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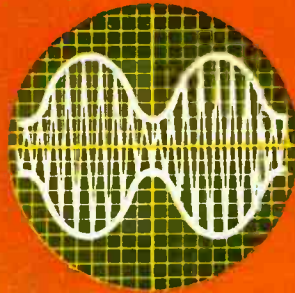
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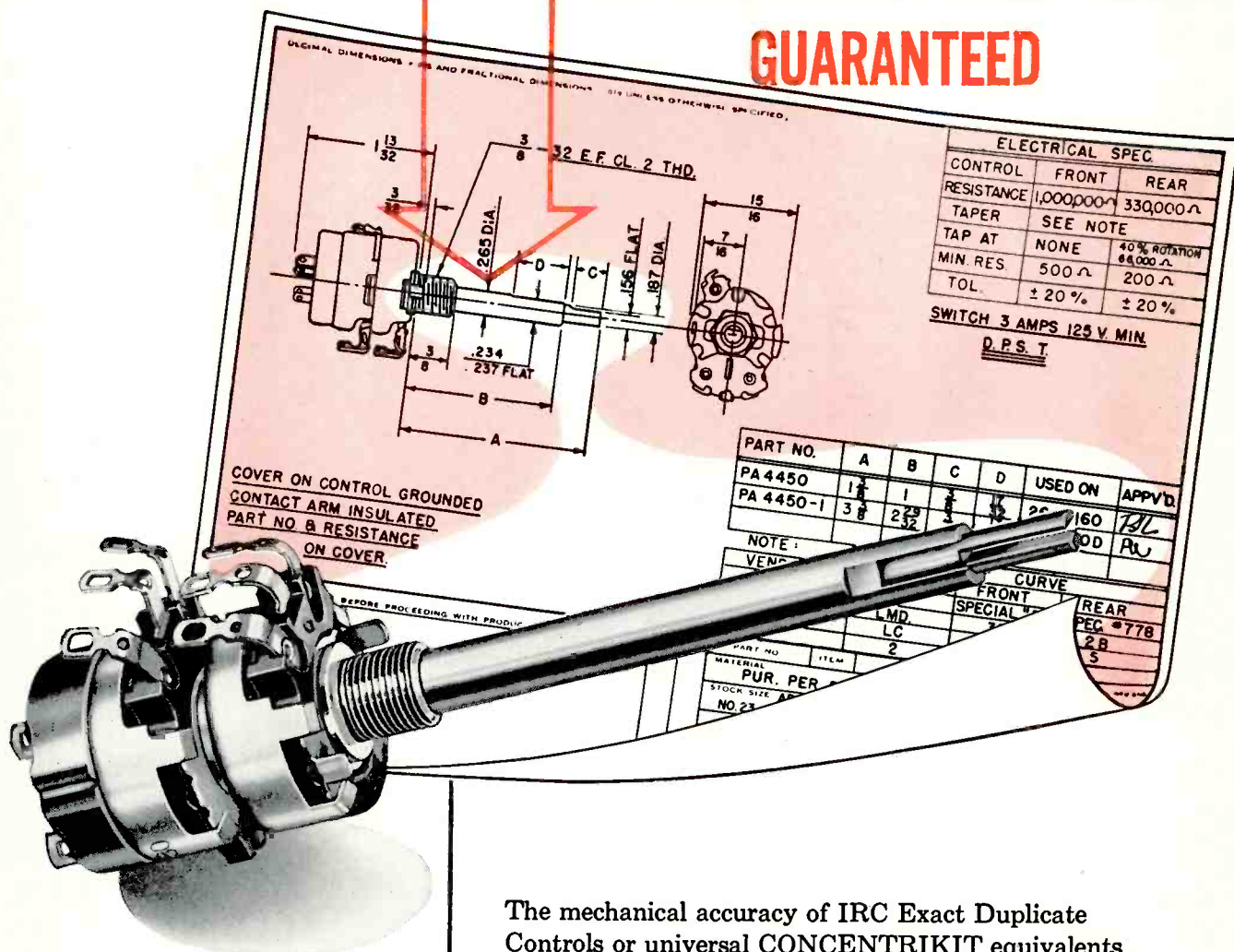
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CIRCULATION

This issue 50,000, which includes 45,114 professional servicemen and service managers of retail stores, 2,006 parts distributors, plus manufacturers and miscellaneous.

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MAY, 1954

TECHNICIAN'S COVER this month reflects the wide diversity of its contents. The photo showing servicemen installing a color TV chassis in its cabinet was made by Westinghouse people at the company's Metuchen, New Jersey plant.

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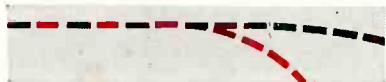
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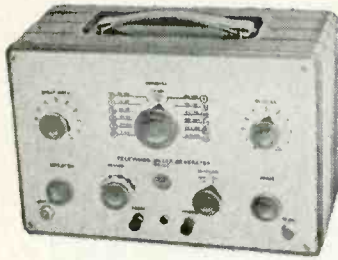
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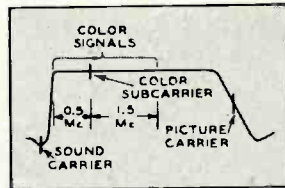


Fig. 1. RF-IF Response

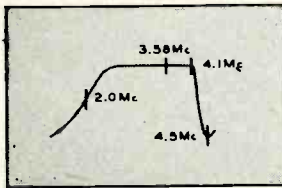


Fig. 2. Bandpass Filter Response

The rf-if amplifier must be aligned correctly to provide flat response for modulating frequencies up to 4.1 Mc. The RCA WR-59C Sweep Generator and WR-89A Marker Generator provide

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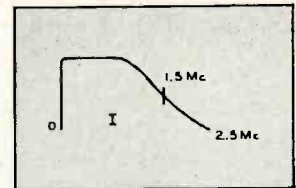


Fig. 3. I Channel Response

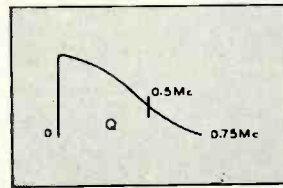


Fig. 4. Q Channel Response



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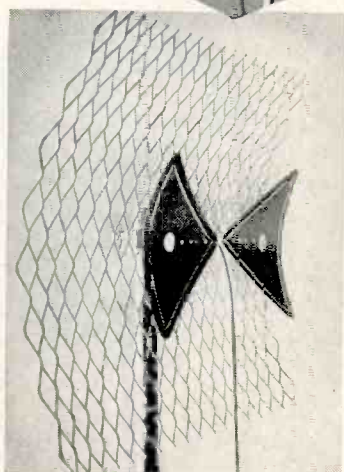
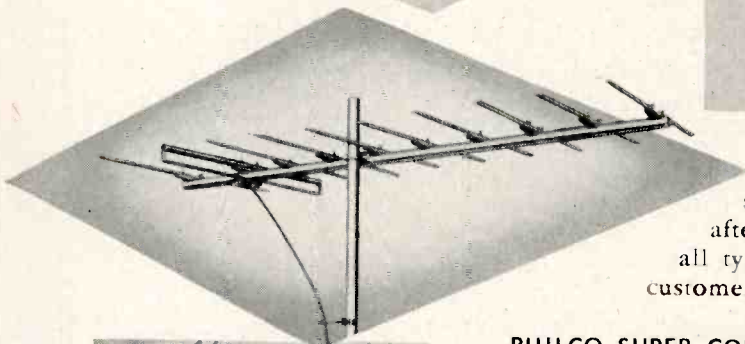
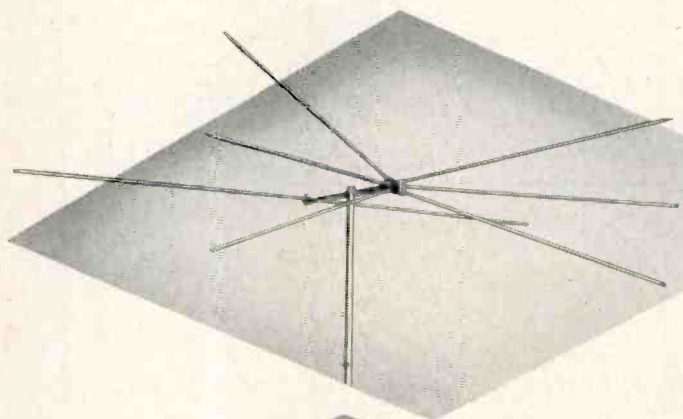
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Full 45" dowelled aluminum antenna elements and full 53" dowelled aluminum reflector assure strong signal pickup on VHF channels 2 through 13... top quality performance on UHF channels 14 to 83.

Single or stacked array Super Conicals produce new balanced performance... super picture quality plus high gain. All-aluminum construction in the Super Conical... it's easy to erect: Part No. 45-3096.

PHILCO SUPER YAGI VHF ANTENNAS

Quick-rig model with ten elements gives top fringe-performance on VHF channels 2 through 13. Excellent front to back ratio (6 to 1). This Super Yagi eliminates ghosts in strong signal areas... selects signals

from adjacent weak area channels or co-channel stations. 10 db to 12 db gain depending on channel. Strong, all-aluminum: Part No. 45-3112. (Single channel 2 thru 13 and broadband 2 thru 6; 7 thru 13; 4, 5, 6).

PHILCO PARAFLECTOR ALL-CHANNEL UHF ANTENNA

Light weight pre-assembled all-channel UHF antenna. Outstanding performance in far-fringe areas. High gain... 8 to 10 db. Exceeds gain of corner reflector of like dimensions. Impedance matched to 300

ohm line. Completely assembled, all-aluminum construction... can be mounted on existing masts for immediate use... all-channel paraflector weighs only 1½ lbs: Part No. 45-3071.

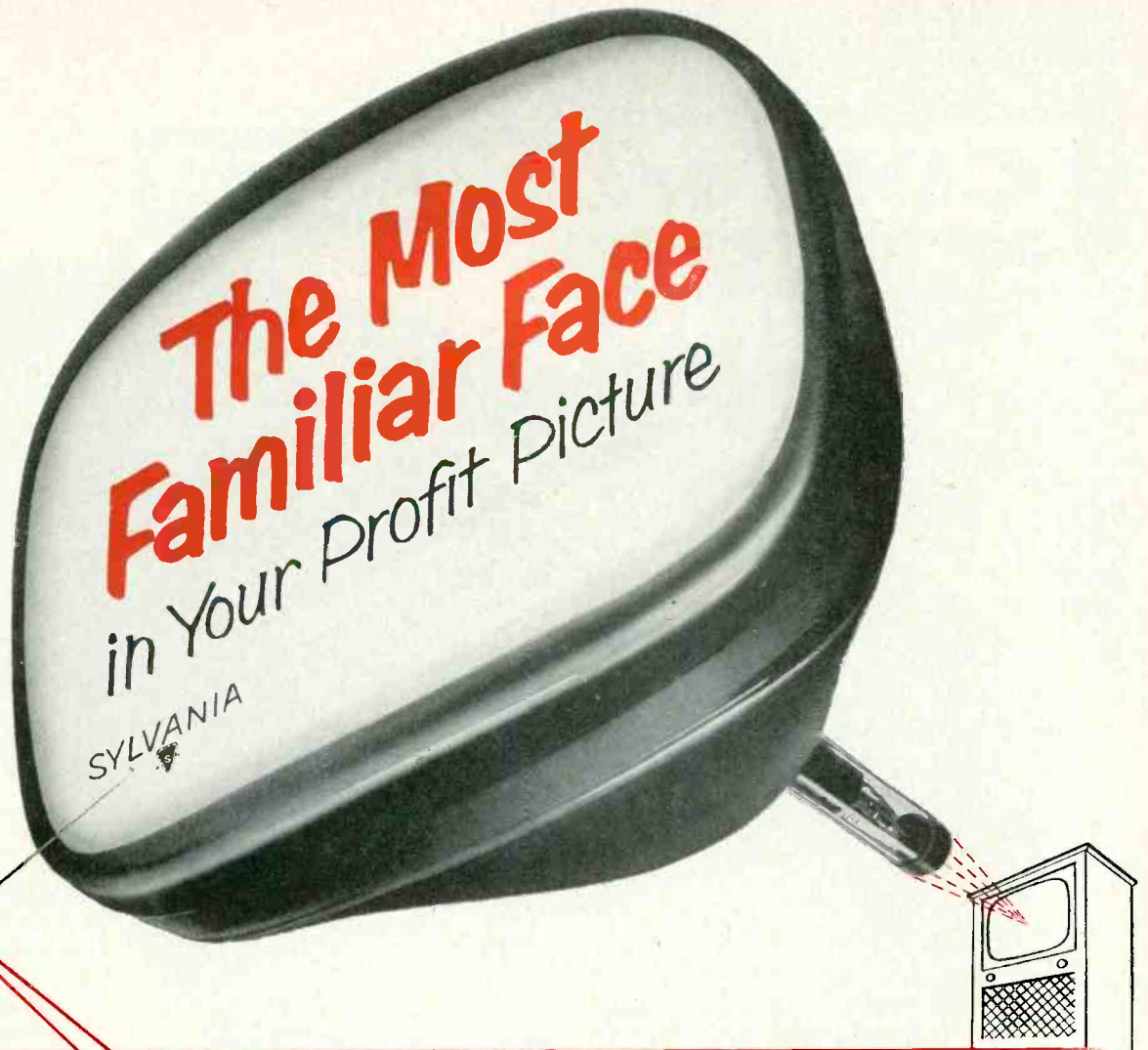
See them today at your Philco Distributor



PHILCO CORPORATION

ACCESSORY DIVISION

"A" and Allegheny Ave., Philadelphia 34, Pa.



The Name SYLVANIA etched on the face is assurance of RECOGNIZED QUALITY

When your customers "replace the face," show them this picture tube etched SYLVANIA! They know it's the name that means leadership and dependable performance!

Your customers will appreciate the favor of being offered the top value for their investment . . . and, to most people, a new TV Picture Tube is *definitely* an investment.

Backed by Nation-wide TV Show — The story of Sylvania Picture Tubes' quality and the facts about their winning exhaustive tests is being told again and again to millions on the high-ranking, weekly TV show, "Beat the Clock."

There's a Sylvania Picture Tube Distributor near you who offers excellent service, cooperation and a full range of available tubes. You'll find it profitable to do business with your Sylvania Distributor and to push the full Sylvania line,

Make sure your customers know all the facts about picture tubes. Ask your Sylvania Distributor for a free supply of these booklets to give to your prospects.



SYLVANIA

Sylvania Electric Products Inc., Dept. 4R-4205, 1740 Broadway, New York 19, N. Y.

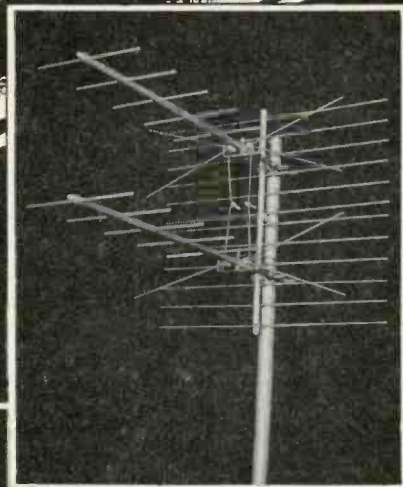
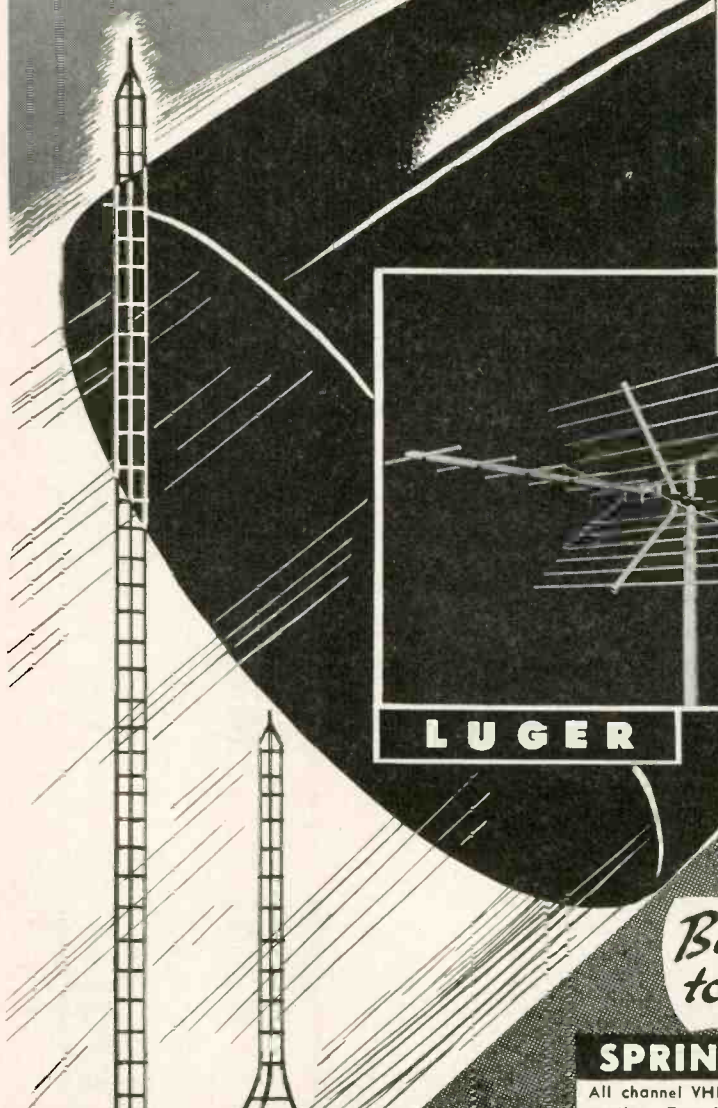
In Canada: Sylvania Electric (Canada) Ltd., University Tower Bldg., St. Catherine Street, Montreal, P. Q.

LIGHTING • RADIO • ELECTRONICS • TELEVISION

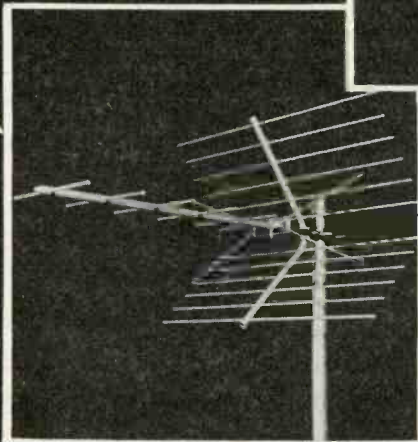
the Fabulous

COLT and LUGER

HI-POWERED
ALL CHANNELS
UHF
ANTENNAS



COLT



LUGER

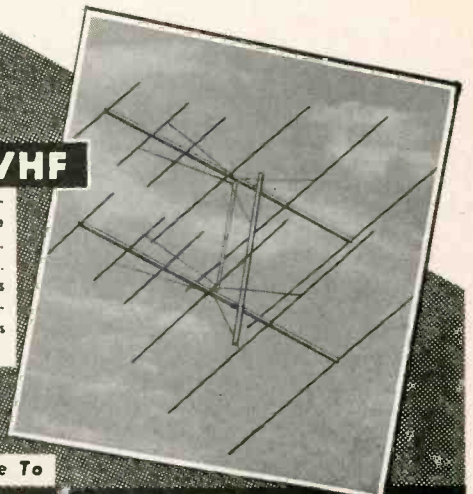
COLT—An all channel UHF, two bay array. Complete aluminum construction. Exceptional results in fringe areas 50 miles & more. A sure remedy for installations having poor receptions. Dealers Cost \$6.95

LUGER—The Corner Reflector Deluxe, all channel UHF. Weight 1 lb. 3 oz. All aluminum construction to be used on any installations having extreme adverse conditions. Viewers satisfaction assured. Dealers Cost \$4.80

Built to Last

SPRINGFIELD VHF

All channel VHF for deep fringe reception. Two Bay array complete with mast and Stacking Harness. All seamless aluminum construction. Through unique design antenna is held in perfect alignment horizontally and vertically Dealers Cost—\$20.95.



TOWERS

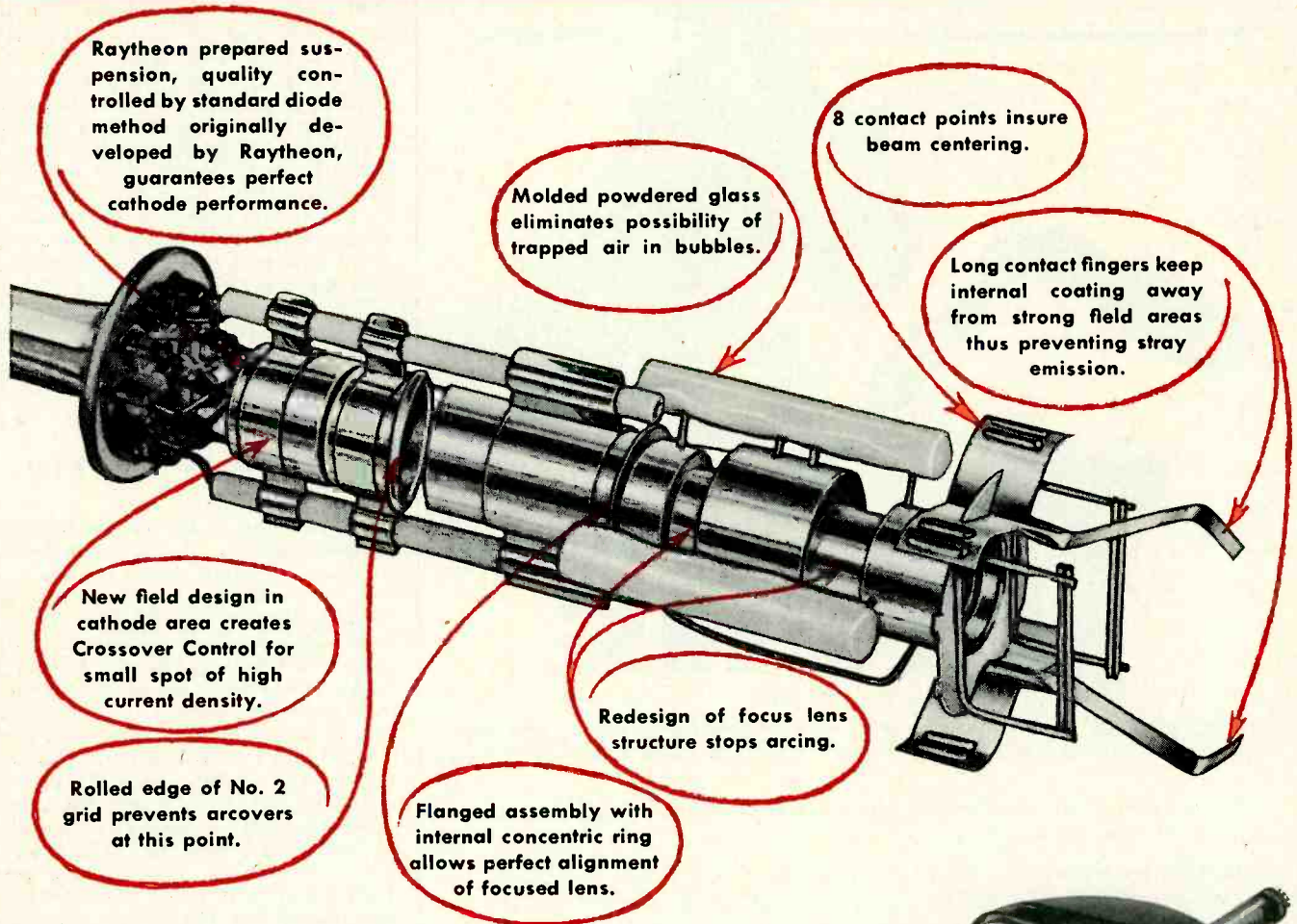
The "RANGEFINDERS" are built in 10" sections. Welded construction. 12" triangular, 16 gauge 10-20 steel. Dipped and baked, corrosion resistant. Fifty foot self supporting.
Dealers Cost, 10' section \$14.75
Roof Top "RANGEFINDERS"
identical material and construction—
Dealers Cost 5' \$ 8.00
10' \$14.75

For Complete Details and Prices Write To

BULLET ELECTRONICS CO. 2637 LOWELL AVE. SPRINGFIELD, ILLINOIS

NEW **RAYTHEON** GUN WITH CROSSOVER CONTROL

Helps RAYTHEON PICTURE TUBES
Set New Standards of Picture Quality



Raytheon prepared suspension, quality controlled by standard diode method originally developed by Raytheon, guarantees perfect cathode performance.

Molded powdered glass eliminates possibility of trapped air in bubbles.

8 contact points insure beam centering.

Long contact fingers keep internal coating away from strong field areas thus preventing stray emission.

New field design in cathode area creates Crossover Control for small spot of high current density.

Redesign of focus lens structure stops arcing.

Rolled edge of No. 2 grid prevents arcing at this point.

Flanged assembly with internal concentric ring allows perfect alignment of focused lens.

For crisp, clean, high definition pictures, you can't beat Raytheon Picture Tubes with the new *Crossover Control Gun*. This new gun has a specially shaped grid designed to keep the electrostatic field undisturbed. Emission from the center of the cathode is vastly improved eliminating slow electrons from the edges which overshoot and smear. These design improvements do away with tailings and halos, lines and spots won't blur even under highlight conditions.

You owe it to your customers and yourself to *replace with Raytheon*. Ask your Raytheon Tube Distributor for complete information.



Excellence in Electronics

RAYTHEON MANUFACTURING COMPANY

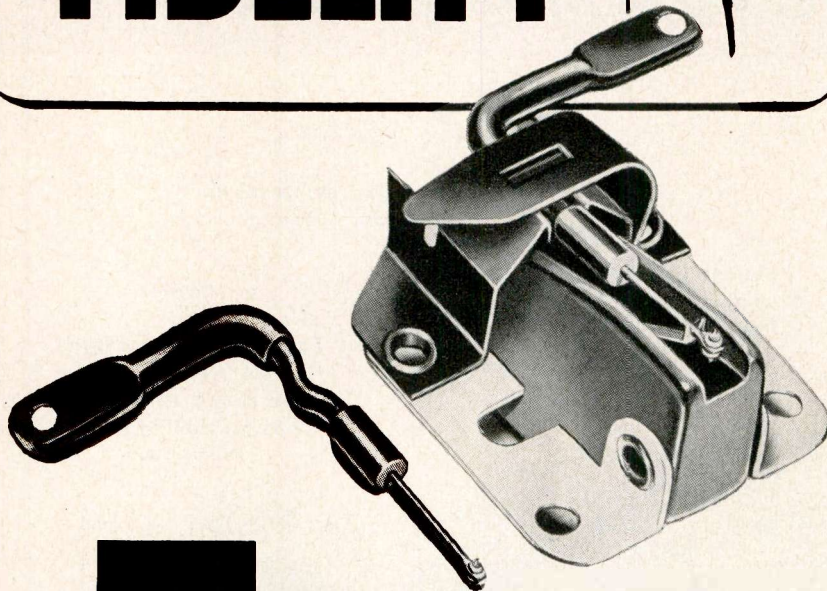
Receiving Tube Division
Newton, Mass., Chicago, Ill., Atlanta, Ga., Los Angeles, Cal.

RAYTHEON MAKES ALL THESE:

RELIABLE SUBMINIATURE AND MINIATURE TUBES • SEMICONDUCTOR DIODES AND TRANSISTORS • NUCLEONIC TUBES • MICROWAVE TUBES • RECEIVING AND PICTURE TUBES

The *FIRST STEP* in

HIGH FIDELITY



TITONE

CERAMIC CARTRIDGE

There is no wiser investment a phonograph owner can make than a TITONE ceramic cartridge.

Costing no more than ordinary "replacement" cartridges, TITONE gives a world of difference in results — an entirely new experience in true high-fidelity sound, no matter what the make of phonograph.

And only *two models* will replace most present-day installations!

No other cartridge gives all these features!

No preamplifier or equalizer needed • Unaffected by moisture or temperature • Wide frequency range • Outstanding response • High sensitivity • Low distortion • High compliance • No hum pickup • Superior tracking ability • Wide adaptability • Proper groove fit • Only needle rotates • Simple to replace

Used by America's foremost manufacturers of high-fidelity phonographs, TITONE is an original discovery and development of the Sonotone laboratories. Literature available.

