type is used here, with the exception of amplifiers, adjustable phase shifters, and synchros where more common usage has dictated the use of single line forms.

For Improved and More Compact Circuits!

Sylvania's versatile new
POWER TRANSISTOR
2N68

Here's a simple, rugged unit which provides an efficient solution to numerous power requirements including: Servo systems, control applications, and compact radio receivers.

This versatile Sylvania development permits 1.5 watts dissipation with no external heat sink. Its power gain is better than 10 db. And, it may be mounted in any position, with lead wires soldered or clipped for socket mounting. For further details and technical data, write today to Dept. 4E-4406, Sylvania.

Electrical Ratings

Collector to Base Voltage -25 volts
 Collector Current -1.5 amps.
 Dissipation in Free Air 1.5 watts

Typical Operating Conditions

Push-Pull Class B Amplifier ... Grounded Grid or AC
 Grounded Collector Circuit.

Power Output 3 watts (MIN)
 Collector Voltage -12 volts
 Load Resistance 24 ohms to
 each transistor.
 Collector Current @ Zero Output -5 ma
 Collector Current @ 3 Watts Output -320 ma
 Collector Efficiency @ 3 Watts
 Output 75%
 Power Gain > 10 db
 Frequency Response > 10 KC
Another reason why it pays to specify Sylvania



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