ELECTRONIC APPLICATIONS DIVISION

SONOTONE CORPORATION

Elmsford, New York

LETTERS To the Editors

Cut-throat Service

EDITORS, TECHNICIAN:

I want to discuss this problem with you. It has to do with the \$1.50 per service call repairman and these "shop on wheels" boys. . . . Are these men geniuses who can figure out even the toughest, most remote defect in a few minutes in any of the approximately 1800 TV models in use today? Or are they "con" men who fast talk the customer to cover their false claims?

How do the "shop-on-wheels" men obtain occupational licenses? They have no business-zoned location and the ones I know live in strictly residential areas. When I got my license, I had to have a business address (zoned for business) to put on the license. If they operate strictly on the up and up, I want to know how, so I can join them and unload my overhead.

The whole deal looks shady to me. But if I am wrong, please tell me the facts.

HARRY C. KELLER

Hialeah, Florida

Wants More Antenna Data

EDITORS, TECHNICIAN:

I would like to see an article about vertical patterns of popular antennas at various heights above ground.

I know our case is typical of many sections of the U.S. We are located about 125 miles from stations on Channels 3, 5, 8 and 13 and the terrain is pretty flat between here and the transmitters. Our distance sort of places us out of the so-called "fringe or super-fringe" areas, as we don't think we are getting any of the direct signal. The signal we get must be reflected or refracted by some of the layers up above.

There are several thousand sets in this town and the mast heights vary from about 25 ft. to 70 or 80 ft. above the ground. The odd thing is that some of the low antennas are close to the high ones, perhaps next door, and are doing as well and some are doing better. I wonder if it is possible to get an antenna too high and upset the vertical pattern caused by ground reflections.

Antenna ads show horizontal patterns, but I have never seen one showing vertical patterns or recommending a high or low installation to get the maximum gain in the right direction up and down. A pamphlet put out by Zenith Radio Corp. called "A Compendium on Improving Fringe and Tropospheric Area Reception" by J. C. Spindler indicated a lot of two-bay jobs were not operating as well as the single-bay jobs because signals come into ultra-fringe areas at an angle. The author suggested tilting the front end of the antenna up about 15 degrees to get maximum average gain and reduce fading.

According to the AARL Antenna Handbook, a similar effect will be obtained by adjusting the height above ground until the desired elevation angle is obtained.

(If) the problem . . . is discussed in one of your fine articles, it will interest a lot of technicians.

KEITH BENNETT

Greenwood, Mississippi

Technician's Wife Speaks

EDITORS, TECHNICIAN:

Subject: "So Much for So Little." Let the public have that page. Reader's Digest, Coronet, Look, etc., helped do the damage; it's time some of it is corrected. I'm the gal who smooths the feathers (or tries) of some of these people who think all technicians are crooks. They want all for nothing. It's very late; the public needs something to make them realize they have too much for too little.

MRS. GEORGE E. MORGAN
Los Angeles, Calif.

"So Much for So Little"

EDITORS, TECHNICIAN:

I wish to compliment you on your article "So Much for So Little" in March TECHNICIAN. Nothing was ever truer spoken. It should be made into handbill form so servicemen could hand them out and mail them to their customers. Why people and newspapers pick on the few dishonest TV and radio servicemen all the time and never say a word about the doctors, dentists, garagemen, undertakers, plumbers, dress shops that ask \$50 to \$75 for a \$10 product, and hundreds of others, I can't understand. More power to you for kicking it back into their teeth.

C. W. BLATCHLEY
East Freehold, New Jersey

(We'll quote a price for handbill-size reproductions if you tell us how many you want. Quantity orders of 100 or more will be accepted.—Ed.)

Bouquet from Association

EDITORS, TECHNICIAN:

(Our) association wishes to thank TECHNICIAN for the most advanced and most helpful literature or periodical available to the TV service industry today.

JAMES E. TRUETT, pres.
Television Technicians' Association
of Greater Little Rock
North Little Rock, Arkansas

Music to Our Ears

EDITORS, TECHNICIAN:

I have been a subscriber to your TECHNICIAN magazine for quite some time now. I have read it thoroughly each month and have been very much impressed with its contents. It is clear, concise and right to the point.

BOB E. WILLIAMS
Wichita, Kansas

**INTERNATIONAL
RECTIFIER
CORPORATION**

EL SEGUNDO
CALIFORNIA

**TV
BOOSTER
and
CONVERTER
TYPES**

available in all
standard
current
and voltage
ratings

*Selenium
Rectifiers*

widest range
in the
industry

**RADIO
RECTIFIERS**

universal
replacement—
wider
range

*Germanium
Diodes*

Write for
Bulletin
JRP-2

Now Available Through Your Favorite Jobber

**INTERNATIONAL RECTIFIER
CORPORATION**

1521 E. Grand Ave., El Segundo, Calif. • Phone: ORegon 8-6281
CHICAGO: 205 W. Wacker Drive • Phone: Franklin 2-3889
NEW YORK: 501 Madison Avenue • Phone: Plaza 5-8665

ELECTROLYTICS

FROM THE

Specialist
IN THE FIELD!



LARGEST MIDWEST MANUFACTURER CELEBRATES 20th YEAR HAS PRODUCED MILLIONS OF CAPACITORS

ILLINOIS CONDENSER CO. manufactures the finest electrolytic capacitors in the entire industry!

This specialization is important to YOU! It means that ILLINOIS electrolytics are the most advanced in the field, incorporating design and manufacturing excellence found in no others.

ILLINOIS "firsts" are many since they have pioneered and are still pioneering in this important field of electronics. A few of these advancements are: rugged all aluminum internal structure, exclusive patented phenolic molded cap structures with molded in terminals, balanced and neutral electrolytes for long life and wide temperature ranges.

That's why ILLINOIS capacitors are first choice of service engineers as well as most leading manufacturers of electronic equipment. You'll find ILLINOIS capacitors in TV-Radio and communications around the world.

Chances are ILLINOIS manufactures just the electrolytic you need for your product — and if not, who is better qualified to design and build one to your exact specifications?

Your Jobber can supply you with any standard ILLINOIS electrolytic — so be sure to see him first!

Write — TODAY — for ILLINOIS CONDENSER's new catalog which lists more than 400 different electrolytics. In addition it contains a wealth of electrolytic capacitor information!



ILLINOIS CONDENSER COMPANY

1616 N. THROOP STREET

CHICAGO 22, ILLINOIS



Reg. U.S. Pat. Off.

7,168 Service-Dealers Cashing in on CQS

**SURVEY SHOWS 78% OF SERVICE-DEALERS
REPLYING REPORT ENTHUSIASTIC
SUPPORT OF CQS PLAN!***

Using the *Certified Quality Service* plan? If not, you may be losing business to your competitor across the street. If you *are* using the CQS tags and all the sales aids available to you, you're all set. . .

*Survey conducted January, 1954

AND HERE'S GOOD NEWS!

**Your NATIONAL ADVERTISING continues to sell
for you in LIFE during May and June.**

BE SURE YOU HAVE YOUR CERTIFICATION TAGS



Your national advertising says, "Ask your Service-Dealer for this CQS Tag." Tie in. All you have to do is:

1. Use your improved, colorful, multi-use CQS Tags to build more business and greater customer confidence . . . *in you*.
2. Use your CQS signs, posters, decals, and other sales aids. Make it easy for customers to find you.

CQS Tags are available: 250 for \$2.25, 500 for \$3.50, 1000 for \$6.00, with your 3-line imprint. Ask your distributor salesman for special offer . . . or use coupon to order direct.

GET YOUR CQS CBS-STAR KIT

Contains 6 smashing, big, colorful, magnetic CBS-Star streamers. Each features a different CBS-TV star: Benny Burns and Allen . . . Gleason . . . Godfrey . . . Murrow . . . and Marie Wilson. Each is a different size and shape. Each sells the Star Performance of your *Certified Quality Service*. Kit also includes a new inside/outside CQS decal and a Business Builder's Catalog showing the many sales aids available to you. CBS-Star Kit is *free* with CQS Tags . . . Kit alone, 25¢.

Let folks know you're the Service-Dealer they read about in the national magazines. Ask your distributor salesman for special offer . . . or use coupon. Order your Tags and CBS-Star Kit today.



Manufacturers of Receiving Tubes Since 1921

CBS-HYTRON Main Office: Danvers, Mass.

A Division of Columbia Broadcasting System, Inc.

A member of the CBS family: CBS Radio • CBS Television
Columbia Records, Inc. • CBS Laboratories • CBS-Columbia • and CBS-Hytron



**Building New
Tube Business
for You!**

CQS dealers themselves help you sell CBS-Hytron Mirror-Back and CTS-Rated tubes.

CBS-HYTRON, Danvers, Mass.

Please rush me:

A CBS-Star Kit free with . . . CQS Tags (quantity)
@ \$2.25, 250; \$3.50, 500; \$6.00, 1000

A CBS-Star Kit *only*
@ 25¢ (for handling and mailing)

I enclose \$. . . to cover Tags and/or Kit.
(Please send cash, check, m.o. . . no C.O.D.'s.)

HERE IS MY 3-LINE IMPRINT FOR TAGS
(please print name and address)

Name

Street

City State

Signed

Hold Everything!

ON
ELECTRIC SOLDERING GUNS



WEN

IS BRINGING OUT
A NEW LINE

and it's Terrific!

- PRICE WISE
- PERFORMANCE WISE
- SALES WISE

Nothing like it on the market. It's a sales "natural". Shown for first time at the Chicago Parts Show, May 17th thru 20th.

CONRAD HILTON HOTEL . . . DISPLAY ROOM 602-A

WEN PRODUCTS, INC.

5808 NORTHWEST HIGHWAY

CHICAGO 31, ILL.

INDUSTRY KEYHOLE

DU MONT ADS are giving support to franchised dealers by warning that TV sets sold by unauthorized sources may not carry the Du Mont warranty . . .

INTERNATIONAL RECTIFIER CORP., El Segundo, Calif., has appointed Allen S. Nelson as Manager of Distributor Sales . . . **TWO-WAY SWAP** of UHF info at sales meeting of Granco Products, N. Y., benefited company and sales representatives. Visiting salesmen reported on UHF situation in their respective areas; company filled in on overall picture, and will use regional reports for engineering and production guidance . . . **KAY-TOWNES ANTENNA CO.**, Rome, Ga., will unveil a line of super-fringe antennas at this month's Parts Show in Chicago.

A POINT-OF-SALE COUNTER DISPLAY, available from JFD Mfg. Co., Brooklyn, N. Y., makes use of 11 actual lightning arresters, all different, mounted on a background of red-and-white "lightning." The display, which sells for the price of the arresters alone, dramatizes the need for these devices and gives the buyer a choice of models . . . **DICK MORRIS, SALES MGR. OF SNYDER MFG. CO.**, Philadelphia, announces the appointment of A. H. Patton Co. of Atlanta to represent Snyder in Tennessee, Georgia and Alabama. Patton has been calling on the radio and TV trade in this territory for 15 years . . . **TYPE 413 20 KV FILTER** ceramicon condensers (Erie Resistor Corp., Erie, Pa.) are being put out in display cartons containing 7 terminals (5 types) to meet a wide variety of installation needs.

CURTAILED PRODUCTION OF 15-IN. COLOR CRT'S was announced by GE, because of public resistance to the small picture size. While pilot sets using this size are still being made, the outlook is toward larger tubes . . .

SYLVANIA'S NEW MIDWEST SALES MGR. IS H. A. BROWE, formerly of Motorola. Browe will deal with distributors and dealers in Chicago, South Bend, Milwaukee, Green Bay, Peoria, Grand Rapids and Fort Wayne . . .

A POINT-OF-SALES WALL DISPLAY features actual models of 9 TV accessories marketed by Vidair Electronics Mfg. Co., Lynbrook, N. Y.

NEW SOUND MOVIE IN COLOR, "Ready for Sea," dramatizes production and testing of electronic equipment for marine use made by Raytheon. The 16-mm film runs 13 minutes . . . **SELF-SELLING DISPLAY RACK** is part of spring promotion campaign for auto aerials by Ward Products Corp. of Cleveland. The rack, which sells for \$2.50, will hold 36 Ward antennas . . .

PRECISION APPARATUS CO., Elmhurst, N. Y., has designated M & P Sales Co., Needham, Mass., as sales representatives in the New England area.

STALING OF STOCK IS PREVENTED by new dispenser rack for Astatic phono pickup cartridges. New cartridges are fed into the tops of the

(Continued on page 18)



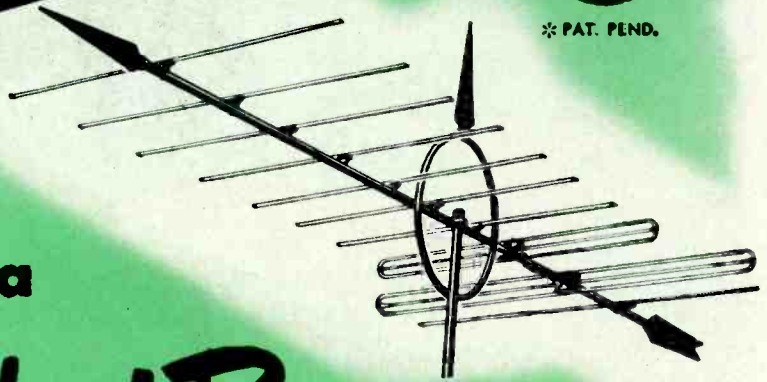
CONICAL
* PAT. PEND.



NEW TELE-VANE ANTENNAS BY WARD



* PAT. PEND.



backed by a

Power Packed Promotion

Here they are . . . the newest idea in TV antenna design — opening an entirely new field for you with vastly increased profits. Tell the 69 million readers of the Tele-vane national consumer magazine ads that YOU sell Tele-vanes! Use Ward's local tie-in advertising aids . . . all featured and shown in this Tele-vane Kit.

It's yours FREE for the asking.



Complete in one kit, all the dope on window streamers . . . mailing piece . . . newspaper ads and mats . . . full color counter display . . . radio commercials . . . TV slides and announcements.



THE WARD PRODUCTS CORP.

DIVISION OF THE GABRIEL COMPANY
1148 Euclid Ave., Cleveland 15, Ohio
Canadian Distributor: ATLAS RADIO CO., LTD., TORONTO, CANADA



Two Recognized Masters

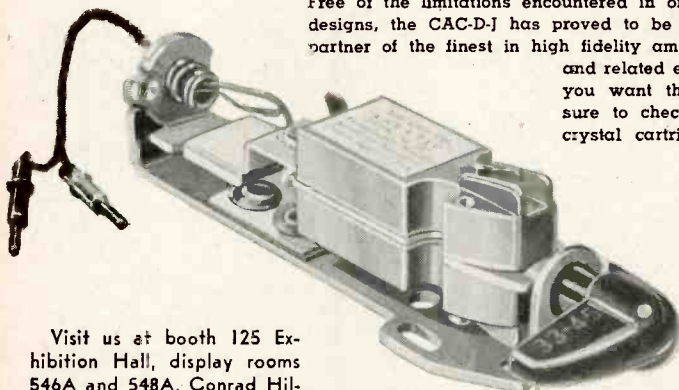
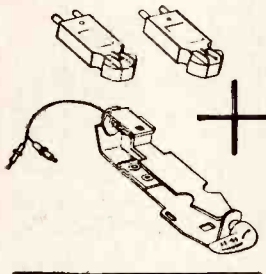
Combined in perfect performance for the ultimate in



*high-fidelity
reproduction*

ASTATIC MODEL CAC-D-J CRYSTAL TURNOVER CARTRIDGE

THE MOST MASTERFUL performer among single needle, high fidelity crystal cartridges is Astatic's Model CAC-J, a result of collaboration between engineers of Astatic and Columbia Records Inc. How to project these same complete tonal values and absolute purity of reproduction into the design of a double needle, crystal turnover cartridge—without loss of perfection—seemed an insolvable engineering problem. But, pioneering in modern, high fidelity equipment proved as natural for Astatic engineers as their work in developing the first commercially produced crystal cartridges and microphones. The revolutionary new design of the Model CAC-D-J was the result. Combining two complete CAC-J Crystal Cartridge assemblies back to back, on a common plate, this unparalleled turnover unit eliminates interaction between needles and permits ideal output and response characteristics for each record type. Free of the limitations encountered in ordinary cartridge designs, the CAC-D-J has proved to be the most logical partner of the finest in high fidelity amplifiers, speakers and related equipment. When you want the very best, be sure to check this master of crystal cartridges.



Visit us at booth 125 Exhibition Hall, display rooms 546A and 548A, Conrad Hilton Hotel, The 1954 Electronic Parts Show.

KNOWN THE WORLD OVER
FOR HIGHEST QUALITY
AT LOWEST POSSIBLE COST

THE
Astatic
CORPORATION
CONNEAUT, OHIO
IN CANADA: CANADIAN ASTATIC LTD. TORONTO, ONTARIO

EXPORT

REPRESENTATIVE: 401 Broadway, New York, N. Y. Cable Address: ASTATIC, New York,

INDUSTRY KEYHOLE

(Continued from page 16)

cabinet's vertical bins. Cartridges are withdrawn from the bottom for first-in-stock, first-out rotation. Rack is available to jobbers only without tie-in purchase deal . . . **MOST RECENT RMS ANTENNA FORUM** was held in Providence, R. I. Martin Bettan, RMS Sales Director, discussed UHF problems with dealers and technicians, who are faced with the problem of providing good reception for Providence residents from newly launched WNET, Channel 16 . . .

DICK MAYERSOHN, SALES MGR. OF RAM ELECTRONICS SALES CO., announces appointment of Clark R. Gibb, 1409 Hennepin Ave., Minneapolis as Ram sales rep for Minnesota and North and South Dakota.

MILESTONES: RAY L. TRIPLETT, prexy of Triplett Electrical Instr. Co., Bluffton, Ohio, celebrated his 50th anniversary in the industry by appointing Burton Browne Advertising of Chicago to launch a big 1954 advertising campaign . . . **THE WEBSTER-CHICAGO CORP.** is observing its 40th anniversary with a 60-day promotional campaign, now in progress. New Webcor items being pushed are clock-radios, push-button tape recorders and pre-recorded tapes.

NEWS OF "THE REPS" For the first time in their history, "The Representatives" of Electronic Products Mfrs., Inc., (offices in Chicago) called a special national delegates meeting to take care of proposals involving by-law changes . . . **R. H. VERMILYA, PREXY OF THE CALIFORNIA CHAPTER**, announces a change of address to 1258 Fitzgerald Ave., San Francisco . . . **TED FELLEISEN, CHICAGO LAND MEMBER**, has moved his firm to 5839 Montrose Ave . . . **GREAT MIDWEST CHAPTER** is the new name for the former Mississippi Valley Chapter . . .

CLOSED-CIRCUIT TV is being used during conventions in Chicago's Hotel Shoreland to keep convention guests in touch with doings while they relax in their rooms. System was installed by a local Chicago service outfit. Good opportunities for alert service technicians in these installations . . . **AMERICAN SCREEN PRODUCTS CO.** of Miami has appointed the W. J. Doyle Co. of Chicago to represent them for sales of antennas and other TV products in Illinois, Wisconsin and Lake County, Indiana . . . **PRODUCTS BEARING THE EMERSON NAME** will be made and sold in Italy under a recent licensing arrangement agreed upon by Emerson Radio & Phonograph Corp. and an Italian manufacturer-distributor.

BIG PRICE CUTS IN PICTURE TUBES are announced by Sylvania, with the promise that there will be no corresponding cut in quality . . . **TWO "NAMES"** in the radio-TV text book field, A. A. Ghirardi ("Radio Physics Course") and R. G. Middleton ("TV Troubleshooting and Repair Guide Books") have been signed by John F. Rider to co-author a series of books on test equipment.

\$8000.⁰⁰ PRIZES

WESTINGHOUSE LEAGUE LEADERS

AND DEALER AID CONTEST



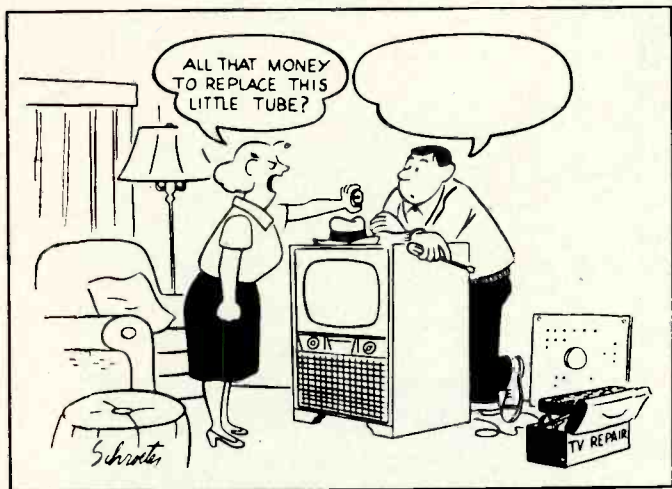
**208 MORE BIG PRIZES
FOR TV SERVICE MEN**

2nd PRIZE \$700 in YOUR Choice of Merchandise
3rd PRIZE \$400 in Merchandise YOU Select
4th PRIZE \$300 YOU Select the Merchandise

STILL TIME TO WIN

Promptness doesn't count as long as you mail your entries before June 30th. So mail in additional entries with new cartoon solutions. Your second or third entry can win \$1,000.00.

- 5 Fifth Prizes of \$140 Each in Merchandise
- 20 Sixth Prizes of \$70 Each in Merchandise
- 30 Seventh Prizes of \$35 Each in Merchandise
- 50 Eighth Prizes of \$20 Each in Merchandise
- 100 Ninth Prizes of \$15 Each in Merchandise



How Would YOU Answer This Service Customer?

Your solution to this cartoon—and your careful selection of American and National League Leaders, as of August 1, 1953—can win \$1000.00 CASH for you. Send in your entry now, for one of the 209 big, valuable prizes in the Westinghouse League Leaders and Dealer Aid Contest. It's easy to qualify.

Just buy 25 Westinghouse Receiving Tubes or 1 Westinghouse Picture Tube for each entry you submit. Winning entries will be judged on the basis of correctness of team selection, and aptness, originality and effectiveness of cartoon solution.

Your Westinghouse distributor salesman will certify your Entry Blank when he takes your tube order. Ask him for additional Entry Blanks.

ET-95051

YOU CAN BE SURE...IF IT'S **Westinghouse**

RELIATRON® TUBES

WESTINGHOUSE ELECTRIC CORPORATION

Electronic Tube Division

Box 284

Elmira, N. Y.

USE THIS OFFICIAL LEAGUE LEADERS ENTRY BLANK

1. League Leaders on August 1st, 1953 were:

AMERICAN LEAGUE

NATIONAL LEAGUE

MY NAME

SHOP NAME

STREET

CITY..... STATE.....

**SEND ALL ENTRIES TO:
WESTINGHOUSE TUBE CONTEST**

P. O. Box 610, Grand Central Station

New York 17, New York

2. Here is what I would say to the Lady in the Cartoon:

(Attach additional sheet of paper if necessary. 100 words maximum.)

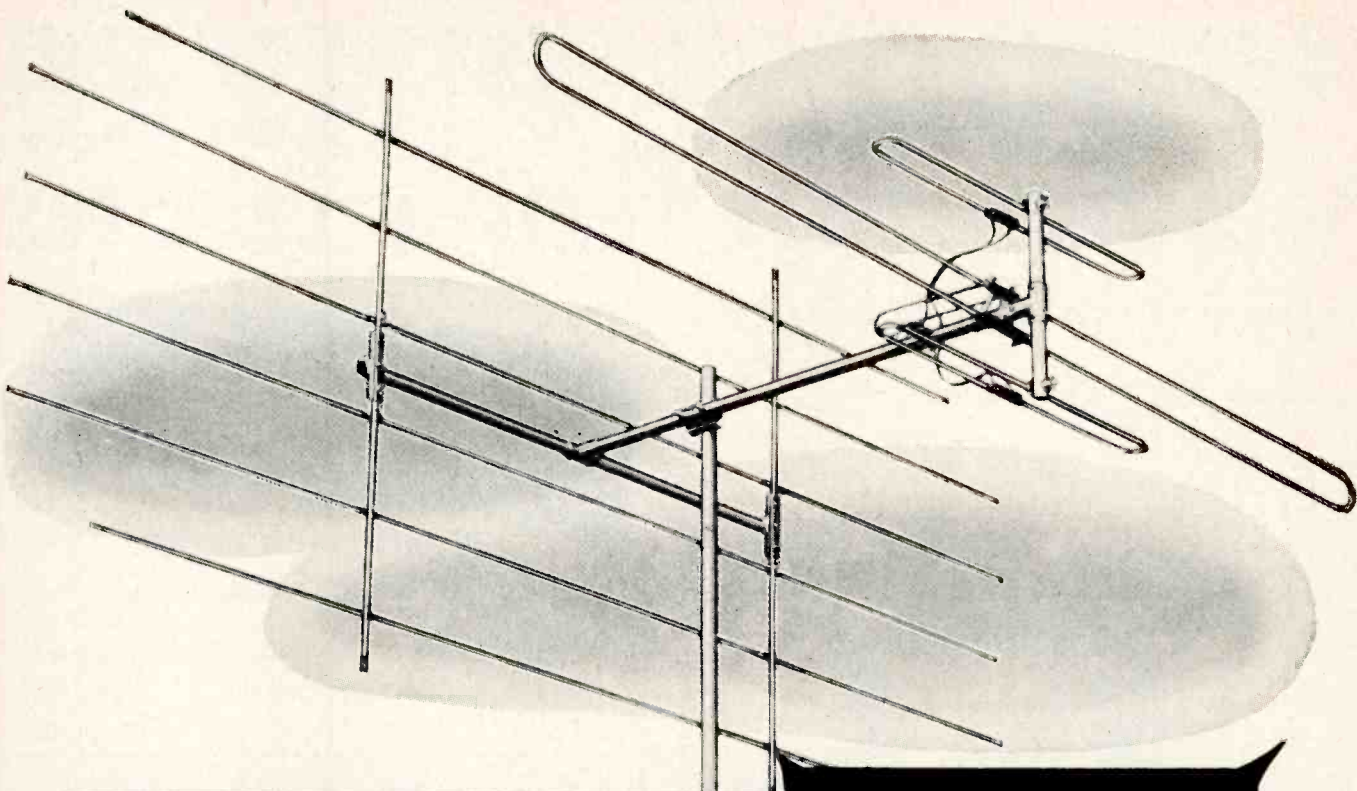
THIS SPACE FOR DISTRIBUTOR'S SALESMAN'S CERTIFICATION

I certify this Entry Blank has been qualified by the purchase of (25 Westinghouse Receiving Tubes) (1 Westinghouse Picture Tube)

Salesman's Signature.....

Company Name.....

City..... State.....



RADIART ULTAMATIC All-Channel TV Antenna

THESE QUALITIES HAVE BEEN COMBINED INTO THIS SINGLE ANTENNA — THE ULTAMATIC . . .

- ★ **LOW VOLTAGE STANDING WAVE RATIO** . . . the mis-match between antenna and transmission line is lower than four competitive types tested, an attribute to its broad band quality.
- ★ **FRONT-TO-BACK RATIO** . . . higher than multi-element, yagi-type antennas, minimizing co-channel interference.
- ★ **GAIN** . . . expressed in decibels, is a ratio of signal voltage developed by an antenna over that of reference folded dipoles. It is not a quality sold by the pound or achieved by the addition of meaningless elements. The curves shown accurately describe the gain of the Ultamatic. Loss of sound or picture due to erratic antenna response is eliminated.

MECHANICAL FEATURES

- ★ Aluminum screen reflector of exclusive fold-out design, assembled in seconds with adequate stability for years of trouble-free service. Longer elements insure maximum front-to-back ratio on channels 2-6 and are more closely spaced for increased performance on channels 7-13.
- ★ Dipole and boom assembly are of heavy gauge, seamless tubing. Dipoles fold out and are rigidly supported and reinforced to minimize sag and sway.
- ★ Specifically designed mechanically by stress analysis of each unit and sub-assembly to provide a low vibrational period of all elements — your assurance of trouble-free installations.

MODEL UM-213 . . . double stacked UM-213-2



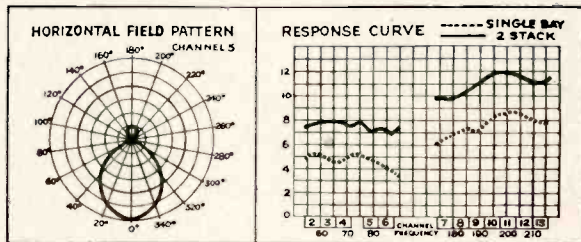
THE **RADIART** CORPORATION
CLEVELAND 13, OHIO

TV ANTENNAS ★ AUTO AERIALS ★ VIBRATORS ★ ROTORS ★ POWER SUPPLIES

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Antenna with
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perfectly synchronized for
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Most Uniform Gain Response The gain response **DOES NOT VARY MORE THAN 3 D.B. ON ANY CHANNEL** across the band. This quality is exceedingly important in color reception to insure adequate color synchronization without resetting.



NEW! G-E SERVICE-DESIGNED TUBES OUT-PERFORM ALL OTHERS!

Specially developed for the TV service industry. Cost the same as types they replace.

Here's what G.E.'s new SERVICE-DESIGNED Tubes mean to you:

- ✓ They cut callbacks on TV repairwork, by doing a far more dependable job than their prototypes.
- ✓ Your tube-inventory requirements are lower. SERVICE-DESIGNED Tubes give top performance in all chassis.
- ✓ Your customers get more hours of trouble-free TV enjoyment . . . because SERVICE-DESIGNED Tubes have longer average life.
- ✓ They cost the same as their prototypes, despite improved performance and long life. You get higher tube value than ever before!

FOR the first time anywhere, a line of tubes has been developed specially for TV servicing—G.E.'s new SERVICE-DESIGNED Tubes. Six types are described on this page. They will soon be followed by others, designed from the ground up to meet the practical requirements of your work.

You can install SERVICE-DESIGNED Tubes in any circuit with confidence, knowing they have the sturdiness, the voltage capacity to stand up. See your G-E tube distributor today! Ask him to show you the new SERVICE-DESIGNED types—explain how they will save you time, trouble, and costs, and increase your list of satisfied television customers! *Tube Department, General Electric Company, Schenectady 5, New York.*

SERVICE-DESIGNED 5U4-GA

The 5U4-G prototype was a tube that did a good electrical job, but was subject to damage from shocks and vibration. In the new SERVICE-DESIGNED 5U4-GA, you have a rectifier that can withstand hard usage. Here are the reasons why:

- (1) Substantial mica supports brace the tube structure at both top and bottom, instead of at the top only. Also, double-fin plate construction gives better heat dissipation.
- (2) Glass bulb now is straight-side, compact, and strong. It is specially

"necked down" at bottom, so the base can be the same diameter as the 5U4-G—enabling the same ring-clamps to be used when installing the tube.

(3) Base construction has been changed to button-stem, with the leads passing through widely spaced individual seals at the bottom of the glass envelope, the same as with miniature tubes. This gives greater strength, also shorter leads and better lead separation. Another advantage of button-stem construction is improved heat conduction, which in turn reduces the chance of electrolysis and air-leakage.

SERVICE-DESIGNED 6BQ6-GA

"Running hot" shortened the life of many prototype 6BQ6-GT's. G-E designers went to the heart of the problem, and—while retaining the same basing layout for interchangeability—gave this tube a king-size bulb that means cooler operation under all normal conditions.

Also, because of special mica design and new processing techniques, the new SERVICE-DESIGNED 6BQ6-GA will handle higher pulse plate voltages than

its predecessor. Internal tube arcing is cut "way down."

In many TV chassis, Type 6BQ6-GT now is pushed to the limit. Replacing with 6BQ6-GA's means far fewer service callbacks due to early tube failures.

A further important improvement in the SERVICE-DESIGNED 6BQ6-GA, is use of a special high-melting-point solder for the plate cap-terminal. This prevents loosening of the terminal when the tube is removed for testing.

SERVICE-DESIGNED 6SN7-GTA

Type 6SN7-GTA has been redesigned to give top performance in all synchro-guide and other TV circuits. Among measures taken to assure this result, is a special factory "chopper" pulse test. The test is made at voltages equal to the lowest line voltages that will be en-

countered in TV chassis of any make.

In all respects and in all circuits, the SERVICE-DESIGNED 6SN7-GTA now will replace Type 6SN7-GT. Capacity of the new tube is much superior to the old. This is proved by the following cross-tabulation of ratings:

	Old 6SN7-GT	New 6SN7-GTA
Max plate voltage	300 v	500 v
Max plate dissip., per plate	2½ w	5 w
Max heater-cathode voltage	90 v	200 v

ALSO READY: 3 MORE G-E SERVICE-DESIGNED TUBES THAT DO OUTSTANDING JOBS . . . AND WHY!

SERVICE-DESIGNED 5Y3-GT

A sturdier tube, with longer life! Mica supports now brace the tube structure both top and bottom. . . new button-stem base adds strength, separates the leads. . . double-fin plate construction gives the SERVICE-DESIGNED 5Y3-GT much improved heat dissipation.

SERVICE-DESIGNED 25BQ6-GA

Cut callbacks with this new tube that runs cooler than its prototype! All the improved features of the 6BQ6-GA. Larger bulb gives ample cooling. Tube handles higher pulse plate voltages. High-melting-point solder protects plate cap-terminal.

SERVICE-DESIGNED 1B3-GT

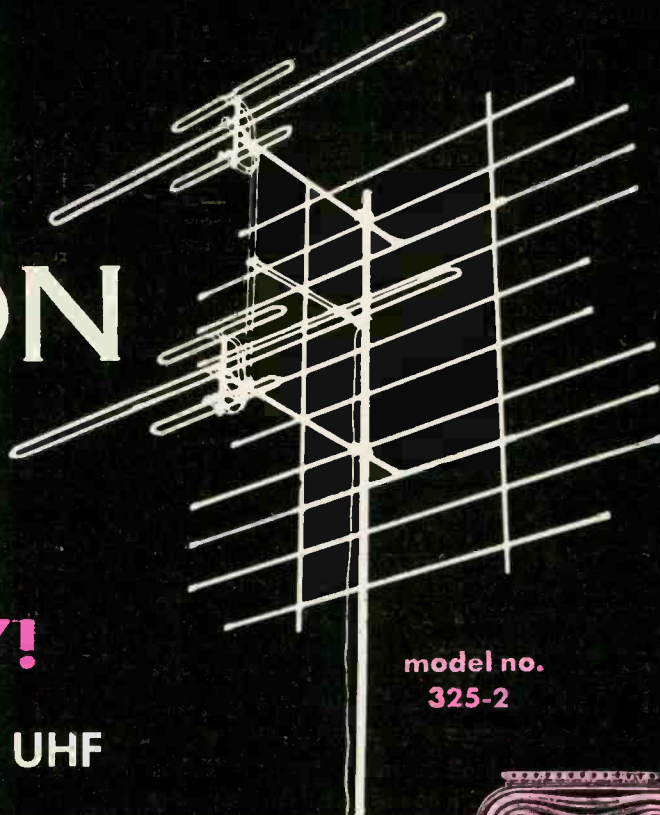
Install and forget! This new tube does a superior job far longer! Special lead glass wards off electrolysis and air-leakage. There is a new ring around the filament which stops "bowing" and the filament burn-outs that frequently result.

GENERAL  ELECTRIC

MORE DEALERS ARE INSTALLING

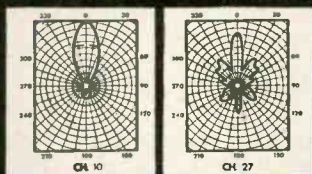
CHANNEL MASTER'S CHAMPION THAN ANY OTHER ANTENNA IN TELEVISION HISTORY!

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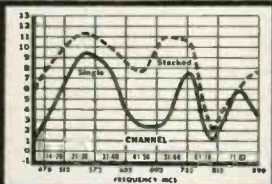
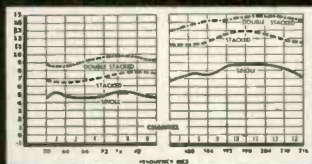


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325-2

HORIZONTAL POLAR PATTERNS
(Relative Voltage)



Gain
(above tuned reference dipole)



ONLY THE CHAMPION enjoys this overwhelming acceptance: over 300,000 already sold!

ONLY THE CHAMPION is powered by the unique "Tri-Pole," the triple-powered dipole system that provides fabulous VHF-UHF fringe area performance. 100% aluminum; rugged, exclusive alloy. Installs in a flash!

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- ★ **FREE** consumer literature

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The antenna America knows best!

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THERE'S ONLY ONE REAL CHAMPION!**

Model no. 325, Single bay; Model no. 325-4, Four bay; Model no. 325-6, Super Champ



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TECHNICIAN

& Circuit Digests

CALDWELL-CLEMENTS, INC., 480 LEXINGTON AVENUE, NEW YORK 17, N. Y.

Hi-Fi Mfrs: Standards Are Overdue!

Second of a Series on Industry Problems

Last month, we suggested that the antenna manufacturers clean house. There is another section of our industry that could use a good broom (or vacuum cleaner). We refer to the Hi-Fi manufacturers. The situation in this field may be summarized as follows:

A substantial number of manufacturers are making units that are Hi-Fi in name only—certainly not in performance. These people are exploiting the current intense interest in high-fidelity to sell the public amplifiers and associated units that are far inferior to the genuine Hi-Fi equipment made by other manufacturers.

The mess is made possible, as well as abetted, by the inability—or unwillingness—of some manufacturers in this field to agree on Hi-Fi standards and nomenclature. Although an industry committee was set up quite some time ago to deal with the problem, it has done very little with this “hot potato” to date.

The reason the potato is so hot lies in the fact that makers of relatively low-fidelity units want to go on getting the benefits of public enthusiasm for high-fidelity by continuing to label their equipment *Hi-Fi*. These people are not eager to accept standards that will either force them out of the Hi-Fi market, or else compel them to make more costly equipment.

Why Make Technician-Dealer the Goat?

What has this to do with the technician?

Just this. Since the technician-dealer stands between the manufacturer and the consumer, he will inevitably be hurt by any questionable tactics at the source. The customer seldom blames a manufacturer—the technician from whom he made the purchase is most apt to be made the goat, when the customer realizes his equipment is not what he thought it was.

With so many slanders regarding the honesty of TV-radio-phono technicians being given wide publicity, why add fuel to the flames, by making the technician-dealer an accessory to an operation whose ethics are not beyond question?

On the strictly service front, the prevailing lack of Hi-Fi standards adds to the difficulty of testing and maintaining Hi-Fi equipment.

It is up to the bulk of the manufacturers in this field to police their section of the industry, and prevent any bad odors from rising skyward. The old, old story of temporary advantage for some, leading to the later disadvantage of many, should not be repeated.

Without standards, there is no way of fingering and eliminating questionable tactics. Let's have standards then, let's agree on nomenclature, let's get together on adequate tests, so the Hi-Fi business can grow bigger and better in a healthy way, beneficial to manufacturer, technician and consumer.

Tuning In the

ON THE BUSINESS FRONT: Prices for service and installation holding up well, but many customers are not paying bills as promptly as they did in most urban and suburban areas. . . Parts and components inventories low at service department level; quite high in distributor warehouses, while few factories have large stocks of finished stuff on hand. . . More parts distributor salesmen believed making outside calls right now than at any time since end of war. . . Good opportunity for service revenue in PA these days. With advent of TV, many technician-dealers let sound business slip out of their hands, so competition isn't nearly as stiff as it was in previous years.

WITH A SLIGHT DECLINE IN SERVICE VOLUME at hand it's necessary to watch one's expenses with an eagle eye, and also to keep right on top of accounts receivable. Of prime importance is the chore of getting out those bills pronto. If the repaired set goes haywire before the bill arrives—and we all know that this can happen to the best of us—trouble in collecting is very likely.

HANDY CARTONS can ease those service checks made on all new TV sets by smart servicers who want to eliminate post-delivery headaches. One manufacturer has helped by devising a convenient carton, which opens front and back. Any set, table or console model, can be checked without removing receiver from the carton. Just flip back cardboard, check set, seal up again and deliver.



TO THE READERS OF TECHNICIAN & Circuit Digests

With this issue of *TECHNICIAN & Circuit Digests*, I am assuming the role of Editorial Consultant to all Caldwell-Clements publications. I am now completing my 46th year in electronic and electrical business paper publishing and since it is my desire to take things a bit easier, I am turning over my responsibilities to Maurice Clements, my associate of 32 years.

In its growth to leading rank in electronic-radio-TV publishing, the company has developed many capable younger executives in the editorial, financial and business departments. Especially do I take pride in the editorial leadership and thoroughness of such strong editorial associates as J. L. Stoutenburgh, B. F. Osbahr, A. J. Forman, S. Heller and S. C. Silver, thus assuring our readers that the company's publications will continue in capable hands.

I wish the company every continued prosperity in the years ahead and, as Editorial Consultant to the company for the next seven years, I will always be ready to help with any problems.

O. H. Caldwell
O. H. Caldwell

TRENDS OF THE TIMES. Consumers buying large numbers of those "midget" TV antennas because of heavy barrages of advertising. . . Fickle public asking very few questions about color-TV sets these days, but store demos are continuing to attract. . . Service volume off in a number of places where unemployment "scares" have taken place, but look for the baseball season to more than make up for the loss. . . New business coming into many shops from "laymen" customers who've bought Hi-Fi gear advertised in consumer publications, and are finding themselves in trouble when it comes to assembling them in the home.

HI-FI IN CHICAGO got its first special newspaper coverage recently, with a 16-page special Sunday supplement in the *Chicago Tribune*. The coverage, which is similar to the pattern established for such special supplements in New York and elsewhere, evidences the increasing interest in audio.

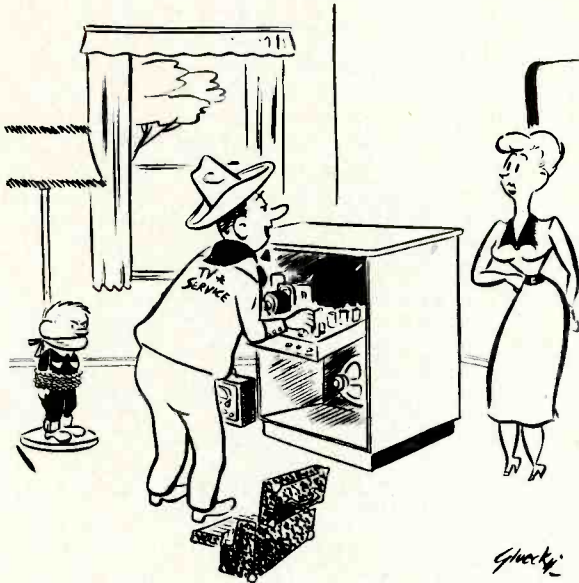
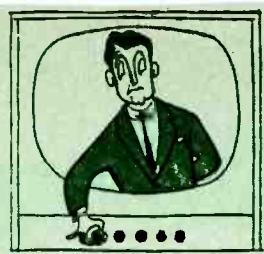
RADIO VS. TV: Nearly twice as many radios as TV sets were made and distributed in this country last year. There are nearly 5 times as many radios as TV sets in use today. (Know anyone with a TV set who doesn't also have at least one radio?) Millions of autos (2 out of every 3) are radio-equipped. Since TV began to "cut down" the radio audience, the number of commercial radio stations in the nation has nearly tripled. There are more than 7 radio stations in operation for every TV channel on the air. Are you still selling TV service only?

LIGHTNING ARRESTOR SEASON IS AT HAND and smart technicians will be doing themselves and their customers a favor in suggesting an original installation or replacement. An evening telephone canvass, carried on with the man of the house, is apt to produce very satisfactory results.

TV ROUND THE WORLD. ENGLAND: Nearly 3 million sets in use. Present trend is toward 17-in. and 21-in. pictures. A 17-in. set sells for about \$225. **WEST GERMANY:** Some stations in operation now, with 22 planned eventually, all on UHF. Popular picture sizes: 17- and 21-in. **FRANCE:** Four transmitters now operating. Others scheduled to be set up. Most sets use 14-in. and 17-in. tubes. **ITALY:** A 4-city network is connected by microwave relay. The average 17-in. set retails for \$400-\$500. Live shows are coming soon, but present dependence is exclusively on films. **RUSSIA:** One station each for Moscow and Leningrad, with small-size picture tubes, outdated in U.S., in current use. However, broadcast techniques and quality of sets are reported to be good.

PRE-RECORDED TAPES promise to accelerate the upward trend in tape recorder sales for the home. Hi-fi musical performances, comparable to the best available on long-play discs, are being marketed by several manufacturers for playback on home equipment. Test tapes for checking home recorders, primarily designed for direct use by tape machine owners, will probably be more useful, in the long run, to service technicians.

Picture



"S'all right, Ma'am, Kids don't bother me,
I always play cowboy with 'em."

AD VOLUME BY THE DOLLAR-A-CALL BOYS is below last year. Reasons: Numbers have folded up, and others feel they can no longer afford the costs of high-priced space in the big city dailies.

INADEQUATE WIRING CONDITIONS affecting TV set operation in some of the large cities, notably when set is hooked on same circuit with room air conditioners, some technicians are finding out. Manufacturers' production of modern home devices is many years ahead of home wiring set-ups.

HE'LL KNOW BETTER NEXT TIME. Technician spent over an hour trying to find a customer's home in Chicago. And was his face red! The customer said the place was tough to locate for "a certain reason"; the service manager tried to explain this to the technician who wouldn't listen because he knew "Chicago like a book." The "home" was a mortuary, and the reason the servicer had so much trouble was because April Fool's Day jokers had switched house numbers and the mortician hadn't had time to find the right one to put back on his front door.

THERE ARE 376 TV STATIONS now operating throughout the country, slightly more than one third of them in the UHF band, but the days of unlimited TV growth may be over. Total eventual number of channels on air at one time may not go much higher than 500.

B & W RECEIVER PRICES will probably remain low, due to general economic trends, plus possible summer sales slow-down. Some quarters had previously expected higher prices, reasoning that public apathy to high-priced color TV sets warranted a return to more normal profit margins . . .

LOOK FOR INCREASED USE OF BOOSTERS AND ROTATORS with color-TV set installations. Now's the time for technicians to become more familiar with these devices.

HEARING-AID RECEIVER, designed by GE primarily for use in civil defense, points up trend toward radios small enough to be held in the palm of the hand. Present version of the transistorized unit operates on 1240 kc, set aside for civil defense.

DUMB GAL WE KNOW swears that her boy friend has a job in a factory making short circuits for those ultra-midget radios. . . Same boy gave her a rabbit-ear antenna for Easter, but she doesn't think it'll have little ones because it was mismatched to the set.

AS VERMONT GOES—Recent FCC grant of a construction permit in Vermont opens the way for that state to have its first TV channel. Currently, we can boast of stations in "only" 47 states. With transmitters operating in neighboring states, however, Vermont has not been without TV service.

MANY TECHNICIANS SERVICE A WIDE VARIETY OF PRODUCTS, in addition to TV, radio, phonos, and the like. For instance, in some sections of the country, TV-radio servicers maintain and install electric farm and ranch fences, electronic medical equipment, electronic equipment in amusement parks; as well as receiving and transmitting units designed for use in boats, planes, police cars, etc. If you do some sort of unusual work in the field of electronic servicing, let's hear from you; we plan to publish letters from readers who perform interesting and unusual repairs.

"NO ESTIMATES GIVEN" is the firm policy of one servicer who has a healthy service business. The man charges a flat \$6 for a home call, figures about 30% of his jobs wind up in the shop. Customers believe in his technical competence and honesty, prefer him to competitors offering lower prices.

CALENDAR OF COMING EVENTS

- May 17-20: Electronic Parts Show, sponsored by Association of Electronic Parts and Equipment Manufacturers; West Coast Electronic Manufacturers Association; Radio-Electronic-Television Manufacturers Association and National Electronic Distributors Association and Sales Managers Club (Eastern Group), Conrad Hilton Hotel, Chicago, Ill.
- June 15-17: Radio-Electronic-Television Manufacturers Association Convention, Palmer House, Chicago, Ill.
- July 12-15: National Association of Music Merchants Trade Show, Palmer House, Chicago, Ill.
- Aug. 25-27: Western Electronic Show & Convention, Pan-Pacific Auditorium, Los Angeles (show) Ambassador Hotel, Los Angeles (convention hq.)
- Sept. 24-26: Fifth Annual TV-Radio Service Industry Convention and Exhibitions, Morrison Hotel, Chicago, Ill.
- Sept. 30-Oct. 2: High Fidelity Show, International Sight and Sound Exposition, Palmer House, Chicago, Ill.
- Oct. 13-16: The Audio Fair, Hotel New Yorker, New York.

Matrix-Adder Troubles in

Localizing Defective Section When

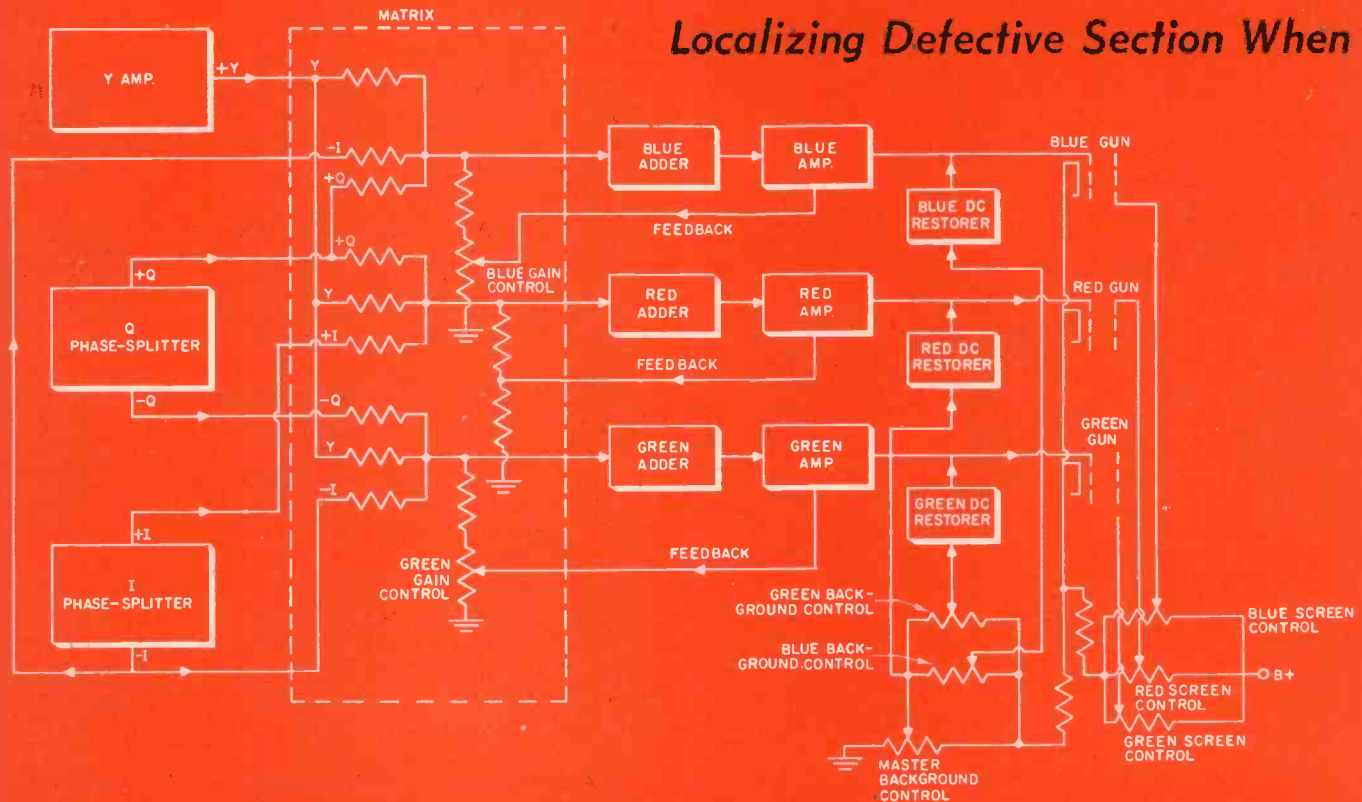


Fig. 1—Block diagram of matrix-adder section in color TV receiver. Stages directly preceding and following this section are also indicated.

• In previous articles, we discussed the causes of various troubles in the color-TV receiver, such as no color, no color sync, etc. In this piece, we will consider problems involving incorrect coloring of a black and white pix received in the color TV set. Some considerations affecting the raster must first be reviewed.

To obtain a white raster, it is necessary that equal amounts of light be emitted by each phosphor in the color crt. Now, the three phosphors present are not equally efficient. The red phosphor has the lowest efficiency; the blue and green phosphors are about equal in efficiency, and nearly twice as efficient as the red phosphor. It is therefore necessary to set up different screen voltages for each crt gun, in order to obtain a white raster.

Another factor that must be taken into account in making adjustments is gun non-linearity. The gun is not a linear device—that is, when the bias in one gun section is reduced, the light output does not decrease in direct proportion. Since the screen voltages in each gun section are dif-

ferent, the three guns will not track (when the brightness level is changed). For these reasons, the bias of the blue and green guns is adjustable, permitting the light output of all three guns to be made equal when the brightness setting is changed.

The adjustments referred to are made as follows: With no signal coming in (contrast setting at zero), the brightness (master background) control is turned fully clockwise. The three screen controls are then adjusted to produce a neutral gray raster. The master background control is next turned down, and the blue and green background controls are adjusted to produce the same shade or hue of gray that was present when the master background setting was more advanced.

No auxiliary red background control is present—since the red gun is the least efficient, the receiver is de-

signed to permit the running of this gun at maximum at all times, with its output dependent only on the setting of the master background control. When the light output created by the three guns has been made equal, the raster will have the proper shade of gray. It is worth pointing out that the master background control regulates the grid voltages of *all* the guns, while the green and blue background controls adjust the bias of their individual sections alone.

Now then—if a raster of the proper size and brightness is obtainable, the sweep circuits must be working properly. If a *gray* raster cannot be obtained, a defect in one of the crt guns, or in a control circuit, is indicated.

To find out which color is absent (remember that all three colors are needed to produce white or gray), the guns may be checked individually. Thus we advance, say, the red screen control, and turn the blue and green screen controls to zero. A red raster should result. If the raster is not uniformly red, purity

BY PETER ORNE

AND

SOL HELLER

Managing Editor, TECHNICIAN

the Color TV Receiver

Black-and-White Picture Shows Improper Tinting

adjustments are required. These adjustments are made as follows:

Make sure that the contrast control is turned to zero, master background setting is at maximum, green and blue screen background settings are at zero, and red screen control is at maximum. Now re-position the yoke. This is best done with no current in the purity coil and field neutralizing coil (the field neutralizing coil compensates for stray magnetic fields, primarily the earth's field, and requires readjustment when the set is moved). The yoke is moved in all possible directions to the position which provides the purest red. The movements most critical with respect to the production of best purity will be the forward and backward ones.

Purity Coil Adjustment

The current in the purity coil is now slowly increased (by suitable rotation of the associated potentiometer), and the coil rotated until the best possible purity (uniform raster coloring) is achieved. The current in the purity coil is kept as low as possible. If some impurity around the raster edges remains visible, the current in the field neutralizing coil is increased. A center-tapped pot that permits the current to be increased or decreased is provided for such an adjustment. The correct adjustment is the one that provides the smallest current compatible with good purity. Purity is always adjusted on the red raster, since the latter is the most critical. When the adjustment has been correctly made for the red raster, it will generally be right for the blue and green rasters as well.

Returning now to our test of the red raster: Check the operation of the brightness (master background) control by observing whether or not it will vary the brightness of this raster. If the indications are normal—i.e., if the raster is uniformly red, and can be varied in intensity by manipulating the brightness control—test the other guns, using a similar procedure.

A more rapid test procedure is possible if the technician knows the complementary relations between

colors—i.e., if he can tell which color is lacking by simply noting the color of the screen. (Complementary colors are colors which produce white when they are added together. In the case of color TV, the important complementary pairs are blue-yellow, green-magenta, and red-cyan.)

If, for instance, the blue gun is defective, the raster will be yellow (green plus red) instead of white; with the green gun bad, a magenta or purple (blue plus red) raster will be visible; with a bad red gun, the raster will be cyan (blue mixed with green).

Before we consider other problems of incorrect colors, the drive supplied to the three grids of the picture tube must be discussed. The differences in phosphor efficiency requires the feeding of more signal to the red gun than to the other two guns. A blue and green gain control are incorporated (refer to Fig. 1), to permit suitable adjustment of grid drive.

To make this adjustment, advance the contrast control to a normal setting. Now adjust the blue and green gain controls on a black and white picture so that the picture highlights have the same hue as the raster (grayish-white). Since a perfect gray or white (all traces of coloring absent) is seldom achieved, the adjustment procedure referred

to should at least assure that the small amount of hue or coloring present remain unchanged at various brightness settings.

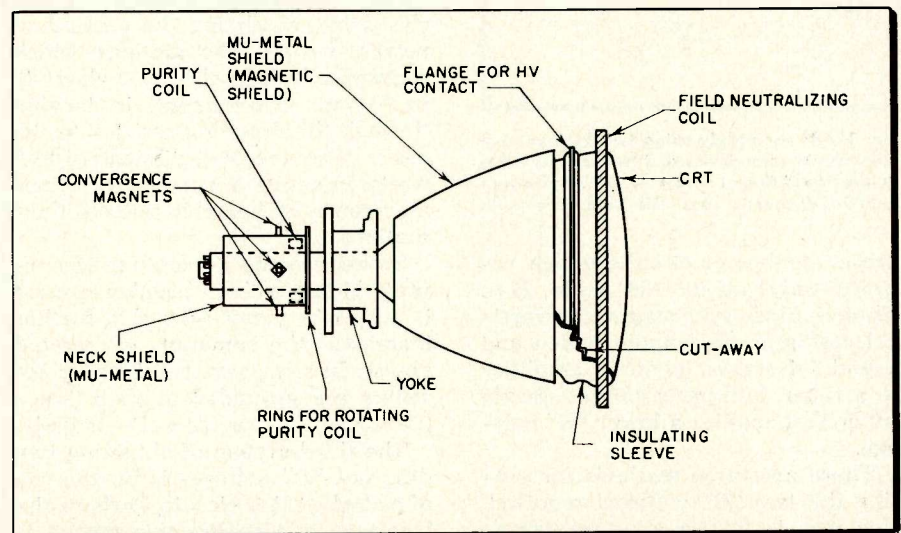
Room Lighting Considerations

It should be kept in mind during this adjustment procedure that the room lighting will affect the apparent hue of the white present. In other words, a shade that will look white in daylight, may look yellow under incandescent room lighting, or blue under fluorescent lights. The receiver should, in consequence, be adjusted under the same light conditions that will be present in the set owner's home.

An inspection of the receiver block diagram (Fig. 1) will help in localizing possible sources of trouble. Suppose that the technician cannot make the highlights the proper shade of white (i.e., appreciable amounts of coloring persist in the highlights). Where can the fault lie?

Well now, Y signal feeds through the matrix in equal amounts to each color adder. Then it passes through the individual color amplifiers and is applied to the various guns. The fact that a correctly-shaded gray raster can be obtained at all settings of the brightness control indicates that the three guns are operating correctly (the raster would show
(Continued on page 58)

Fig. 2—Sketch of color kinescope, indicating the location of components associated with the crt.



Servicing TV Receivers

Troubleshooting Approach to Sets Using a Complicated

By P. WILLIAMS

• Many modern TV receivers use a power supply incorporating a stacked "B" supply (tubes in series). The primary advantage of this type of power supply, from the manufacturer's point of view, is the reduced current drain on the power transformer and the low-voltage rectifiers. In addition, a number of high-wattage resistors can be eliminated, which reduces the heat generated in the set, as well as manufacturing costs. The disadvantage of the stacked "B" supply lies in the servicing difficulties it introduces. With this kind of circuitry present, it becomes considerably more difficult to localize some troubles to a particular section or stage of the receiver.

Before considering servicing procedures for receivers using stacked "B" supplies, let's briefly summarize the development of this type of supply. In modern TV sets, "B" voltages in the neighborhood of 300 volts are necessary for the following receiver sections: Cascade tuners, vertical and horizontal sweep sections, and some video amplifier and audio output tubes. On the other hand, there

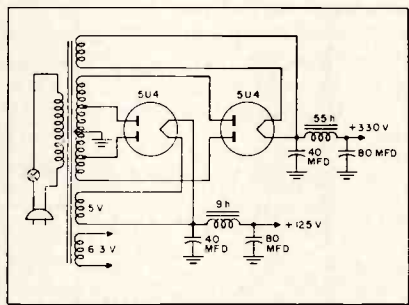


Fig. 1—Power supply using two high-voltage transformer secondaries and two rectifier tubes to provide different levels of B+. Sylvania's 1-508 TV chassis uses this kind of supply.

are a number of circuits which require only about 150 volts B+. These include sync stages, the vertical oscillator, first audio, video and sound i-f stages, pentode amplifier in a tuner, and parts of the cascade tuner that require a lower "B" voltage.

There are three methods for getting the two "B" voltages required. The first is to use a power trans-

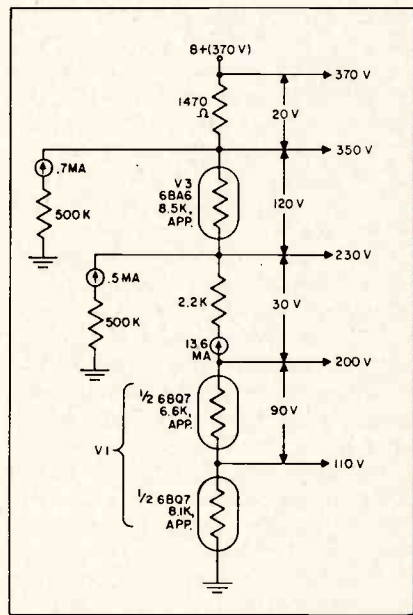


Fig. 2—Most common type of "B" supply. Dotted lines and numbers indicate the circuit arrangement when a B- source similar to that used in the RCA 630 is incorporated.

former with two different high-voltage windings feeding two separate rectifier tubes and filter circuits (See Fig. 1). This is used in very few sets, due to the high cost involved.

In the second system, a series of dropping resistors is used to provide the proper voltages for the various sections (Fig. 2). This is probably still the most popular arrangement. Its disadvantages can best be appreciated by calculating the amount of power wasted. The sections which require only 150 volts draw about 40 to 60 ma; this current, in flowing through the dropping resistor to the 300-volt source, will dissipate 6 to 9 watts. In addition, current variations may cause undesirable voltage fluctuations.

To reduce the percentage of current change, a fixed bleeder current is added in many sets; this further increases the amount of wasted power. In some sets, two bleeder resistors are grounded at their junction point, to provide a B- supply.

The third system of obtaining two different "B" voltages is by the use of a stacked B+ circuit. Perhaps the best way to visualize this system is

to think of a tube drawing the required current as a dropping resistor. The simplest system was made possible by the development of a high-current low-voltage audio power output tube, the 6W6. This tube provided a suitably low value of plate resistance. The 6W6 is essentially the same as the 25L6, but has a 6-volt filament. It requires a plate voltage of only 100 volts; its cathode current is about 40 ma. The dropping resistor used in the second "B" supply system described is simply replaced by the tube. The saving in power comprises the amount dissipated in the dropping resistor of a non-stacked equivalent circuit.

There are other advantages attached to the use of a tube as a resistor. First, the tube will act as a voltage regulator when properly connected, which eliminates the need for a wasteful bleeder network. The regulation is accomplished by using a voltage divider network for biasing the grid of the 6W6 (see Fig. 3).

When a station is received, the AGC voltage goes up, and the current through the i-f tubes decreases. This results in a higher "B" voltage on the plate and screen of the i-f tubes. The 6W6 grid derives its voltage (through a voltage divider) from the i-f plate potential. The 6W6's grid (to cathode) voltage will thus rise under the circumstances. The plate resistance of the 6W6 will consequently go up, and the voltage drop across it will tend to rise, thus keeping the i-f plate and screen voltages from rising appreciably above the level they were at with no signal coming in.

Operation with Weak Signal

When a weak signal is received in a set using a "B" supply bleeder network, the i-f plate and screen voltages will drop, due to the current increase; the sensitivity of the set will thus be reduced. In the set using the stacked B+ circuit, however, the regulation present will maintain the i-f plate and screen voltages very close to normal.

Another advantage of the stacked "B" circuit lies in the absence of high surge voltage on the low B+

with Stacked "B" Supplies

and Not-Too-Well Understood Power Supply Circuitry

line; this permits the use of 200-volt filter condensers in the set. In a receiver using a dropping resistor, on the other hand, 450-volt filter capacitors are required on the 150-volt line, since there is no drop across the resistor until the tubes heat up.

Let us analyze the simple stacked circuit, noting which troubles can readily be isolated, and what differences in service procedure must be kept in mind, in comparison to the servicing of standard sets. In the simplest stacked circuit, the current through the 6W6 flows through the video, sound i-f and sync tubes. The main differences in diagnosis will occur when there is a raster, but no picture or sound.

In a conventional receiver, such a symptom points to trouble in the front end, video i-f section or video amplifier (a modern set using inter-carrier sound is assumed). In case of the stacked-circuit receiver, however, a defective audio output tube can be the source of the trouble. Since the i-f section gets its B+ through the 6W6 in the latter-type receiver, there will be no B+ at the i-f stages if the 6W6 has an open filament, or some comparable trouble is present.

Bias System Troubles

We have been considering the simplest case, of course—the case of the completely dead tube. Component troubles in the 6W6 circuit—for example, an open output transformer, shorted screen bypass condenser, or open cathode resistor—can produce the same symptoms.

Troubles peculiar to this circuit only are worth considering. One group is associated with the 6W6 bias system. In most circuits, some sort of self-bias—cathode or grid-leak—is used, the first depending on a tube's plate and screen current, and the second on the amount of signal. In the case of the stacked B+ circuit, the 6W6 bias depends on the voltage divider present; the voltage division here, in turn, depends on the amount of current flowing in a number of stages.

Considering the voltage divider

itself, we can readily see that a change of value in the resistors (due to heat or other causes) can produce insufficient or excessive bias. Insufficient 6W6 bias will result in distorted sound output, and cause excessive voltage on the i-f and sync tubes. The AGC system present will prevent the excessive i-f plate and screen voltages present from having a detrimental effect, except for the possible breakdown of a bypass condenser. The sync section, however, depends on low plate and screen voltages for proper sync separation; excessive voltages here may cause improper sync separation, resulting in twisting pictures and possibly complete loss of hold.

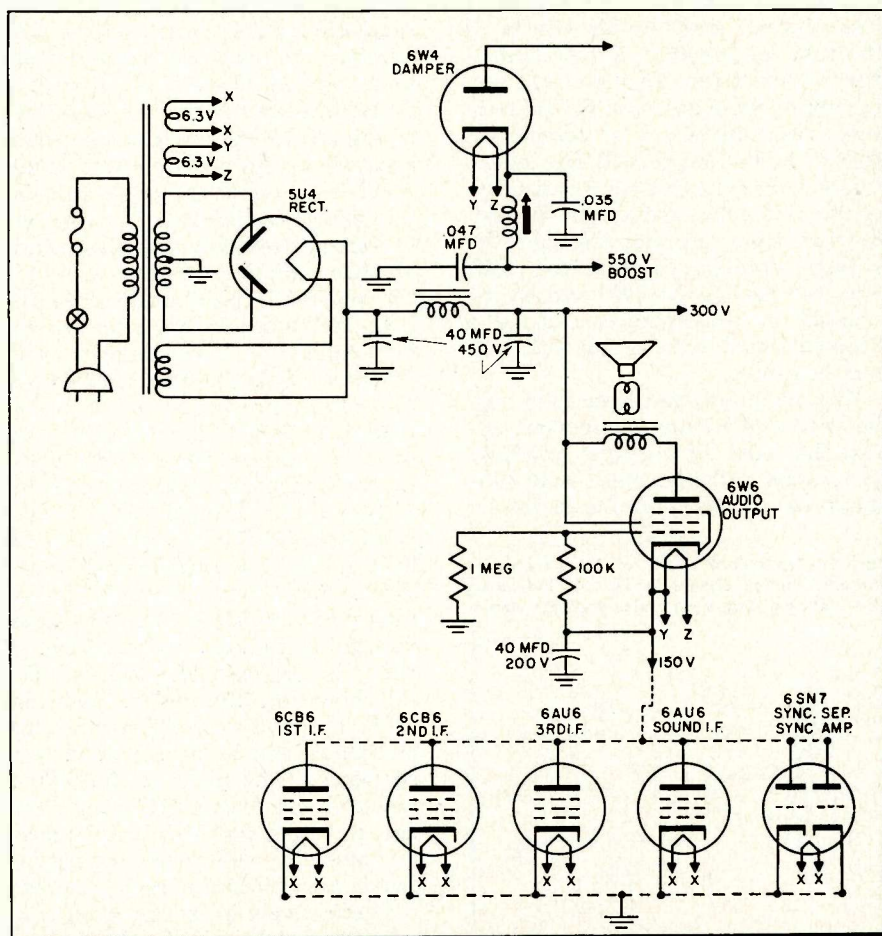
Excessive 6W6 bias will cause the tube to conduct less, decreasing voltages in the i-f section; weak twist-

ing picture and weak sound are apt to result.

Trouble in the video i-f tubes of a stacked B+ receiver will generally cause the same symptoms as in a non-stacked set—i.e., missing or weak picture and sound, and normal raster. AGC circuit troubles will also produce symptoms similar to those produced by corresponding defects in sets using conventional power supplies; excessive agc will cause lowered sensitivity, and insufficient agc is apt to produce buzz, in more severe cases loss of sync, and in still more severe cases negative pictures or no pictures at all.

Trouble in sync stages connected to the stacked line will depend on the amount of current drawn in the stage involved. If the current is small, as it is in a sync separator,

Fig. 3—Basic stacked "B" supply. Crosley's EU series chassis employ such a circuit.



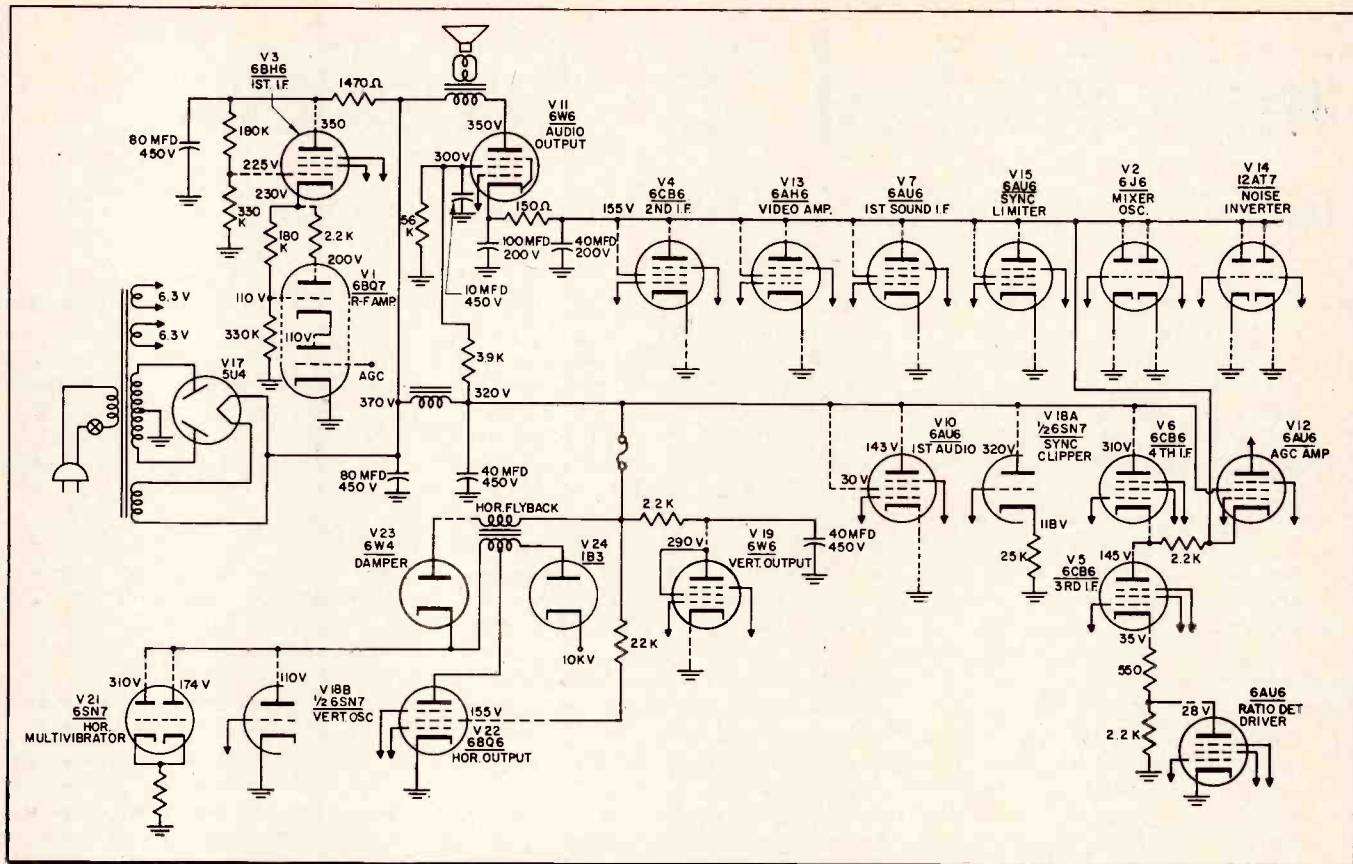


Fig. 4—Part of Bendix T14 schematic, indicating stacked "B" hookup. Dotted lines indicate omission of circuit components.

the effect will be the usual one—i.e., loss of sync, and no side effects. If the tube is, however, a sync amplifier, which normally draws 10 ma, the appreciable decrease in "B" current resulting from a component failure in this stage will (by effectively increasing the plate resistance of the 6W6 tube) reduce the current flowing from ground, through the voltage divider, through the 6W6 etc.; the bias of the 6W6 will be increased in consequence, causing a drop in sound volume (as well as a loss in sync).

The symptoms just described may be produced by any component defect that cuts off the sync amplifier (i.e., open cathode, open tube filament, etc.). Short-circuits in the i-f

or sync section will produce the same effect; it is worth noting that, whereas the dropping resistor might burn out in the event of such a short in a non-stacked set, the 6W6 in the stacked set will not be damaged, under the same circumstances.

One more problem arises in some sets using stacked B+. In order not to exceed the heater-cathode rating of tubes whose cathodes are at a "B" potential, the filament is tied to B+. The tubes in question are the 6W6 and the 6W4 damper tube (refer to Fig. 3). The cathodes of these tubes are not at the same potential. The 6W4 cathode is at boost potential—about 500 to 600 volts; the 6W6 cathode, on the other hand, is tied to its filament and is at a potential of +150 v to ground. If the 6W4 develops a cathode-to-filament short, there will normally be no high voltage (since the "B" boost voltage is reduced to the level of B+); in the case of a stacked B+ set, however, the defect will also cause the 6W6 to be short-circuited, and there will be no sound in consequence. (The plate of the 6W6 is now fed, not from a "B" boost voltage, but from the +150 v B+; since no potential difference exists between cathode and plate of the 6W6, it is effectively short-circuited.)

From the simple circuit we have

Fig. 5—Equivalent circuit of 1st i-f and r-f amplifier tubes shown in Fig. 4, indicating the voltage drops in this stacked circuit.

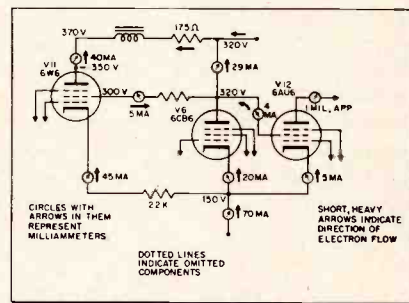
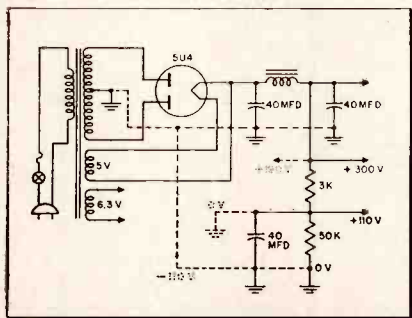


Fig. 6—Equivalent circuit of 6W6, and the 1st video i-f and agc tubes with which it is in parallel. The 6CB6 and the 6AU6 provide a path for current in excess of the 6W6's capacity.

just discussed, a number of others were developed with more complicated series-parallel B+ arrangements. Probably one of the most complicated is the one present in the Bendix T14 chassis. Fig. 4 shows the B+ distribution in this set.

The rectifier cathode (to ground) voltage is +370 v. The rectified voltage is applied through a separate resistance-capacitance filter to two tubes stacked: the 1st i-f (6BA6) and the r-f amplifier (6BQ7).

The plate and screen currents of the 1st i-f tube flow through the r-f amplifier. The total of the two is about 11 ma. The voltage drops set up in the stacked tubes just referred to is indicated in Fig. 5.

Effectiveness

Factors Needed in Building a Successful Service Business

By R. H. SCHNEBERGER
National Service Manager,
Crosley, Radio & Television

We believe service is the most exacting job in our business.

We can do 95% of sales quota in business and feel that we have done an excellent job; if we do only a 95% service job, we are in trouble. Our effectiveness depends on three things: 1. Leadership 2. Equipment 3. Training and Morale.

Morale is something that takes a long time to build; but it can be easily destroyed. Furthermore, no organization can consistently have high morale when the people in it know the equipment they have to do with is inferior, and when they cannot have full confidence in their leadership.

The success of any business depends on people who are well trained, and who stay with an organization long enough to do their job without too much close supervision. Service personnel perhaps more than any other is sensitive to this. Too much good will is lost through having poorly trained people with low morale serving the public. If turnover in personnel is heavy it means generally that one of two things is wrong: 1. Either the wrong person was selected for the job, or 2. He is disappointed with what he found.

It is unnecessary to discuss who is wrong if the man is disappointed with what he found. Of course we might blame it on him; but are we sure we explained fully what he might expect?

If the wrong person was picked for the job, it is obvious where the responsibility rests. We see then that leadership is responsible for morale.

If the equipment a person has to use is not what it should be, it will affect his attitude; and if because of it he doesn't stay, it is obvious again where the responsibility rests. We see then how important leadership is.

It is not our purpose here to criticize, but rather to try to point out the importance of morale and the factors which contribute to it. A service department can overcome any obstacle if the morale is high. It seems that we could make no better contribution to our success than to see that morale is kept at its highest peak. Whatever it costs, the lack of it is surely more expensive.

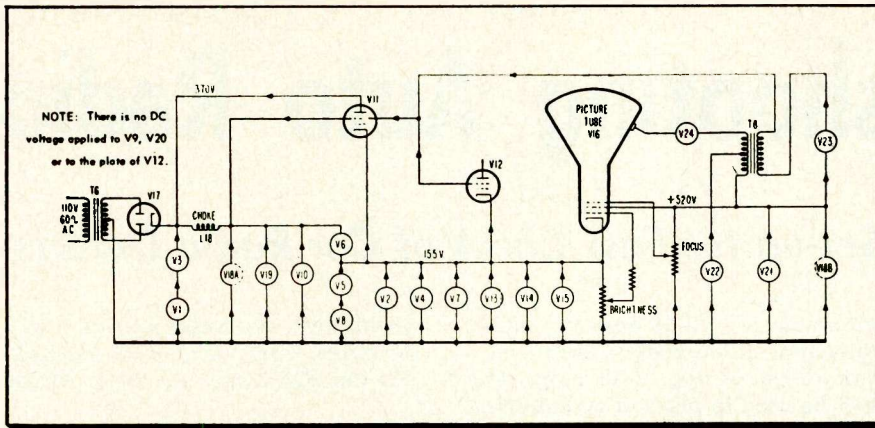


Fig. 7—Diagram indicating current distribution in Bendix T14 chassis (courtesy Bendix).

The 6W6 audio output tube is stacked in this circuit in the same way as the 6W6 in Fig. 3. In the Bendix chassis, however, the total current of the tubes in the 6W6 cathode circuit is higher than the plate current of the 6W6. To make the circuit work properly, the extra current is diverted through the fourth i-f and agc tubes, which have been connected in parallel with the 6W6 (see Fig. 6).

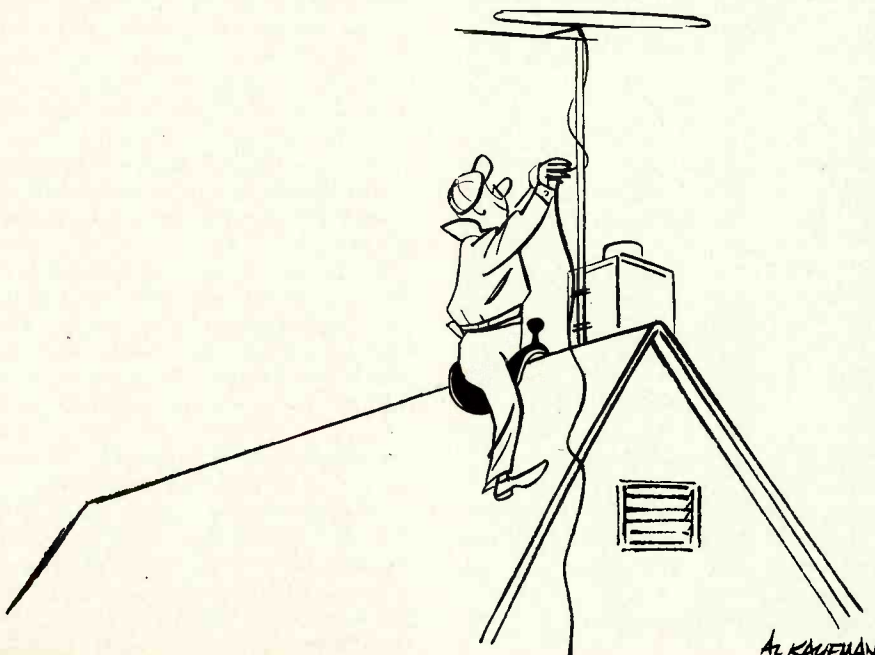
The screen of the 6W6, which of course carries some of the 6W6 cathode current, is connected (through a resistor) to the output side of the choke, for filtering; the plate and screen of the fourth r-f tube, and the screen of the agc tube, are similarly connected, for the same reason.

Two more tubes are stacked: the 3rd video i-f, and the ratio detector driver. This is possible since the ratio detector driver, being a limiter, requires only 30 volts at its plate and screen. The current distribution diagram shown in Fig. 7 will help

clarify the stacking arrangements referred to.

In servicing the stacked B+ circuit, it must be remembered that clues normally pointing to trouble in a given section are not to be fully trusted. Some defects, like coupling condensers, will produce conventional symptoms. On the other hand, troubles affecting the voltage or current in a tube may cause abnormal symptoms.

The best procedure to follow is to first try the usual remedies, as in servicing sets using non-stacked "B" supplies. If the trouble is not readily located, remember that in a stacked B+ set the source of trouble may lie in a stage other than the one suspected. "B" shorts can be readily traced; the greatest difficulty, perhaps, will be caused by incorrect current in some tube. Voltage checks will usually reveal the source of the trouble, but sometimes the fastest way to locate the defective section will be by actually measuring current.



Troubleshooting Auto Radio

Test Set-up for Fast Check of Car Radio Defects;

By JAMES A. McROBERTS

• Auto radios differ from home receivers primarily in the power supply employed. This article will present a simple hookup for rapid diagnosis of power supplies troubles in auto sets, and will outline a procedure for efficiently localizing such defects.

Block Diagram Analyzed. The block diagram shown in Fig. 1 divides the car radio into two sections: the signal stages, and the power supply section with which our article is primarily concerned. The signal portion is fed with a "hot" (un-grounded) heater feed, a B+ feed, and a common chassis return for both the "A" and "B" supplies. The power supply divides (electrically if not physically) at the off-on switch into a heater "hot" feed passing through a hash filter into the signal stages, and another line leading to the vibrator "B" power supply through another hash filter.

Auto Radio Test Equipment. Very simple equipment suffices for auto radio test work. The heart of the test set-up (see Fig. 2) is an ammeter

with a range of 0-10 amperes; many volt-ohm-milliammeters have a current range of app. 0-12 amps, and may be used in place of an ammeter.

Shunt the ammeter with a switch or jumper, except during the moments when readings are taken; a press-to-open switch will serve this purpose of ammeter protection. A fuse holder with a 10-amp fuse should be used in series with the meter; you will be able to use the set fuse in most cases, but put in an additional fuse as a safeguard.

The cold battery lead runs straight through to a terminal; for easy grounding to the chassis, connect a clip as shown in Fig. 2, also adding shield braid (the braid makes connection to the receiver easier in some cases). The "hot" lead may be terminated in another clip, and should have a fuseholder attached to it, permitting the radio fuseholder to be readily attached.

The power supply end of the rig should have battery clips on both the hot and cold sides; clips permit polarity reversal, as well as "tapping down" a cell on the battery. The voltmeter may be the shop vtvm; it is used to monitor the voltage at the set input. If a separate meter is purchased for permanent

installation, it should have a 0-15 v dc range. Use heavy wire throughout the Fig. 2 rig—no. 10 or larger.

Need for Variable Voltage. The power supply should furnish 6 or 12 volts at the set (allow for 0.3 and 0.6 volts drop in the rig, respectively) as the normal input voltages. Provision should be made for lowering or raising these voltages by 2 volts. The lower voltage is needed to simulate a "parked-car battery condition." This term refers to a partly-discharged battery which is suddenly called on to deliver current; the terminal voltage of such a battery will be appreciably below normal. The higher voltage is needed to simulate the conditions present when the car is running, and the charging of the battery by the generator brings the battery voltage to an above-normal level.

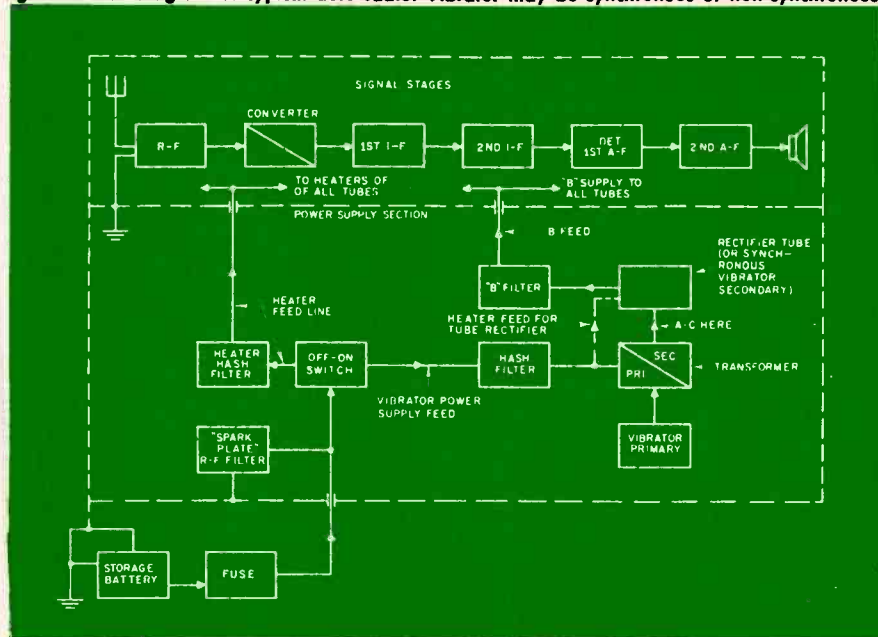
If the technician plans to use an auto radio battery eliminator, he should obtain one that provides a variable output.

The author considers it preferable to use two storage batteries in series, in conjunction with a battery charger delivering about 5 amps, for the test rig. The series-connected batteries will provide a total of 12 v. Connecting the charger across either battery, and turning it on, will raise the output voltage across the batteries to 14 v (provided the battery in question is fully charged to begin with, as it should be). If the output is taken off across one battery alone—the battery across which the charger is connected—8 v will be available. (A battery charger delivers an output of 7.8 to 8.2 v.)

To obtain 4 v, use a single battery and "tap down" one cell—i.e., move the "hot" terminal clip down one cell, to provide the lower voltage needed. To get 10 v, "tap down" one cell on two series-connected batteries.

Caution: Do not ground the receiver being serviced to a radiator or similar earthed point, with the charger connected to the power line; chargers often employ an autotransformer, which means their ground points may be "hot," just like in an ac-dc chassis, depending on which

Fig. 1—Block diagram of typical auto radio. Vibrator may be synchronous or non-synchronous.



Power Supplies

Logical Troubleshooting Procedure

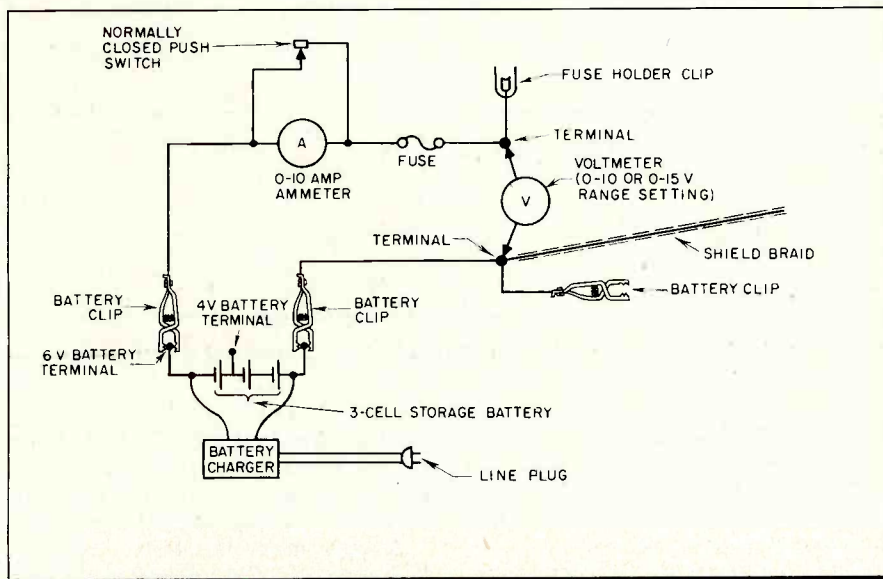


Fig. 2—Simple test set-up for checking auto radio power supplies. A battery eliminator may be used in place of the combination of storage battery with a battery charger, as illustrated here.

way the line plug is connected to the outlet.

Connecting the receiver ground (which attaches to charger ground) to an earthed point may cause a cloud of smoke to billow around the technician, as he goes off to hunt for the blown shop fuse.

Never forget to make a check of receiver operation on "low" and "high" battery voltage—it is a very important factor in minimizing call-backs.

Troubleshooting the Vibrator Power Supply. For a preliminary trouble localization, connect the auto radio to the test rig, and turn the set on; also turn the battery eliminator on, if the latter is to be used. If the fuse blows, a heavy ammeter reading may be assumed, *although no current measurement is taken.* If the fuse does *not* blow, open the shunting switch and read the ammeter. According to the reading obtained, the trouble will fall into one of the following categories:

1—Current excessive, fuse does not blow. 2—Current normal. 3—Current below normal. 4—Current zero.

By coupling these readings with the observation of whether or not the vibrator buzzes mechanically

(you can often feel the buzz more easily than you can hear it) vital service information is obtained that permits a logical service procedure to be applied.

Before abnormal ammeter readings are analyzed, some consideration of what is normal is in order. The normal reading (this figure is often present in the manufacturer's service data) represents the primary power consumed. Breaking it down further: the normal current is the sum of the heater currents, plus the current drawn by the vibrator power supply, plus any other battery drain, such as an electromagnetic speaker in older sets, or panel bulbs, or automatic tuning devices at rest.

The normal current reading is ordinarily about 5.5 amperes; check the schematic if one is available, to get the accurate figure.

If there is any uncertainty regarding what the normal drain should be, it can be estimated as follows: Obtain the current drain of the tube filaments from a tube manual. The vibrator power supply will consume about 2.5 amps in most cases. Add the tube filament currents to 2.5 amps, to get a working estimate of the total drain that should be present with the normal battery voltage of 6 volts available.

If the fuse blows, *do not try to take the ammeter reading.* Instead, temporarily install a 5-amp fuse, and withdraw the vibrator. Test again. If the fuse blows now, break the "hot" primary power circuit into three parts by disconnecting the heater and power supply feeds at the off-on switch (see Fig. 3). Replace the fuse and test again.

If the fuse blows now, trouble prior to the disconnection point is, of course, indicated. If the fuse holds up, connect the heater line back in the circuit with a jumper (a screw-driver blade is usually good enough for this purpose). If the fuse blows now, track down the short in the heater line by the method of successive disconnection and test; start by pulling all the tubes.

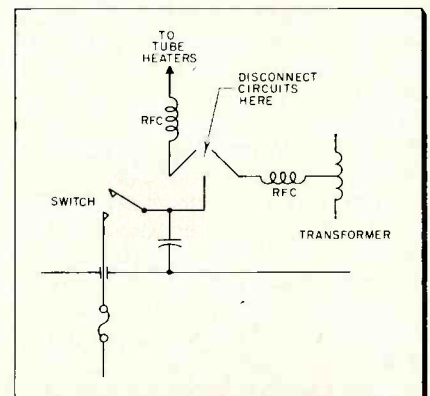
If the fuse holds with the heater line connected, connect the vibrator power supply feed line back into the circuit via a jumper; if the fuse blows now, resistance tests of the vibrator supply are in order.

If you haven't done so yet, test the B-plus for a short to chassis. If no short is evident, disconnect the buffer condensers and test for short-circuits; disconnecting one lead only will be enough (the buffer condensers are labeled C_p and C_s in Fig. 4A, B).

If no short is evident, reinsert the vibrator and pull the rectifier tube, if a non-synchronous vibrator is present (Fig. 4A); temporarily disconnect B-plus from the transformer secondary center-tap if a synchronous type is used (Fig. 4B). Test again. If the fuse blows now, a defective vibrator or transformer is indicated. Substitution will serve as a check for the vibrator; a resistance test will determine if the transformer is n.g.

If the fuse holds up, touch the free pigtail of each buffer condenser separately to the point of discon-

Fig. 3—Part of auto-radio power supply circuit, indicating suggested break point when testing for shorts in the supply.



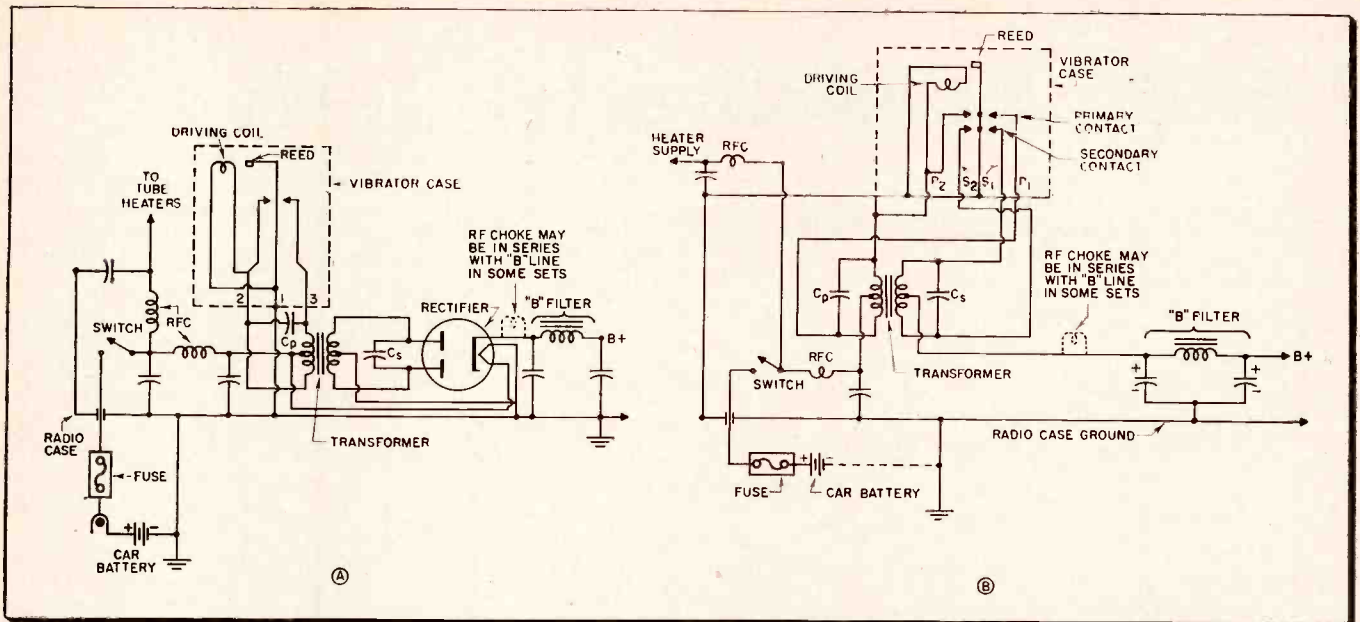


Fig. 4A—Typical non-synchronous vibrator circuit. B—Representative synchronous vibrator and circuit associated with it.

nection—a blown fuse means the buffer condenser is bad, even if a previous ohmmeter reading gave the buffer a clean bill of health.

Let's consider the case where an abnormally large current is indicated on the ammeter. The fuse does not blow, but the ammeter reads more than 20% above normal. The same operations previously indicated should be performed, keeping in mind that we are now searching for the cause of excessive current. Bad electrolytic and buffer condensers are the most frequent causes of such trouble. In some instances, the power transformer may have a shorted turn or two which will not be revealed by an ohmmeter check; test the unit by substitution, after other possibilities have been eliminated.

What about the case where the current reading is nearly normal, but the set does not work? When a synchronous vibrator is present, the condition is often due to wrong battery polarity; simply reverse the battery clips at the battery or battery eliminator, to test for and eliminate this trouble. Other possible sources of such a condition will be found in the signal stages of the set; these cases fall outside the scope of this article.

If the ammeter reads low, feel or listen for vibrator buzz. If no buzz is present, try a new vibrator.

If the vibrator does buzz, check the B-plus. If low, a bad rectifier tube may be the cause; substitute a tube known to be good, as a check. A vibrator with bad points may be responsible for reduced "B" voltage; try a new vibrator, to test for this possibility. Loss of buffer capacitance

can also result in low B-plus with low ammeter reading; check by buffer replacement, using a unit of both the proper capacitance AND the correct voltage rating.

High B-plus with low ammeter reading may indicate the presence in the set of old, weak tubes which do not draw enough "B" current. One or more tubes may be burnt out—you check for this possibility by inspecting glass tubes and feeling metal ones, just as in home radio servicing.

When the ammeter reads zero, the trouble must lie at some point prior to the branching off of the heater and the power supply feeders. Check for continuity from the external fuse holder to this point, to further localize trouble of this character.

Final Test

After you have repaired the set, test it on low voltage (4 volts for 6-volt systems, 10 volts for 12-volt supplies). The principal object is to see if the vibrator will start. Failure to start because of "sticking" may ruin the vibrator, and sometimes the power transformer as well. To make this test, adjust the battery eliminator for a voltage reading of 4 v with the set on; turn the set off and then on again, to see if the vibrator starts.

In making the test with a battery power supply (instead of a battery eliminator), move one clip to the opposite end of the cell to which it was attached, leaving two cells (providing 4 volts) in the circuit; then simply turn on the set.

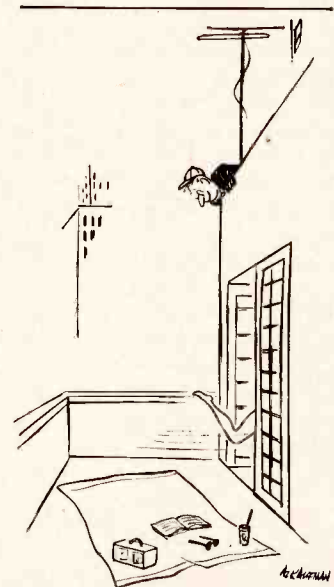
Test for high voltage operation (2 volts above normal) by suitably ad-

justing the battery eliminator, or by turning on the charger. An increase of more than a third in the ammeter reading indicates trouble.

Always make the tests described before re-installing the set in the car.

New Hi-Fi Wrinkle

Hi-Fi outside the home is the newest wrinkle in this rapidly growing field. A motel on the outskirts of Marion, Illinois (Motel Marion) uses three FM tuners and a Hi-Fi record player to provide four Hi-Fi channels. Each guest room has its own speaker, volume control and selector switch to allow choice of any available channel. The dining room and other public areas in the court type establishment also have speaker outlets. The system is used for paging as well.



UHF Converter Tests

Simple Ways of Checking for Oscillator Defects

By FERDINAND MATTIOLI

• While UHF service equipment is still costly and not yet widely available, certain tests can be carried out with conventional service equipment and a little ingenuity. If a standard UHF converter, known to be in working order, is available in the shop, for example, it is possible to check the operation of another converter whose oscillator is suspected of being defective.

As shown in Fig. 1, a few turns of wire are wound around the UHF oscillator of the converter under test (converter A), and connected to the antenna input of shop converter B. A length of transmission line may be used for this purpose. The output from converter B may then be connected to a field strength meter. If one is not available, the alternate arrangement shown in dotted lines may be used; the output from B is coupled by another length of transmission line to the antenna input of a standard VHF receiver. The agc line of the latter is then monitored with a vtvm.

This is how the set-up works: UHF channels 14 to 83 cover the frequency range between 470 and 890 mc. Most UHF tuners convert these signals to a frequency in the bandwidth of Channel 5 or 6. A typical heterodyned output of a UHF front end is 78 mc. Since this output is usually obtained by beating the

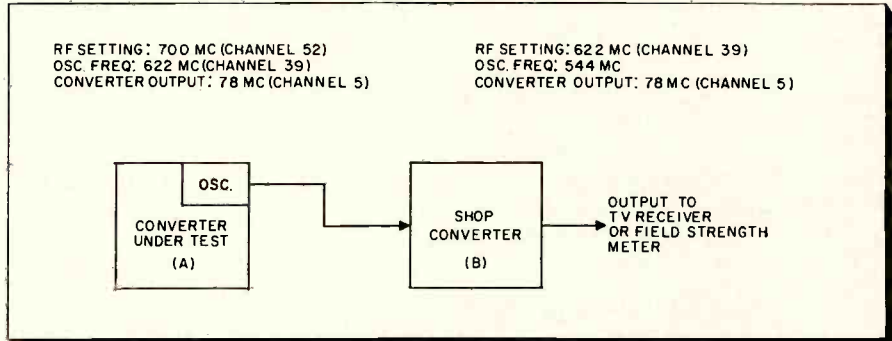


Fig. 2—Oscillator, r-f and intermediate-frequency settings of the converters shown in Fig. 1.

incoming UHF signal against an oscillator working below the signal frequency, a typical range for a converter oscillator would be 392 to 812 mc. Note that most of this range lies in the UHF band, and may therefore be tuned to by another UHF converter. Accordingly, converter B's r-f input is tuned to some frequency lower than the tuned setting of converter A, to pick up the oscillator signal of converter A.

The setting for converter B is determined as follows: Assume that the front end of converter A is tuned to 700 mc—about the center of the bandwidth for Channel 52 (refer to Fig. 2). The oscillator of converter A operates at a lower frequency (how much lower depends on the frequency adjustment of the tuner output circuit in converter A). If the output circuit is tuned to 78

mc, the (converter A) oscillator frequency is 700 mc-78 mc, or 622 mc. Shop converter B will have to be tuned to this frequency (in the bandwidth of Channel 39) to accept the converter A oscillator signal.

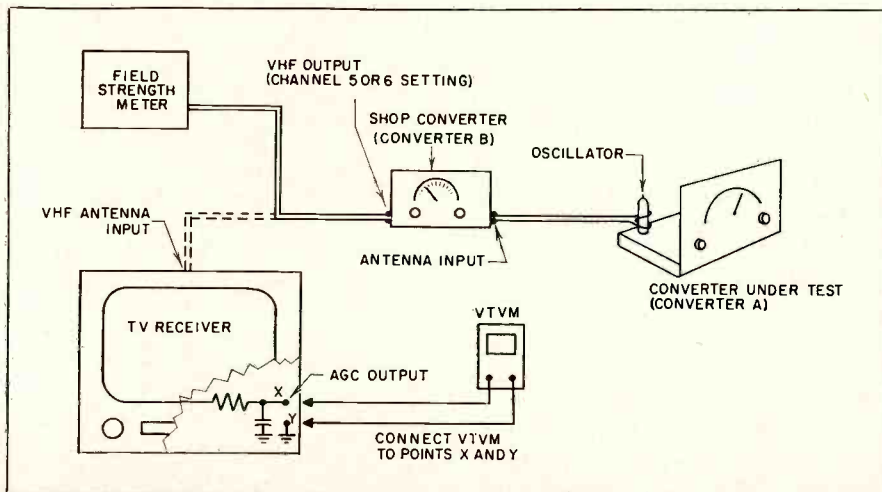
In other respects, B functions like any UHF converter accepting a signal within its tuning range. For simplicity's sake, we assume it is designed to yield a 78 mc output (Channel 5 setting). This output frequency does not change, whether the frequency to which the converter input circuits is set to 622 mc or some other frequency, since the oscillator of converter B tracks to produce the desired 78 mc output in any case.

The converted output of B is fed to a field strength meter and read off directly, or else it is connected to the antenna input of a VHF receiver. Under the latter arrangement, the VHF receiver is tuned to Channel 5 or 6 to match the output frequency of converter B. In the case we have been considering, Channel 5 is tuned to.

Monitoring the output of the receiver's agc line will give a relative indication of the operation of converter A's oscillator. If the oscillator is not functioning, there will be no output of converter B at the correct frequency, hence no input to the receiver on the channel to which the latter is tuned. Since the receiver's agc system will not be activated, the measured agc voltage will be very low or zero.

It is not necessary to calculate the setting for shop converter B in
(Continued on page 75)

Fig. 1—Set-up for checking local oscillator of UHF converter. Second converter is needed.



Making the Most of Your Scope

Part I of a Series on How to Get Maximum Benefits from the Oscilloscope

By M. G. GOLDBERG

• There is probably no retail service business that requires as much and as varied equipment as a TV service shop. Given the necessary ready cash, the average shop would be crowded with benches of test equipment, consisting of a tube-checker, oscilloscope, AM, FM and TV signal generators (sweep and marker) vacuum-tube volt-ohm-meters and many other instruments. Due to the high initial outlay required, however, only the larger shops can boast of more than the minimum number of such instruments. The cost of replacing obsolete units with more modern pieces of equipment as the industry moves from radio to TV, VHF to UHF, and soon to color TV also keeps many

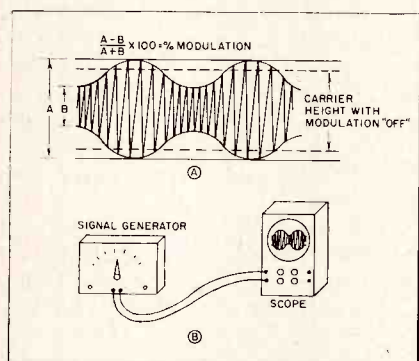


Fig. 1A—Calculating percentage of modulation. Approximately 33% is present in the waveform shown above. B—Signal generator and scope connections for modulation check.

technicians from owning an adequate amount of test equipment.

This series of articles is being written with these facts in mind. The author has no intention of discouraging the purchase of needed equipment, but wishes instead to point out ways and means of utilizing present units at their maximum potentialities, so that when a new piece of test equipment is purchased it does not duplicate, except in minor degree, other instruments already in the shop. By avoiding such duplication as far as possible,

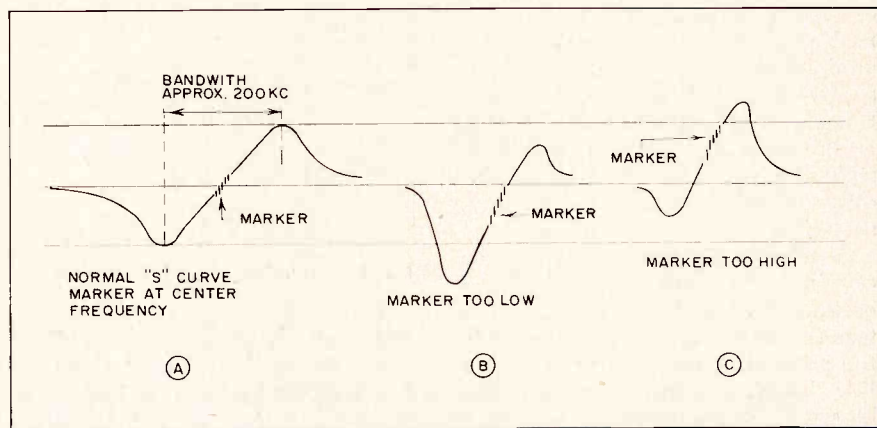


Fig. 2—If "S" curve is symmetrical and marker is at exact center, increasing output from generator will not change shape of curve appreciably. If the marker is not at exact center, increasing generator output will cause curve to assume appearance shown in (B) or (C).

the same cash outlay will permit the purchase of higher quality equipment.

The first few articles in this series will deal with the oscilloscope, and how to get the most out of it.

Testing Modulation Percentage. Most manufacturers of radio and TV receivers suggest the use of a 400-cycle, 30% modulated AM signal for various alignment adjustments. If you have any doubt as to the percentage of modulation available from your own signal generator, you can check it by this simple method:

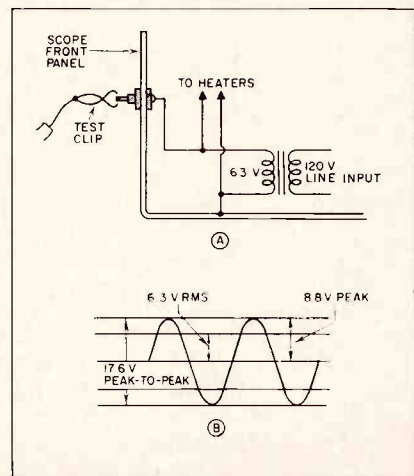
Connect the output leads of the generator to the vertical input leads of the scope, and set the scope range switch to its lowest frequency position. Set the signal generator dial between 100 and 150 kc, with the modulation switch ON. Next, set the scope gain control to produce a trace 20 squares high on your oscilloscope screen. The percentage of modulation will be $\frac{A-B}{A+B} \times 100$

now (see Fig. 1A) where A is the maximum and B the minimum amplitude of the modulation envelope. For instance, if A is 20 squares high and B is only 12 squares in height, the modulation percentage will be $\frac{20-12}{20+12} \times 100$, which is equal to

$$\frac{8}{32} \times 100, \text{ or } 25\%.$$

It is not absolutely imperative that the percentage be exactly 30% as called for; if it is too low, however, the audio output may be insufficient for some test purposes; if too high, some circuits may overload, due to the increased peak-to-peak signal supplied. For instance, a 100% modulated signal will double the peak voltage and may lead to serious overloading, with consequent in-

Fig. 3—Heater winding of scope may be attached to calibration post on front panel. B—Calibration voltages (rms, peak and peak-to-peak) available from heater winding.



correct adjustment of the circuits involved.

To take a specific example: The factory-recommended procedure for checking the adjustment of the agc control in '48 and '49 Philco TV receivers was to apply a 400-cycle 100%-modulated AM signal to the antenna input, and adjust the control to provide 2 v peak-to-peak output at the video detector, as measured by an oscilloscope. However, because few signal generators are built to deliver this percentage of modulation, it was suggested in the alignment notes that a 30% modulated signal be used instead, and the control adjusted for .3 x 2 volts, or .6 volts peak-to-peak. If the serviceman hurriedly read the instructions and adjusted the output for 2 v using 30% modulation, loss of sync and serious picture distortion would occur when a station was tuned in, because any station

modulation of the picture carrier in excess of 30% would overload the video amplifier, possibly causing loss of sync information due to clipping. It would be essential, in this case, for the technician to know to near exactness, the value of the percentage of modulation delivered by his AM generator.

For most purposes a minimum of 25% and a maximum of 35 to 40% modulation will be satisfactory.

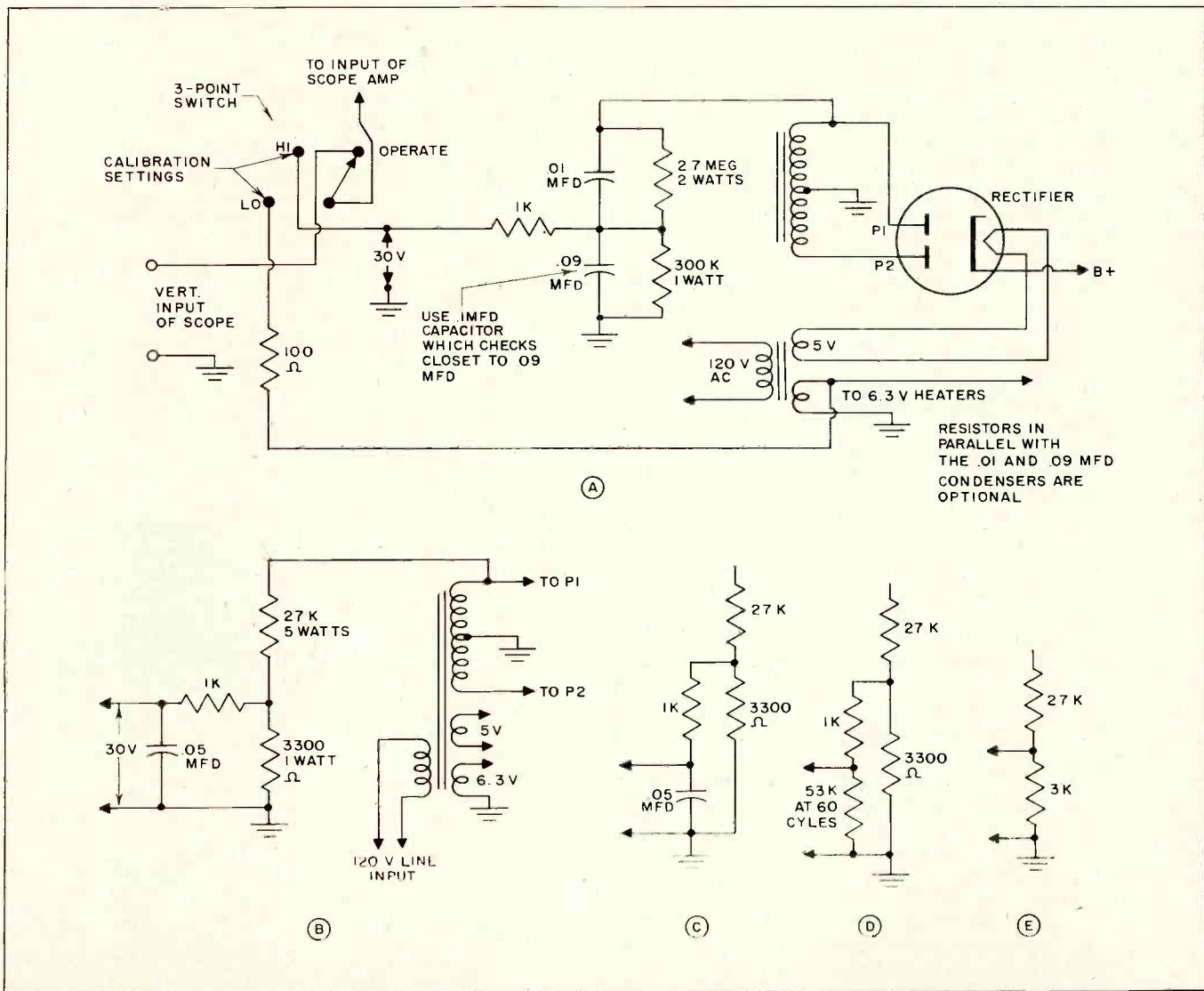
When checking the signal generator for modulation percentage, make certain that the trace on the screen is symmetrical, as in Fig. 1. If the positive half cycles are flattened on top, *reduce* the signal generator output and *increase* the vertical gain setting on the scope, until the proper trace height is obtained.

Scope "S" Curve Test. When using the scope in conjunction with a center-frequency marker pip to

check the crossover point of an "S" curve (in FM and TV sound alignment), try running the output of the marker generator up and down about 50%. If this change in setting affects both sides of the "S" curve equally, the marker is correctly placed, and the curve has maximum symmetry (see Fig. 2). If, however, one peak *diminishes* while the other peak *increases* in height when this procedure is used, the alignment is incorrect, and should be rechecked. This method is much simpler and just as effective as the one ordinarily recommended, which involves moving the signal (or marker) generator dial first a (sometimes unspecified) number of kc to one side of center frequency, and then an equal distance from center to the other side, to make certain that the crossover point is correctly positioned, and proper "S" curve symmetry has been attained during alignment.

Fig. 4A—Circuit change to make 2 calibration voltages available. The 10:1 capacitive divider makes available 30v rms, 42v peak, and 84v peak-to-peak. To double calibration voltages,

change the .09 condenser to .04 mfd, and the 300k resistor to 680k. B—Calibration setup using 10:1 resistive voltage divider. The divider in B is progressively simplified in C, D, and E.



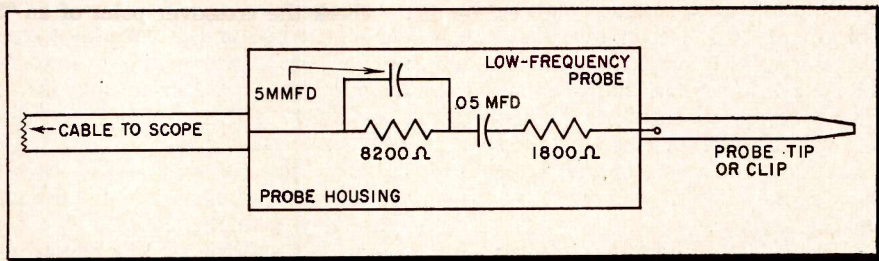


Fig. 5—Probe schematic, drawn on strip of paper, may be Scotch-taped to probe shell.

Preventing Screen Burns. TV servicemen who would be quick to warn their customers about turning off their receivers when the vertical circuit fails, often leave their scopes running for extended periods of time between individual tests, with the brightness up and with no signal applied to the vertical input. The scope may be left on in this way while the technician looks up something in a service manual, or waits on a customer, or answers the phone. Under these conditions, the scope screen shows only a narrow horizontal line. The intensity of the vertically-undeflected trace will eventually burn the phosphor coating, leaving an unsightly brown line across the tube face.

If the scope is equipped with a *calibration switch*, it is best to move it to this position when the instrument is to be left on, but not used immediately. This applies a 60-cycle voltage to the input terminals and causes the beam to be displaced correspondingly, thus minimizing the chances of screen burning taking place. Of course, the brightness control can be turned down each time to accomplish the same result, but it is a bit of a nuisance to do this, since the control must be reset to the correct brightness position each time the scope is to be used. The calibration switch leaves the brightness as it was, but distributes the light over the area of the 60 cycle trace.

If no calibration switch is furnished with the scope, as is the case with most older models, the simplest solution is to bring the "hot" 6.3 heater lead from the scope transformer out to a metal terminal or headless binding post, mounted on the front panel and insulated therefrom (see Fig. 3). The scope "hot" lead can be attached to this terminal when the instrument is temporarily not in use. The voltage made available at the terminal can also be used as a calibrating voltage for low input signals. The rms or effective voltage (see Fig. 3B) will be 6.3 v, the peak voltage 8.8 v, and the peak-to-peak voltage 17.6 v (roughly 18 v).

Providing Higher Calibrating Voltages. If calibrating voltages higher than 18 v peak-to-peak are desired, two terminals can be used instead of one, with the post mentioned in the previous paragraph marked "lo," and the second one "hi," or a three-point switch may be installed, as shown in Fig. 4A. A number of methods can be resorted to for securing the higher calibrating voltage. Figs. 4A, B illustrate some of these methods.

Voltage is tapped off one side of the secondary winding (app. 300 volts rms), and a divider is used to drop it down to the desired amount. Using the values shown in Fig. 4, the technician can adapt this system to his own scope. While 30 volts is provided for at the "high" tap shown, any desired value of voltage can be made available by changing the capacitance (in Fig. 4A) or the resistance (Fig. 4B) between the tap and ground. Do NOT change the value *above* the tap; lowering this reactance or resistance value too much will place an excessive load on the transformer winding.

The 1k series resistor in each case is used to prevent transformer damage in case of a short from the tap point to ground.

The .05 mfd capacitor in Fig 4B has no effect on calibration; it is used to improve the waveform seen on the scope screen. This waveform may be somewhat flattened, due to conduction through only one side of the rectifier tube, on the positive half of the line voltage cycle.

The resistors in parallel with the .01 and .09 mfd condensers (Fig. 4A) minimize any deviations in the capacitors from their rated values. The 100-ohm resistor in the LO input circuit protects the 6.3 v transformer winding in case of an external short (say by the 6.3 v lead touching the ground lead).

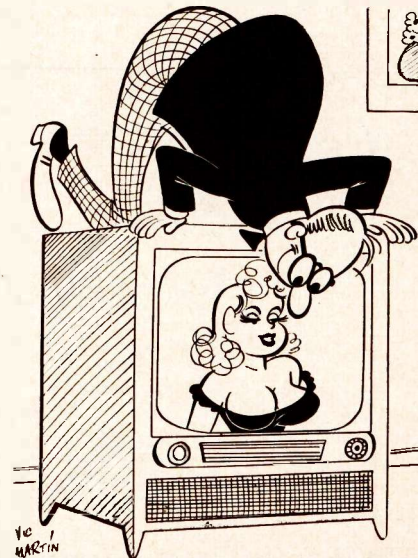
Identifying Scope Probes. Due to the fact that several different types of probes are often on hand around the service shop, such as capacitor attenuating probes, signal tracing probes, etc., the busy technician

should have some easy way of recognizing each one when needed, without having to look up the manufacturer's notes to find out what's in the probe housing. The writer gets around the difficulty by sketching the circuit of the components in the probe housing on a narrow strip of white paper (component values may be typed), then firmly Scotch-taping the strip to the probe, as indicated in Fig. 5. This method reveals at a glance what's in the probe, and what the unit is used for. If the probe is a voltage-doubler unit, it can be so marked, with the circuit always in evidence. For a capacitance probe, the attenuating ratio can also be shown (i.e., 10:1 or 100:1 etc.). This labeling technique can be used on probes for other test equipment as well.

The probe shown in Fig. 5, incidentally, is one the writer uses for general low-frequency service work, such as for audio amplifiers, low-level deflection circuits, hum tracing and sound alignment.

New Transistor Outlook

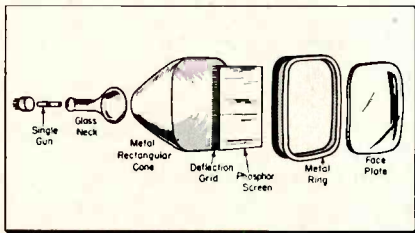
Recent laboratory developments reported by Sylvania and Raytheon foreshadow earlier widespread use of transistors than has been expected until now. Silicon, which is being used in new types, is said to permit assembly of transistors that are much more stable than current types. In addition, the newly developed transistors are said to withstand heat well. This may expand their use to circuits where considerable voltages are applied, where higher amounts of power are dissipated, or where substantial heat occurs for some other reason.



COLOR SHORTS

THE COLOR TV BOTTLENECK will not be broken, opines GE's Dr. W. R. G. Baker, until a 21-in. color set is available at a "reasonable price." "The nub of the problem," says Dr. Baker, "is the color tube, to which no one, as of this date, has a satisfactory and conclusive answer." Although confident that the problem will be resolved, Dr. Baker believes color "may take a little longer than the optimists in the industry predicted." He does not foresee a big color year until 1956.

SERVICE CONTRACT CHARGES set up by GE for its color set have been tentatively listed as follows: For installation and adjustment of the set in the home, unlimited service calls for 90 days, and one-year warranty on picture tube and parts—about \$100; the same terms plus unlimited service calls for a full year—about \$150.



Exploded view showing components before assembly in Westinghouse rectangular 1-gun color crt. (See first item in last column.)

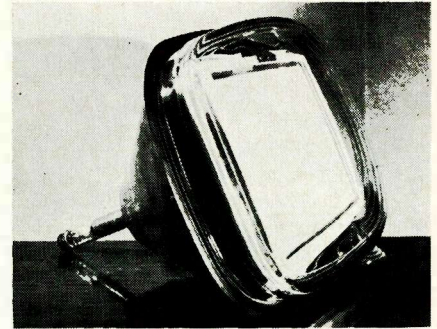
19-IN. 3-GUN CRT RCA engineers have developed is not simply an enlarged version of the 15-incher now in production. Changes in the receiver circuit, as well as in the tube itself, are involved. Overall length is the same for both tubes—the result of increasing the deflection angle in the larger tube from 45 to 59 degrees. Required 2nd-anode voltage is stepped from 20 to 27 kv. Magnetic instead of electrostatic fields are used to obtain convergence. The convergence voltage and the dynamic focusing arrangement are no longer used. Design of the electron gun assembly has been changed. Diameters of apertures in the tube's mask grow progressively smaller away from the mask's center. This reduces color fringing along the edges of the picture.

COLOR-BLIND SERVICE TECHNICIANS CAN RELAX, if the findings of Carl Finzer, instructor in Motorola's color TV school, are correct. The reason (according to Finzer): getting good color depends on adjusting a color set to produce a proper b & w picture—which does not require perfect color vision. "If a man can adjust a color set to receive a clear black and white picture, he can be sure of getting a good color picture . . . We have yet to have a serviceman attend our school who couldn't adjust a good black and white picture on a color set."

AN OPEN-FACE COLOR CONSOLE FOR \$1000 has been announced by GE. The set, model 15CL100, uses a 3-gun tube with a 15-in. outer diameter. It features 35 tubes plus 6 rectifiers.

E. C. CAHILL OF RCA announced a color signal generator, to be used at the transmitter, which will facilitate installation and adjustment of color receivers in the home while b & w program material is being transmitted. The generator, to be used during station identification breaks, adds a vertical yellow-green stripe to the right-hand side of the station identification pattern. This provides a periodic color signal without interrupting regular b & w service. On a b & w receiver, the stripe is virtually imperceptible. The composite b & w video signal is fed into the generator. Output is the same signal—with the yellow-green signal burst added to the video information and a color-sync burst added to the horizontal sync pulse.

Black-and-white station identification pattern with vertical color stripe imposed (at right).



Model of single-gun color crt made by Thomas.

SINGLE-GUN COLOR CRT'S are coming into sharper focus with some new developments in design. Thomas Electronics, licensee of Chromatic Labs., is showing a 21-in. rectangular glass-shell tube using the Lawrence gun. Westinghouse, also using the Lawrence single gun, is showing a 24-in. rectangular metal-cone crt. Chromatic believes 24-in. color crt's will eventually sell for less than \$100. The grid structures (heart of this type of tube) are being made at a faster rate than originally promised. The figure of 25,000 to be made in 1954 is being revised upward. In experimental single-gun types now being worked on, the number of phosphor strips per inch on the screen is being increased. This factor is said to improve picture definition to the point where it compares favorably with definition on b & w crt's.

A FACTORY SCHOOL set up by Emerson to train its distributors' technicians in the handling of color receivers, is now being operated in New York. Duration of the course: 40 hours (5 days). Class size is being kept small to permit better attention to individual students.

TRAINING NOTES: "Final" examination in Admiral's current color school checks the students' ability to repair a defective color receiver . . . More than 27,000 service technicians are said to have attended the first 35 sessions in RCA's nationwide series of color clinics, being held in 65 cities . . . More than 80,000 copies of RCA's *Practical Color Television for the Service Industry* have been distributed.

New Ways to Keep

Valuable Advertising and Publicity May Be

Just what is *advertising*?

Quick answers to that question will list space in newspapers, ads in classified directories, billboards, spots on radio or TV, and direct-mail as the most obvious.

However, there are numerous other forms of advertising which are often overlooked, in spite of the fact that many of them are prime business-pullers.

Such other forms of advertising include *lettering on trucks, signs and "props" on buildings, show-window displays, stickers on repaired sets, "what-we-fix" signs in show-windows, car and bus cards, "lettered" uniforms for technicians, and articles in newspapers, to mention a few.*

Service trucks should be right up in the front rank, in advertising one's servicing and installation facilities.

Let's consider some cases:

Mrs. Jones lives in the suburbs, in a newly-purchased home.

On a certain afternoon she turns on the TV set to see a favorite program, and gets no picture, or no sound—maybe both out of kilter. A few minutes later Mrs. Jones happens to look out of her front window, and sees a shiny truck standing in front of the house across the street. Nope, she couldn't miss that lettering. It stands out like a house on fire: "Television and Radio Servicing," it says. And there is the firm's name, address and telephone number.

Now the typical Mrs. Jones would do one of a certain number of things under the circumstances.

1. She'd write down the info she saw on the truck and take up the matter with her husband when he came home, if she had any qualms about assuming responsibility for asking the technician across the street to look at the set.

2. Mrs. Jones would pick up the phone, call the neighbor and inquire about the service company. If the neighbor recommended the organization, Mrs. Jones would ask the servicer to drop over and look at her set.

3. She might not pay any attention to the truck, but this isn't likely if

Mrs. Jones is a stranger in the locality, as we assumed at the outset. (Mrs. Jones can also look up a service outfit in the classified directory, as pointed out in an article, "Is YOUR Number in the Book?" in Nov. '53 *TECHNICIAN*. What we are trying to bring out here is that the attractively-lettered truck is simply ANOTHER way to advertise.)

Another case—and a true one.

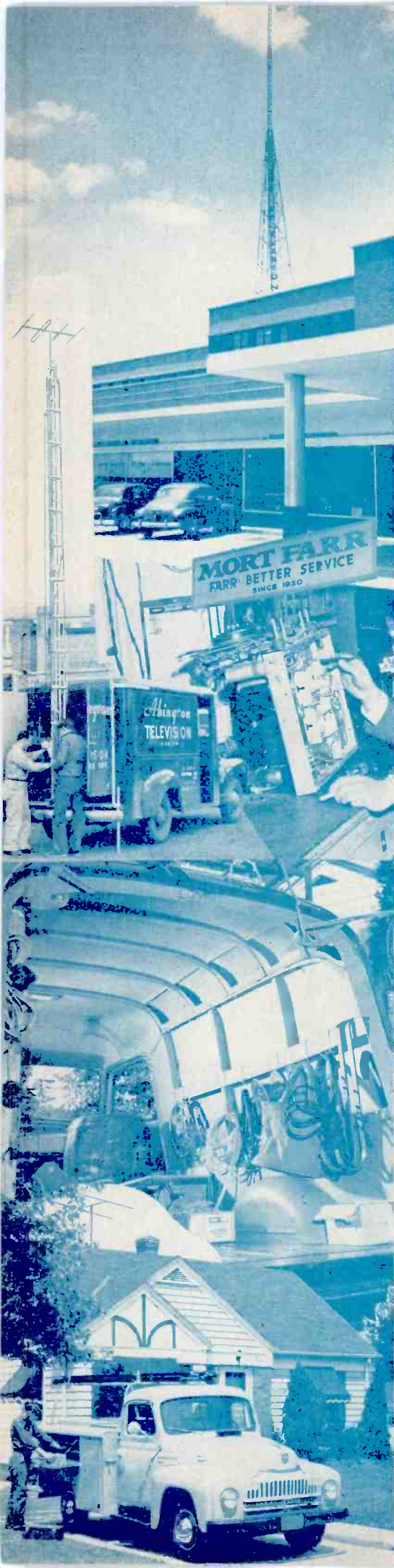
A technician we know was among a scant handful of guys who went after business in a big apartment development housing more than 1600 families. By way of introducing himself to the newcomers, this fellow had boys shove cards under all apartment doors, offering his services. He advertised in the local newspapers, the classified directory and got plenty of word-of-mouth advertising, too. The technician soon built up a large following, and *now more than 75 percent of his total volume comes from this one development alone!*

Trucks as Salesmen

The technician-dealer's three trucks played an important part in getting this big slice of business. The trucks were more than silent salesmen—they hollered out loud. Technicians employed by the firm frequently found people *waiting beside the truck* to ask questions about service, especially on Saturdays. Now and then some residents of the development would leave "please call" notes under the windshield wiper blade.

Trucks *can* be used to bring in business, but only if they are properly lettered, permitting the viewer to get the firm's name, address and phone number *quickly*. And a good paint job on the body pays, too. Successful service organizations always keep their rolling stock in apple-pie order—and that goes for the interior. Plenty of customers like to see what's inside the truck, and the more impressive the equipment, the more impressed the viewer is likely to be.

Getting into the subject of using store signs and other "props" to make one's location a landmark,



Your Firm in the Public Eye

Obtained Very Economically by the Wide-Awake Technician-Dealer

there's a wealth of ideas to choose from. Most obvious, of course, is the high antenna, lighted at night and carrying the firm's name. Then, too, there are identifying store signs, available in wide variety at reasonable prices from the manufacturers. Such signs, often illuminated, are "naturals" to advertise the business and to make the store's name stick in the passerby's mind.

"We-fix" signs are effective in show-windows, in outside use and in the store itself. Such signs list the products the firm repairs, and act as potent "suggesters" and reminders.

When the writer was a dealer in the radio field, one of his best service customers was a resident whose business was in a nearby city. One day this man dropped in the store to report one of the sets in his home out of order. He saw one of the firm's technicians leaving with some PA equipment. "Why, I didn't realize you people did public address work," he remarked. "Too bad I didn't know sooner—I just had a system set up in my small factory, and I'd have been glad to have given you a chance to bid." Imagine that! And the writer's firm had been servicing this man's home sets for seven years.

Tell Your Whole Story

So tell 'em what you service, via signs, even if such a method seems elementary. Maybe one of your customers is getting portable batteries at another store where he bought the carry-about set. Maybe he doesn't know that you sell and install batteries. It could be. Let your sign state that you service TV, RADIO, RECORDERS, PHONOS, SOUND EQUIPMENT, PORTABLES, CLOCK-RADIOS AND ANY AND ALL ELECTRONIC EQUIPMENT.

So far as show-windows are concerned, too few organizations specializing in service do a good job in making use of this expensive and much-to-be-desired space. They look on the gaping floor in the window as a place to throw in just about anything; furthermore, any

time spent on dressing the window is given grudgingly. In other words, window-dressing is an odious task to most, and the results certainly show it.

Only in cases where the store owner realizes the importance of eye-catching displays, and becomes genuinely interested in setting up novel displays, will he be able to arrange traffic-stopping set-ups which bring in business and get widespread identification for the firm.

It's one thing to put a few batteries and tubes in a window, and to throw in a couple of manufacturer-supplied display cards for good measure. But it's something else again to spend a bit more time and considerable ingenuity in setting up something different. And the latter job isn't as difficult as it sounds. A great many ideas are at hand.

Let's list a few:

"Timely" themes. Tie these in with various holidays, sports events, and local activities.

Baseball season: You can use some "gear," such as a couple of mitts, a baseball, a catcher's mask and so forth. Sign would read: "Is your TV Set in Top Working Condition for the Big Games?" Same with football. Put some playing equipment in the window.

Very timely is the vacation idea. Build a "beach" scene using real sand, a mirror for "water," artificial trees, and so on, and work in a plug for your portable service—the sale of batteries. Or make a "mountain" scene from "putty" kneaded of wet paper towels. Use concealed electric fans to get motion of some sort, such

as trees blowing, or a "rippling" lake. Water dyed blue and placed in a pan can serve as a lake; the addition of toy sailboats will put still more life into the display.

"Technical" themes: Great variety of ideas here. Chassis with streamers to various parts in set, identifying such components via signs. "Record-your-voice" — or "see-your-voice" display, using an outside mike with a scope in the window. This will stop them dead in their tracks, as it did for years in front of a store in the heart of Jamaica, N. Y.

The "See-yourself-in-TV" theme: here the display is simply a TV cabinet with a mirror in place of the tube. "Take a look at the most important person in the world," is one way to word an accompanying sign. A few phrases about the fine service the firm offers are also apropos.

Other Window Displays

If you have a color TV set on hand, put it in the window, and you'll get slews of what the big-store folk call "readers."

There are other ideas galore, using motion, colored lights, etc., which may be drawn on. Record-changers in operation, display of tools used in servicing, or even a display of test meters. Ingenuity pays off heavily, and brings in service revenue.

In daring to be different with your show-window displays, be sure to be different in another way, too, from all too many other shops. And that is, *keep the windows washed*, and the displays sparkling and bright.

Though most technician-dealers
(Continued on page 72)

It Will Pay YOU to—

- ... Letter your trucks attractively—and keep 'em painted
- ... Use signs, high (lettered) antennas and other props to make your store a landmark
- ... Dare to be different in your show-window displays
- ... Make use of signs. "We-Fix" kind, and the bus and car variety
- ... Use stickers on the sets you've repaired
- ... Provide lettered uniforms for your technicians
- ... Write articles for local papers and speak before local groups

Chicago Parts Show

TV-Radio-Sound Components Will Be

A maximum number of exhibitors will make use of all available exhibit space at the annual Electronics Parts Show, scheduled for May 17-20 at the Conrad Hilton Hotel in Chicago. Advance registration of distributors for the Show has reached record proportions this year, according to Show President Harry A. Ehle, of the International Resistance Co., Philadelphia, Pa.

TV - radio - audio components, sound equipment and related units will be on display in the 397 booths that have been set up by 277 exhibitors. Radios, TV sets and home phono units will *not* be shown. Special interest is expected to center on Hi-Fi and Color-TV components.

Show time this year will run from 10 AM to 6 PM Monday through Thursday in the Exhibition Hall. The display rooms on the fifth and sixth floors of the Conrad Hilton will open at 10 AM; guard service will be withdrawn at 6 PM.

One of the major changes in this year's Show Program is the elimination of the seminars and educational sessions from the Show. These highly popular meetings, it was found, made heavy inroads on the already overcrowded schedules of visiting distributors. They were therefore re-scheduled, and will be held, under the auspices of NEDA, at various other cities, and at dates which do not coincide with Show time.

A new feature this year will be a Pan-American and Overseas Guest Headquarters, for the accommodation of foreign visitors. Hostesses who speak various languages will be present to greet the visitors at

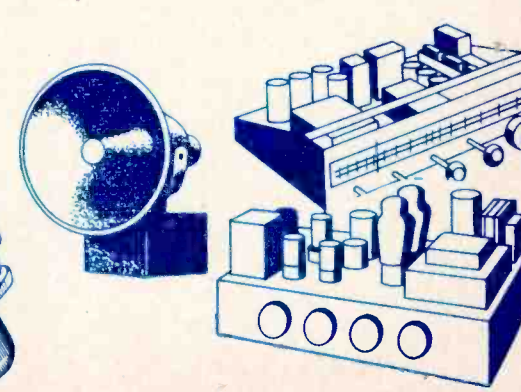
Guest Headquarters. The comprehensive program that has been set up will include a director's reception on Sunday, May 16, to honor the Show's Pan-American and Overseas guests.

Events get under way unofficially on the morning of the 16th, when the arrival of special trains from New York and other points is expected. The first event on the program is the Director's reception for overseas guests. In the evening of the same day, there will be a cocktail party and get-together, under the aegis of *Radio's Old Timers*.

The only "outside" activities that will take place during Show week will be pre-Show meetings of various electronics industry associations; there will, of course, also be the regular meetings of the directors and general members of the sponsoring group.

List of Exhibitors

ACRO PRODS., Room 667
 ADVANCE ELECTRIC & RELAY CO., Booth 883
 AEROLITE ELECTRONICS CORP., Room 634A
 AEROVOX CORPORATION, Booth 304
 ALL CHANNEL ANTENNA, Booth 3
 ALLIANCE MANUFACTURING CO., Booth 321
 ALPHA METALS CO., Booth 887
 ALPHA WIRE CORP., Booth 416
 ALPRODDO, INC., Booth 315
 ALTEC LANSING CORP., Booth 204, Room 607A
 AMERICAN MICROPHONE CO., Booth 671
 AMERICAN PHENOLIC CO., Booth 207, Rooms 560A, 561A
 AMERICAN RADIO HARDWARE CO., Booth 223
 AMERICAN SCREEN PRODS., Room 643
 AMERICAN TELEVISION & RADIO, Booth 415
 AMPERITE CO., INC., Booth 214
 ANCHOR RADIO CO., Booth 220
 ARGOS PRODUCTS CO., INC., Room 530A
 ASTATIC CORP., Booth 125, Room 546A-548A
 ASTRON CORP., Booth 888
 ATLANTIC WIRE & CABLE CO., Booth 86
 ATLAS SOUND CORP., Booth 225
 AUDIO DEVICES, INC., Booth 421
 BAKER MFG. CO., Booth 115
 BARKER & WILLIAMSON, INC., Booth 591, Room 655A
 BAUMKER MFG. CO., Booth 8
 BELDEN MFG. Co., Booth 874
 BELL SOUND SYSTEMS, Booth 779, Rooms 637A, 638A
 BERLANT ASSOC., Room 609
 BLONDER TONGUE LABS., Booth 783
 DAVID BOGEN CO., INC., Rooms 500, 501
 BRACH MFG. CO., Room 629A
 BRITISH INDUSTRIES CORP., Booth 408, Rooms 507A-09A
 BROOKS ELECTRONICS DIV., Booth 789, Room 662A



-Bigger Than Ever!

Displayed in 397 Booths by 277 Exhibitors

BUD RADIO, INC., Room 556A
BURGESS BATTERY CO., Booth 318
BUSSMANN MFG. CO., Booth 216
CANNON ELECTRIC CO., Booth 885
ALLEN D. CARDWELL MFG. CO., Booth 872
CARTER MOTOR COMPANY, Booth 777
C-B-C ELECTRONICS, Room 649
CBS-HYTRON, Booth 218
CENTRALAB DIVISION, Booth 790
CHANNEL MASTER CORP., Room 521
CHICAGO STANDARD TRANS., Booth 789, Rm 556, 557
CLAROSTAT MFG CO., Booth 586
CLEAR BEAM TV ANTENNA, Booth 674
CLEVELAND ELECTRONICS, Room 668
COLLINS RADIO CO., Room 536
COLUMBIA WIRE & SUPPLY CO., Booth 404
CONDENSER PRODS., Room 604
CONRAC, INC., Room 622
CONTINENTAL CARBON, INC., Booth 6
CONSOLIDATED WIRE & ASSOC. COS., Booth 581
COPPERWELD STEEL PRODS., Booth 121
CORNISH WIRE CO., Booth 683
CRESCENT INDUSTRIES, Booth 309
CRESTWOOD RECORDER DIV., Booth 9, Rm 641A, 642A
CROWN CONTROLS CO., Room 604A
DAVIS ELECTRONICS CO., Booth 884
DELCO RADIO DIVISION, Booth 201, Room 625
DRAKE ELECTRIC WORKS, Booth 222
DUKANE CORP., Rooms 515A, 517A
ALLEN B. DUMONT LABS., INC., Booth 574
DUOTONE CO., INC., Rooms 610A, 611A
EASY-UP TOWER, Room 628A
HUGH H. EBY CO. (Eby Sales Co.), Booth 881
EICOR, INC., Rooms 700, 701
ELCO CORP., Booth 788
ELDICO OF NEW YORK, INC., Rooms 613A, 614A
ELECTRONIC INSTRUMENT CO., Booth 202
ELECTRONIC MEASUREMENTS CORP., Booth 112,
ELECTRONIC PUBLISHING CO., Room 620
ELECTRO PRODUCTS LABS., Booth 418
ELECTRO-VOICE, INC., Booth 104, Rooms 550A, 551A
ELECTROVOX CO., Booth 208
EQUIPTO DIVISION, Booth 672
ERIE RESISTOR CORP., Booth 314, Room 616
FAIRCHILD RECORDING, Room 662
FEDERAL TELEPHONE & RADIO CORP., Booth 301
FEILER ENGINEERING CO., Booth 791, Room 611
FENTON CO., Booth 25
THE FINNEY CO., Booth 880, Room 632
FISHER RADIO CORP., Rooms 639, 640
FREED ELECTRONICS & CONTROLS, Room 633A
FREED TRANSFORMER CO., Booth 589
FRETCO, INCORPORATED, Booth 886, Room 646A
GEE LAR MFG. CO., Booth 124
GENERAL CEMENT MFG CO., Booth 320
GENERAL ELECTRIC CO., Booth 209, Room 520
GENERAL IND. CO., Booth 587, Rooms 658, 659
GENERAL INSTRUMENT CORP., Booth 778
G & H WOOD PRODUCTS CO., Booth 879
GRAMER TRANSFORMER, Room 537

GRANCO PRODS., Booth 5
GRAYHILL, Booth 105
GREAT EASTERN MFG. CO., Room 666A
GUARDIAN ELECTRIC MFG. CO., Booth 409
HALLDORSON TRANSFORMER CO., Booth 573
HALLICRAFTERS CO., Booth 575, Room 504-505
HAMMARLUND MFG. CO., Booth 583
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HARWAN-KRUDON, Room 528A
HAYDON PRODUCTS CO., Booth 108, Rooms 649A, 650A
HICKOK ELECTRICAL INSTRUMENT CO., Booth 873,
Rooms 524A, 526A
HI-LO TV ANTENNA CO., Booth 111
HY-LITE ANTENNA, Room 618
IE MFG., Booth 24
ILLINOIS CONDENSER CO., Booth 212
IMPERIAL RADAR & WIRE, Booth 102
INDUSTRIAL TELEVISION, Booth 118
INSULINE CORP. OF AMERICA, Booth 403, Room 512
INTERNATIONAL RECTIFIER CORP., Booth 784
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J-B-T INSTRUMENTS, INC., Booth 580
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JENSEN MANUFACTURING CO., Rooms 504A-505A
JERSEY SPECIALTY CO., INC., Booth 101
JERROLD ELECTRONICS CORP., Room 651A
J. F. D. MANUFACTURING CO., Booth 412, Room 549
E. F. JOHNSON CO., Booth 681
JONTZ MANUFACTURING CO., Booth 875, Room 655
KAY-TOWNES ANTENNA CO., Room 624
KESTER SOLDER CO., Booth 119
K-G ELECTRONICS CO., Booth 11
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LANSING SOUND CO., J. B., Room 652
LAPOINTE ELECTRONICS, INC., Booth 312, Room 612A
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LITTLEFUSE, INC., Booth 316, Room 626A
LOWELL MFG. CO., Booth 110
P. R. MALLOY & CO., Booth 678
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MERIT COIL & TRANSFORMER CORP., Booth 689
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MILLER TELEVISION CO., Booth 4
MODEL ENGINEERING & MFG. INC., Booth 107
MODERN-AIRE MFG., Room 621A
MOSLEY ELECTRONICS, Booth 123
MODERN-AIRE MFG. CO., Room 621A
DON MCGOWAN, INC., Rooms 613, 614
NATIONAL CARBON CO., Booth 680, Room 623
NATIONAL CO., Booth 303, Rooms 639A, 640A
NATIONAL ELECTRIC PRODUCTS, Booth 691
NATIONAL TELETYPE CORP., Room 644-645
NATIONAL UNION RADIO CORP., Booth 406
(Continued on page 73)

The Event: 1954 Electronics Parts Show

The Place: Conrad Hilton Hotel, Chicago

The Time: May 17-20, 10 AM to 6 PM

Sponsors: Association of Electronic Parts and Equipment Manufacturers; West Coast Electronic Manufacturers Association; Radio-Electronics-Television Manufacturers Association; National Electronic Distributors Association and Sales Managers Club, Eastern Group.



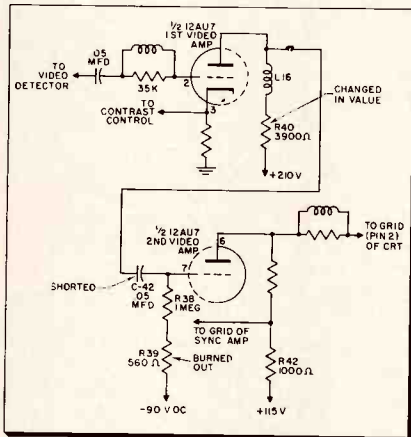
Shop Hints to Speed Servicing

Hand-Made Springs

Handy springs of various diameters and lengths can be made uniformly and quickly to fit most jobs by winding any type of spring wire along the threads of any standard bolt. Start the winding at the tip of the bolt and work toward the head. After the desired number of turns is wound on, turn the bolt counterclockwise. Your spring then winds off in finished form. This method is handy for fabricating dial or record-changer springs.—Larry Grashin, Republic, Penna.

4-Component Video Defect

The complaint on this receiver was "no picture." The set was an Olympic (model DX 214) with a two-stage video amplifier (see sketch). The cause was a shorted



0.05 mfd condenser (C-42). The heavy current flow resulting from the short blew out one half of the 12AU7 video amplifier tube and burned up resistor R-39, 560 ohms. After C-42, R-39 and the 12AU7 were replaced, the picture appeared very ghostly. It seemed as though the set were out of alignment. After a long time spent in checking, I found that resistor R-40 had also changed in value, from 3900 ohms to 185 ohms. Replacing this resistor cured the ghost.—Walter A. Skowron, Wichita, Kansas.

6BY5 Substitution Again

In reading the Shop Hints page in the March issue, I noticed a method for replacing the 6BY5 with the 6W4. I believe a 6W4 will have a shorter life in this particular circuit (Philco) than a 6BY5; also changing

the circuit wiring around is too bothersome. There is a much simpler method. Use a 5V4, tying the plates (pins 4 and 6) together with a piece of wire soldered to the tube pins. I use this only on Philco receivers which employ the 6BY5 in the damper circuit. Since there are no connections in these receivers to pin 6, there is no danger of getting into another circuit. An important advantage in this substitution is that a 6BY5 can be inserted at a later date, with no necessity of circuit re-wiring.—Buzz Brown, Hillsgrove, Rhode Island.

(The tube manual lists a higher peak inverse plate voltage rating for the 6W4, which was expressly designed for damper service. We are not at all sure that the 5V4 will outlast it.—Ed.)

Re-Mounting Pulled Chassis

Have you ever fumbled around trying to line up the mounting holes of a TV chassis with the holes drilled through the cabinet shelf?

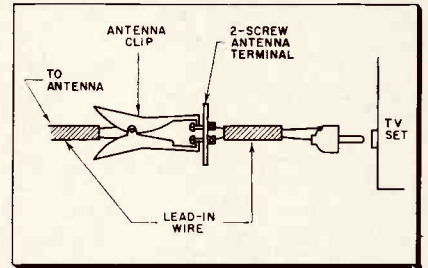
Or have you ever had the customer tell you that the picture tube was just a bit farther to one side than it should be after you had bolted down the set?

You can reduce such occurrences if you (before pulling the set) simply outline the position of the chassis on the wooden shelf by running the point of a pencil along the bottom edges of the two sides and the rear. When you re-install the set, simply fit the chassis to these guide lines. Then see how the bolts go easily into place. The picture tube should be where it was before, unless you moved it on the chassis.

Perhaps the time when this hint will be most valuable is when you try to locate the position of a side-mounted chassis on the board which slides vertically into the grooves of the cabinet. Since the chassis must be bolted to the board before the board is slid into place, there is no way of compensating for errors in mounting. Marking the outline of the chassis on the board will enable you to fit the chassis in the same position it occupied before removal.—Yvon O. Johnson, San Francisco, Calif.

Antenna Link for Bench Use

Here is a time-saving hook-up I made for my TV service department. Many service shops are using antenna clips at the end of the transmission line coming from the shop's antenna. This is of no use with sets



that have an RCA-type female receptacle going to the tuner input. I use the connection link illustrated to provide a convenient means of hooking up the transmission line to the set.—John L. Mancini, Winthrop, Massachusetts.

FM Microphonics

A number of late model TV-FM combinations proved to be highly microphonic with any but the lowest degree of volume. In more than half of the cases the condition was found to be due to somewhat loose turns in the FM oscillator coils. The problem was to make the coil more rigid without affecting its Q to any great extent. It was found that a few coats of plastic high-voltage spray, with at least 15 minutes elapsing between each spraying, successfully accomplished the desired results.—B. O. Riis, Miami, Florida.

6BQ7 Failure

Some 6BQ7 tubes used as RF amplifiers in cascode-type tuners show a tendency to fail after a relatively short period of use. Most of these failures show up as internal shorting and/or failure to amplify uniformly on all TV channels. Whenever difficulties of this nature arise with a 6BQ7, the tube should be replaced with the improved version, the 6BQ7A, which some manufacturers are incorporating as part of their original design. Although the two tubes are usually interchangeable, slight re-alignment will be necessary in some circuits when the 6BQ7A is used to replace the earlier type.

Technical new products on pgs.
48, 52, 54, 56, 60, 62, 67, 68

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The **CUSTOMER** will **LOVE** the **STYLING** and **EASE** of **TUNING**.
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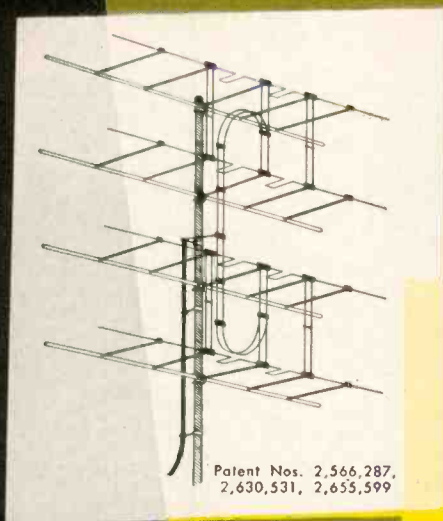


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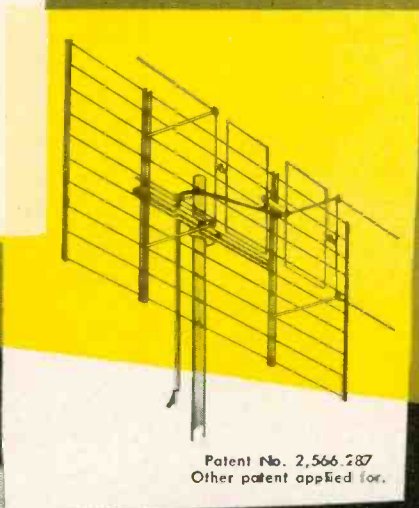
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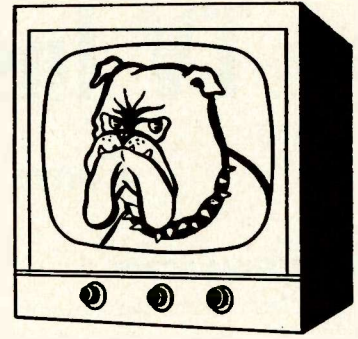
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"Tough Dog" Corner

Difficult Service Jobs Described by Readers



Bad Tube Overloads Set

This happened on an Emerson 142B. Originally the set came in with a burned-up power transformer. After replacing the two 6AX5 rectifiers, we completely checked all circuits, and found no shorts. When the set was turned on, it functioned properly. It was returned to the customer.

After two days of operation, we received another call from the customer, who complained of smoke coming from the set. Another examination showed the transformer had been overheated badly, and the rectifiers again were burned out. Re-examination of the circuits showed no apparent short. By disconnecting the B line, it was found that the transformer and rectifier circuits were operating normally. By checking both tubes in a tube tester and letting each one become very hot, it was decided that there were no shorted tubes.

The trouble was finally traced to an intermittent horizontal oscillator tube. When this 6SN7 ceased to oscillate, the horizontal output tube drew excessive current, thus causing the rectifiers to blow and the transformer to overheat.—*Leonard Ahmanson, Washington, D. C.*

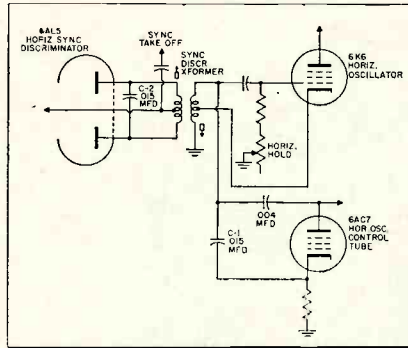
AGC-Related Sync Fault

A real "dog" came up involving keyed agc in a custom 630-type chassis using the reactance tube-6AC7 horizontal oscillator control circuit. Vertical sync instability, marked by rolling at low contrast levels, was the complaint. Horizontal sync seemed ok.

After checking sync amplifiers and getting nowhere, I decided to examine the blanking and sync pulses in the 2nd detector and video amplifiers. I wasn't too surprised to find the sync pulses distorted and slightly clipped, with some decay and distortion also evident in the blanking pulses. This led me to suspect an overload condition in the video i-f

amplifiers, possibly due to improper agc action.

A very slight readjustment of the horizontal frequency discriminator coil produced a marked improvement in the appearance of the sync and blanking pulses, and completely eliminated vertical sync instability—but that was only half the trouble.



Further tests showed a wide variation in horizontal oscillator frequency (drifting) which wasn't too apparent when viewing the picture. It became noticeable in this way:

If sync discriminator adjustments were made immediately after the set was turned on, a readjustment would subsequently be needed, since horizontal sync would fall out when switching channels about one-half hour to one hour later. If the set was allowed to cool off for a while at this time, and turned on again, the horizontal frequency was off, and the frequency screw would have to be reset once more.

Since capacitor C-1 controls frequency in conjunction with the 6AC7, I suspected it of being the "bug" (after checking all tubes involved), and replaced it. Eureka! The set worked perfectly, even after many hours of operation. For good measure, I replaced phasing capacitor C-2, realigned phasing and frequency, breathed a sigh of relief, and became human again.

Note: Keyed agc is directly dependent for proper operation on the presence of the correct horizontal oscillator frequency; if the frequency

is off, the developed agc voltage is not truly proportional to the received signal strength. The distortion of sync pulses was the result of improper agc voltage developed during the slow horizontal drift. It is evident that both horizontal and vertical pulses were affected, but the vertical instability was the more obvious when I first started servicing the chassis.—*Phil Smith, New York, N. Y.*

Intermittent Negative Pix

When a set develops a negative picture, it usually stays negative. In this instance, the picture kept fading from positive to negative, and back again, with an oscillatory period of about two to three minutes. The set performed satisfactorily on all except the two weakest usable channels.

The overload symptom (negative pix) indicated that the agc was involved; its adjustment, however, did not cure the trouble. Touching the chassis in the vicinity of the picture detector changed the rate at which the fade (between positive and negative pix) occurred. This clue indicated a very "hot" signal in the vicinity of the detector. Next a shield in the form of a metal plate was moved about under the chassis near the detector. When this shield touched the chassis, the symptoms disappeared. The position of the shield was noted, and a permanent one installed.

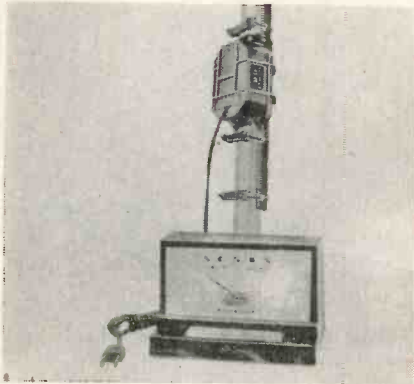
The cause of the trouble appeared to be feedback, present in sufficiently large amount to produce oscillation, which resulted in the negative picture. This oscillation eventually built up a high agc bias. The high agc bias cut down the i-f amplification, which caused the oscillation to stop. When oscillation ceased, agc bias was reduced. Under this condition, the i-f system returned to full amplification and the oscillation started again.—*James McRoberts, Brooklyn, N. Y.*

TV Installation Accessories

Converters and Antenna-Related Products

JFD ANTENNA ROTOR

Main features of the Rotenna include stop-watch tuning accuracy, cartridge-type removable drive unit, "Inline" mast collar construction, 390-degree traverse and finger-tip



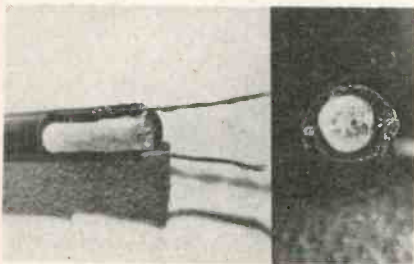
control console. The Rotenna housing is die-cast aluminum, as is the drive unit's housing, which is removable simply by taking out 2 bolts. The antenna is left operative in one direction when the motor is removed. JFD Mfg. Co., 6101 16 Ave., Brooklyn 4, N. Y.—TECHNICIAN

Varicon UHF CONVERTER

Model C is a compact, high-gain unit with a low noise figure, according to the manufacturer. It provides simple continuous tuning. Retail price, \$19.95. Varicon Corp., 65 Hope St., Brooklyn, N. Y.—TECHNICIAN

Belden TRANSMISSION LINE

Celluline, 300-ohm transmission line, is said to resist abrasion, water, weather and mechanical damage; and to reduce the effect of moisture, soot and dust on the surface of the

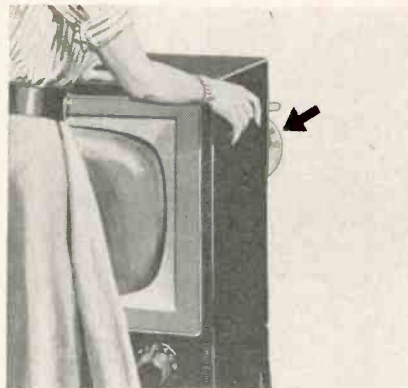


wire. Reduction of line losses is also achieved by insulating with polyethylene. The twin-pair lead-in

wires, wrapped in solid polyethylene around a cellular polyethylene core, conduct UHF signals with efficiency and stability. Belden Mfg. Co., 4647 W. Van Buren St., Chicago 44, Ill.—TECHNICIAN

Mallory HIDDEN UHF TUNER

The 188 is an all-channel UHF converter designed to fit completely inside a TV set. Installation requires no chassis or cabinet alterations. All that can be seen externally is the clear plastic selector dial and switch. Installation in the home



requires no special tools. P. R. Mallory & Co., Inc., 3029 E. Washington St., Indianapolis 6, Indiana—TECHNICIAN

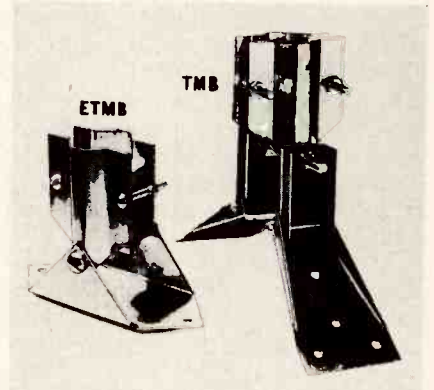
Granco CONCEALED UHF TUNER

For a concealed installation, the Hideaway tuner mounts at rear of TV set. Just the slide-rule tuning dial protrudes above top, while tuning knob and selector switch are accessible at right rear. Three models meet different requirements. HT-1 takes its power from the TV set. HT-2 is self-powered. HT-3 is self-powered and has additional amplification, needed in fringe areas. Granco Products Inc., 36-17 20th Ave., Long Island City 5, N. Y.—TECHNICIAN

Rohn ANTENNA MOUNTS

Rohn model TMB (deluxe), model ETMB (standard) and GTMB (drive-in) roof mounts accommodate all masts from 1-in. to 2¼-in. diameter. Both deluxe and standard models can be installed on peak roofs, flat roofs or surfaces, side

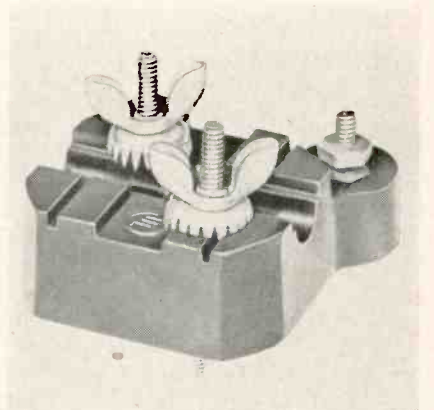
walls or any horizontal surface. Model GTMB drive-in ground mount base is suitable for use on 30-40-50-ft. masts, and is driven into the ground, with the mast affixed to the protruding portion. All



mounts are of heavy-duty steel, zinc-plated. Rohn Mfg. Co., 115 Limestone, Bellevue, Peoria, Ill.—TECHNICIAN

RMS INSTALLATION ACCESSORIES

Usable with either UHF or VHF transmission lines, universal lightning arrester model UL-5 features a self-tapping screw to facilitate mounting in different types of mounting areas. The piercing contacts on this UL-approved arrester eliminate the need for stripping transmission line. List price, 75 cents. Also available is a 2-set antenna coupler that will work in the



UHF range, model AC-2U. This printed-circuit coupler lists at \$4.00. RMS (Radio Merchandise Sales, Inc.), 2016 Bronxdale Ave., New York 62, N.Y.—TECHNICIAN

best (black and white)
picture quality

with the
Amphenol

INLINE*

Single bay INLINE



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... and best for **COLOR** too!

Set owners have their color television antenna *right now* if they have an Amphenol INLINE! Because the very features that make the INLINE the outstanding buy for black & white television are the same that have been listed as *requirements* for color television!

For *fidelity* color reception the antenna must have these characteristics:

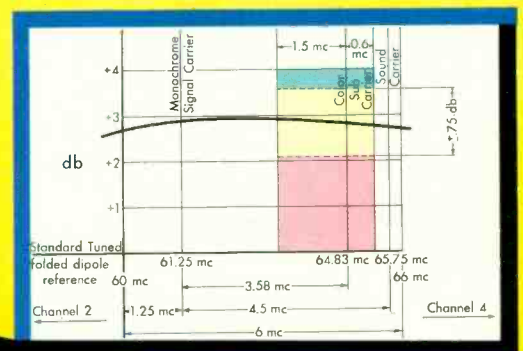
1. Antenna gain must be flat, no gain or loss greater than 1.50 db within 1.5 mc below and 0.6 mc above the color sub-carrier. The INLINE gain (see charts at right) fully meets this condition.
2. Antenna gain must be held down across the FM frequencies, 88 mc to 108 mc. The INLINE gain has been engineered for a sharp cut-off at the end of Channel 6—for rejection of FM signals.

Gain variation over the color modulation band for each VHF channel should not exceed ± 0.75 db; the following table gives figures for the INLINE on all channels.

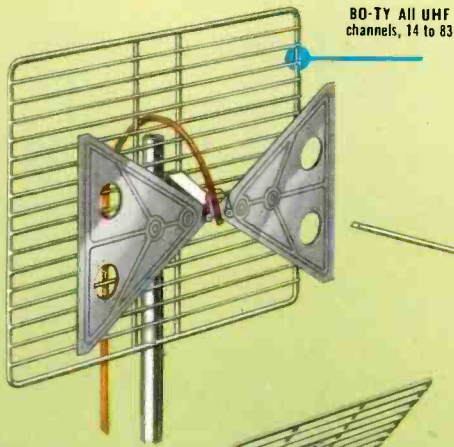
Channel	Gain Variation/db	Channel	Gain Variation/db
2	± 0.40	8	± 0.08
3	± 0.06	9	± 0.04
4	± 0.12	10	± 0.03
5	± 0.27	11	± 0.20
6	± 0.20	12	± 0.30
7	± 0.20	13	± 0.30

Gain chart showing ± 0.06 db variation over color modulation band for INLINE, Channel 3

*Reissue U.S. Pat. No. 23,273

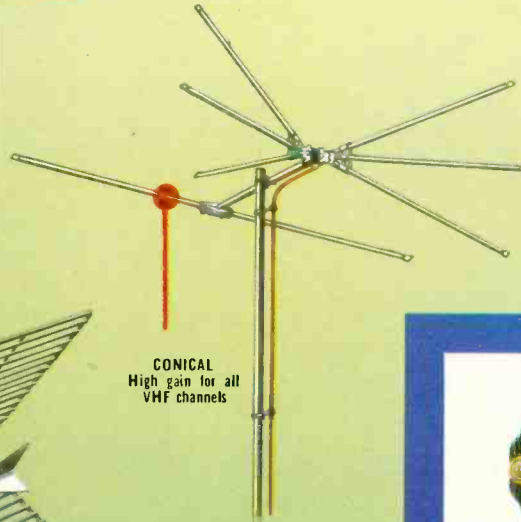
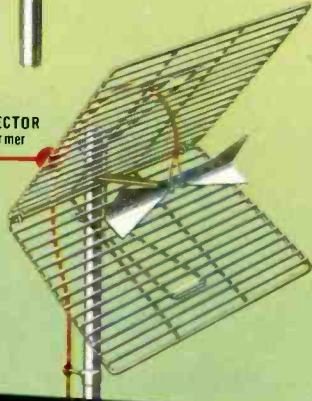


AMPHENOL



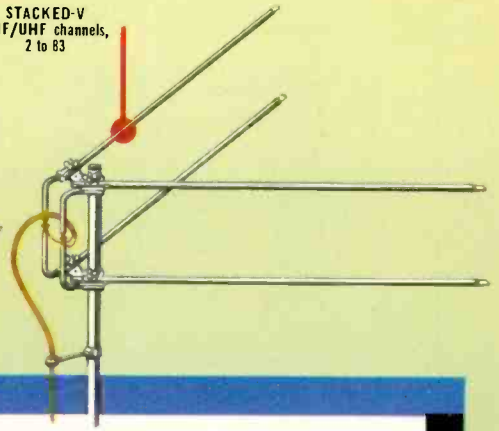
BO-TY All UHF channels, 14 to 83

CORNER REFLECTOR
Top UHF performer



CONICAL
High gain for all VHF channels

STACKED-V
VHF/UHF channels,
2 to 83



LIGHTNING ARRESTOR
New VHF/UHF universal
Lightning Arrestor has lowest
measurable loss of any
arrestor!



ISONET Low-loss matching
network for combined VHF/
UHF installations. Incorporates
lumped-circuit-constants-filter-network.

dependable performance in every

Amphenol antenna

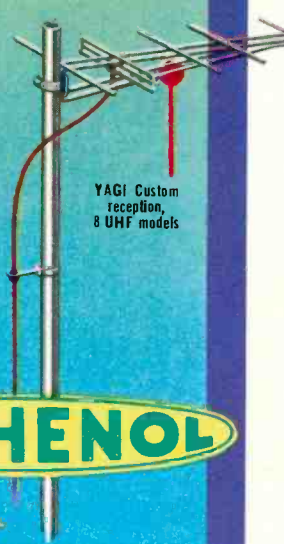
DEPENDABLE ANTENNAS. There is a wide choice of fine Amphenol antennas for VHF or UHF frequencies. The Bo-Ty, Corner Reflector, Yagi and Rhombic assure best picture quality at UHF. For VHF, besides the color-designed INLINE*, there is the new Amphenol Conical. And the Stacked-V will receive VHF, UHF or both. Each of these fine antennas has been designed and built to the quality standards of Amphenol—the highest in the industry.

DEPENDABLE ACCESSORIES. There are many other tested antenna installation accessories in addition to those illustrated on this page that are made by Amphenol. All reflect the engineering and production know-how of Amphenol.

*Reissue U.S. Pat. No. 23,273

AMERICAN PHENOLIC CORPORATION
Chicago 50, Illinois

AMPHENOL



YAGI Custom
reception,
8 UHF models



TRANSMISSION LINE Popular Flat Twin-Lead and unique AIR-CORE Tubular Twin-Lead* assure best-performance at either VHF or UHF.

*U. S. Pat. No. 2,543,696

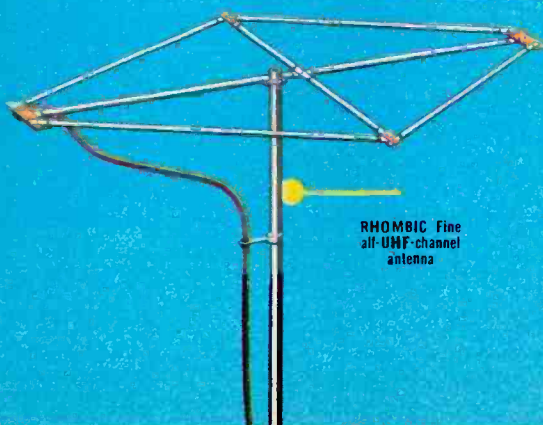


STAND-OFF INSULATORS
Three types available: flat,
coax and new universal type
for Flat or Tubular line.



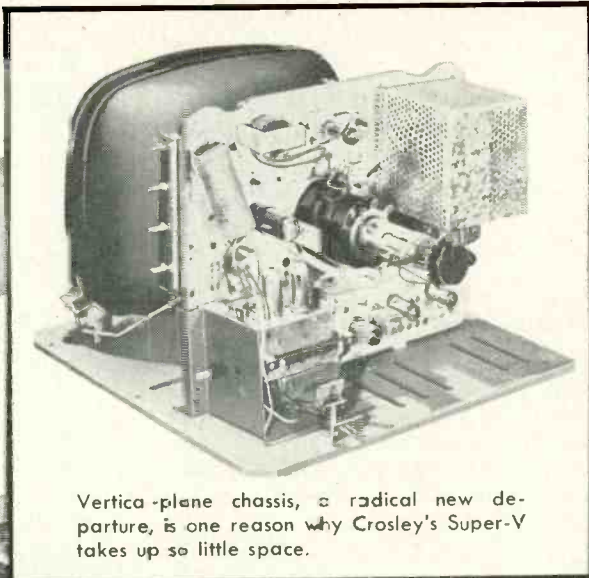
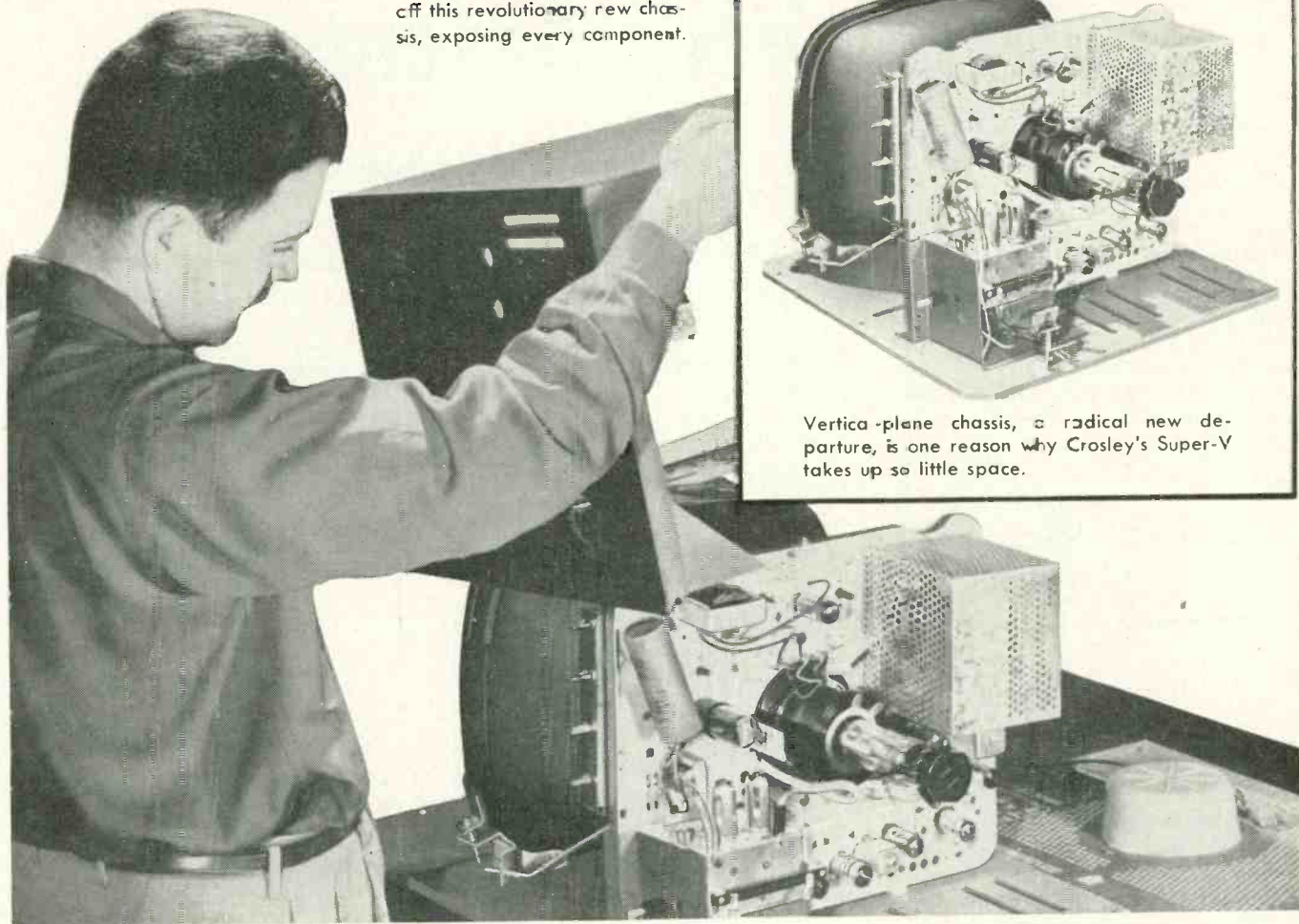
TELE-COUPLER Two to four
television sets operate from
single antenna with new and
efficient set couplers.

STACKING HARNESSSES Complete harnesses available for two bay stacking of the VHF INLINE or Conical and the UHF Yagi, Bo-Ty or Corner Reflector.



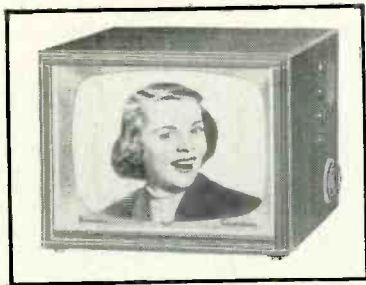
RHOMBIC Fine
all-UHF-channel
antenna

Bonnet-type cabinet simply lifts off this revolutionary new chassis, exposing every component.



Vertical-plane chassis, a radical new departure, is one reason why Crosley's Super-V takes up so little space.

Here's Why the Crosley Super-V Is a Service Man's Dream



Removing the back of the Super-V plainly exposes all secondary controls and every tube in the set. For any other service job, it's as simple as opening the hood of your car—no chassis to pull, just slide the entire cabinet up off the chassis.

You can get at the works immediately and without obstruction. You can service the Super-V in less time. And you can make more repairs in the home. The Super-V is a cinch to install. It's compact,

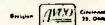
weighs only 53 pounds. And in many places you'll find its built-in antenna is all you need for perfect reception.

Here are a few of the reasons why the Crosley Super-V is the fastest-selling TV set on the market today:

- Takes up to 1/3 less space.
- Front is all screen—side controls.
- Choice of walnut-, mahogany-, blond-finished cabinets.
- Full-Year Warranty on picture tube—90 days on chassis parts!
- Available in large volume.

FOR MORE INFORMATION ON THE SUPER-V CALL YOUR CROSLEY DISTRIBUTOR NOW!

You can **SELL** them better on a **CROSLEY**

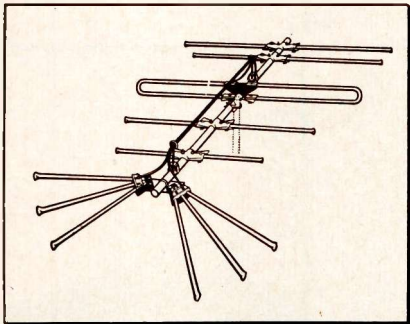


UHF—VHF Antennas

New Units for Outdoor and Indoor Use

Snyder ANTENNAS

This VHF conical-yagi combination antenna, code AX-670, has been designed for ultra-fringe area reception. Included in the Snyder Redi-Mount line, the AX-670 features eleven $\frac{3}{8}$ -in. aluminum ele-

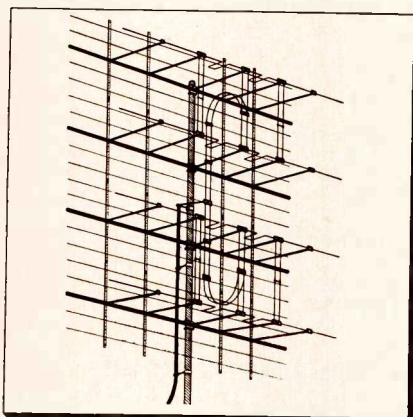


ments, five of which are preassembled; the other six are simply and quickly fitted into the lock plate.

The PT-H is a VHF/UHF portable indoor TV antenna that features an embossed element adjustable for maximum orientation. Unit mounts on a bakelite ball housing. Five feet of twin-X cable are supplied. Snyder Manufacturing Company, 22nd & Ontario Streets, Philadelphia 40, Pa.—TECHNICIAN

Finco FRINGE ANTENNA

The Finco 400-SA features the Fro-Bac screen, which is designed to provide high front-to-back ratio. Except for the Fro-Bac screen, the 400-SA is the same as the earlier

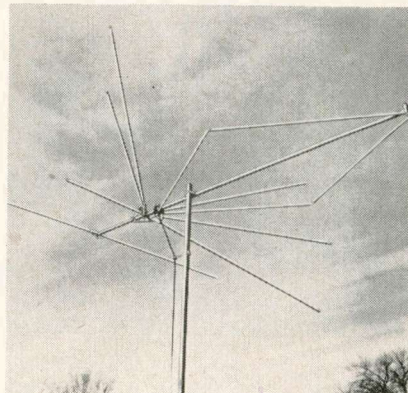


400-A. For present owners of the 400-A (VHF-UHF) and 400 (VHF), kit No. 14S is available for adding the screen to make the 400-

SA. Finney Company, 4612 St. Clair Ave., Cleveland 3, Ohio—TECHNICIAN

Falcon ANTENNAS

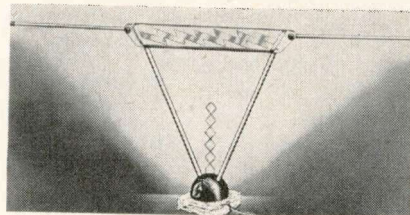
Falcon 98 is a high-gain VHF-UHF antenna covering channels 2-83. The UHF section is a rhombic, while the VHF section is of the conical type. Fed by a single lead-in; no filters or couplers are used. The array comes pre-assembled, in single-bay and double-stack models.



Model 713-10 is a 10-element broad-band yagi for channels 7-13, designed for reception where very high gain is necessary. Antenna comes completely pre-assembled and is available in single and double stack models. Falcon Electronics Co., 2003 Cedar Street, Quincy, Ill.—TECHNICIAN

Brooklyn INDOOR ANTENNA

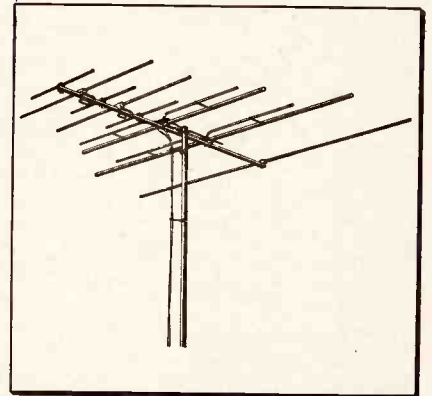
The Flash-O-Matic may be adjusted for optimum reception of FM, VHF or UHF signals by adjustment of its elements. In addition, a 6-position selector switch in the base



permits adjustment for individual channels. Sold with a money-back guarantee at a list price of \$11.95. Brooklyn Television Co., Inc., 72 Steuben St., Brooklyn 5, N.Y.—TECHNICIAN

Winegard VHF ANTENNA

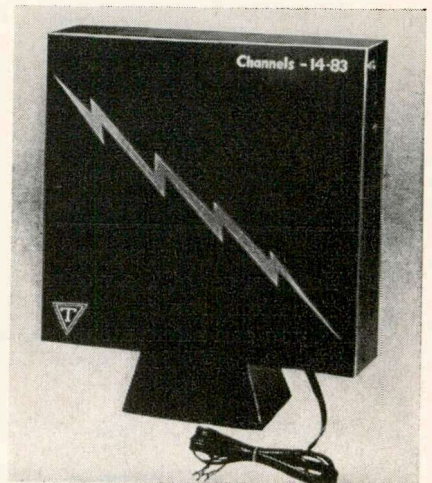
The Interceptor combines the manufacturer's multi-resonant dipole design with a focusing system. The first 5 elements, designated the



Electro-Lens, are said to intercept and focus signal onto the collector elements, to produce very high gain and sharp directivity. The manufacturer recommends the antenna in areas where co-channel interference is a problem. The John Winegard Co., 3000 Scotten Boulevard, Burlington, Iowa—TECHNICIAN

Tricraft INDOOR ANTENNA

Radome UHF antenna, model 222, is an enclosed 2-element broadside array with reflector. It is said to provide good gain, low standing-wave ratio and reduced interference



susceptibility. List price, \$5.95. Tricraft Products Co., 1535 N. Ashland Ave., Chicago 22, Ill.—TECHNICIAN

“Not in 55,973 years

have I had an imp that operated so efficiently in such high temperatures,”
says L. (Lucifer) Satan, Hades strong man. **“What’s more,**
the improved Jet Imps are tough and won’t scar under heat.”



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The rugged low loss thermosetting plastic case of the Jet Imps enables them to pass the RETMA Humidity test. Jet Imps are small too, built to the sizes which conform to the requisite design factors for the finest capacitors.

See your Pyramid jobber for the new Imp.



PYRAMID ELECTRIC COMPANY, 1445 Hudson Blvd., North Bergen, New Jersey

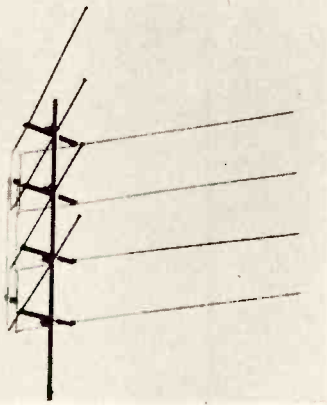
Burton Brown advertising

More New Antennas

UHF and VHF Designs Outdoor and Window Types

Channel Master ANTENNA

Model 411, the Econo-Vee, is said to have very high gain, increasing with frequency, across the UHF band, with moderate gain on VHF.

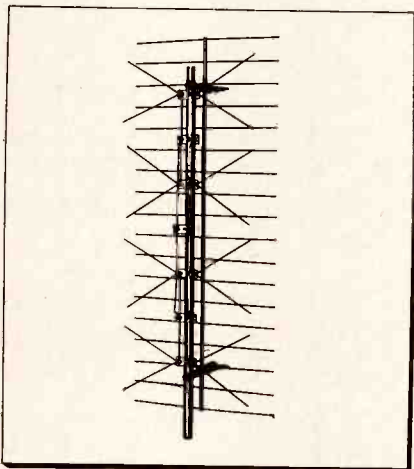


It is pre-assembled and braced to reduce picture flicker on UHF. Single-bay, \$4.17; stacked, \$8.75.

Model 9033-A Tenna-Tie is an inter-action filter designed to efficiently match separate high and low-band VHF antennas to a single transmission line without upsetting proper impedance match. List price, \$3.50. Channel Master Corp., Ellenville, N.Y.—TECHNICIAN

Trio UHF ANTENNAS

UBT series UHF antennas (bow-tie and reflector types) with all elements and phasing bars constructed

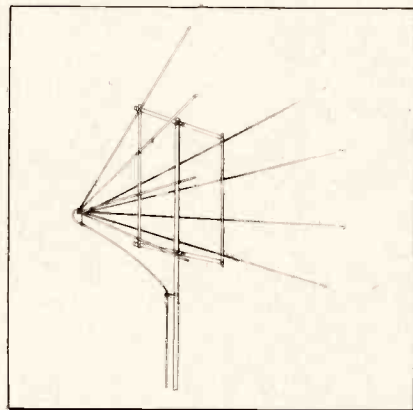


of hard drawn aluminum rod for rigidity, low wind resistance and light weight, are made in three models:

UBT-1, single-stacked; UBT-2, a 2-stack model; and UBT-4, a 4-stack model for ultra-fringe areas. The swingout, lock-tite reflector assembly uses support brackets which are part of the mast clamp assembly, assuring strength and freedom from vibration. Manufacturer claims high gain, excellent front-to-back ratios and good match to 300-ohm line. Trio Mfg. Co., Griggsville, Illinois.—TECHNICIAN

Gonset UHF-VHF ANTENNA

Designed for extremely high gain on UHF and good gain on VHF, the Big Horn comprises an electromagnetic horn which is rugged and light in weight. Because of its large capture area and broad-band characteristics, it is said to exhibit very

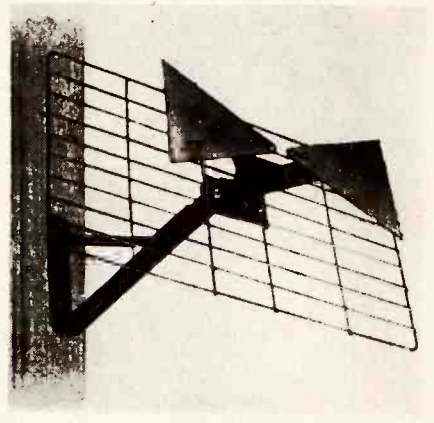


high gain throughout the UHF range. Gonset Company, 801 South Main Street, Burbank, Calif.—TECHNICIAN

Telco WINDOW ANTENNAS

One of these two TV window-mounted antennas is a bow-tie unit intended for UHF reception, featuring a free air insulator said to prevent short-circuiting under any conditions. The antenna provides high gain on all UHF channels, according to the manufacturer, and will swing in any direction. Cat. no. is 9056; unit lists for \$7.25. The 2nd Window-Tenna is a stacked double V, which can be used for UHF and VHF in primary and secondary signal areas. It is adjustable to approximately 120 degrees (VHF) and 160 degrees (UHF) when mounted

against a wall or flat surface. Cat. no. is 9057; unit lists for \$8.95. Television Hardware Mfg. Co., 919 Taylor Avenue, Rockford, Ill.—TECHNICIAN

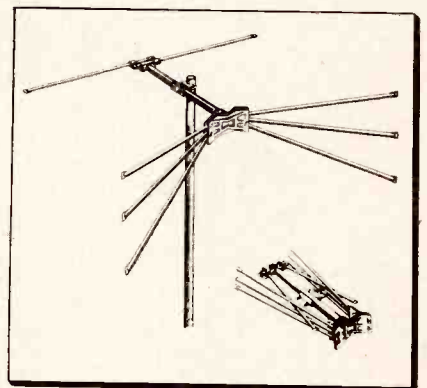


Tennalab 3-STACK ANTENNA

Model C213 is an all-channel VHF antenna of 3-stack collinear design said to have very high gain on Channels 7 to 13, with medium gain on Channels 2 to 6. Front-to-back ratio: high on Channels 2 to 6, medium on Channels 7 to 13. List price, \$29.95. Tennalab, Quincy, Ill.—TECHNICIAN

Q-Line CONICAL ANTENNA

Model 860, a pre-assembled all-aluminum conical, can be installed in a few seconds, according to the maker. Construction centers around an insulator head of unbreakable, weather-proof plastic. All elements are doweled for ruggedness. List



price, \$9.50, single-bay; \$19.95 two-bay. Q-Line Mfg. Corp., 1562 61 Street, Brooklyn 19, N.Y.—TECHNICIAN

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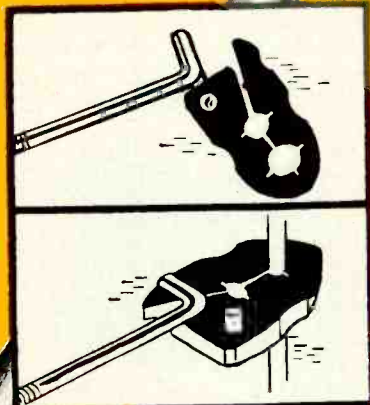
E-Z "Swing In"

UHF-VHF STAND-OFFS



Patent Pending




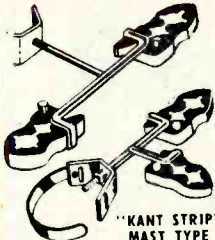

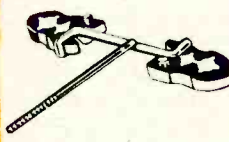


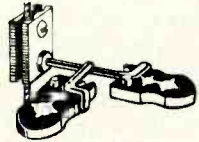

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lead-in
(any kind)

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 <p>DOUBLE T TYPE</p> <p>EZ8809 . . . 7 1/2" Wood Screw EZ8810 . . . 7 1/2" Machine Screw</p>	 <p>TRIPLE TYPE</p> <p>EZ8397 . . . 7 1/2" Wood Screw EZ8398 . . . 7 1/2" Machine Screw</p>	 <p>MAST SNAP-ON TYPE</p> <p>EZ8798 . . . 3 1/2" for 1 1/4" Mast EZ8795 . . . 7 1/2" for 1 1/4" Mast EZ8796 . . . 7 1/2" Dble. Snap-On Inline for 1 1/4" Mast</p>	 <p>GUY WIRE CLAMP TYPE</p> <p>EZ8255 . . . 3 1/2" Single EZ8256 . . . 7 1/2" Duplex Inline</p>	 <p>EAVE CLAMP TYPE</p> <p>EZ8811 . . . 3 1/2" Single EZ8813 . . . 7 1/2" Single EZ8812 . . . 7 1/2" Double Inline EZ8815 . . . 7 1/2" Double T-Type</p>



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Stephens **SPEAKER SYSTEM**

The Continental is a 3-way hi-fi speaker system housed in an enclosure that features an exponential rear horn. Components: two 103 LX low-frequency drivers, a 600-cycle cross-over network, a 625 H high-frequency multi-cellular horn with the P 30 driver, and an ultra-high-frequency 214 driver with its associated network. List price, \$825.00. Stephens Mfg. Co., 8538 Warner Drive, Culver City, Calif.—TECHNICIAN.

Telex **AUXILIARY SPEAKER**

This miniature plastic pillow speaker, developed for use in hospitals, homes and vehicles, weighs 2.6 oz. and has a maximum thickness of only 5/8-in. Can be attached to any radio or amplifying system. Permits



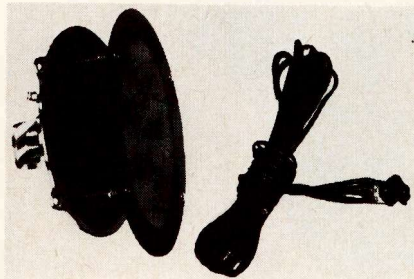
listening in bed or in a chair without disturbing people nearby. Department KP, Telex, Inc., Telex Park, St. Paul, Minn.—TECHNICIAN

Scott **NOISE SUPPRESSOR**

Type 114-A Dynaural Noise Suppressor reduces turntable rumble and record scratch or hiss without affect on wide-range musical reproduction. Designed as accessory unit for type 99 and 214 amplifiers and type 120 preamp, the dynamically-gated suppressor permits low- and high-frequency musical sounds to pass. Choice of 3 fixed high-frequency cut-off filters is also included. H. H. Scott, Inc., 385 Putnam Ave., Cambridge 39, Mass.—TECHNICIAN

Quam **REAR-SEAT AUTO SP'KR**

The AS-3 rear-seat auto speaker kit includes a 5 x 7 in. speaker. It will handle the undivided output of any conventional auto set. Ford,



Chrysler, Studebaker, Hudson and other cars have baffle openings for the AS-3 size unit. Quam-Nichols Co., 33rd Place & Cottage Grove Ave., Chicago 16, Ill.—TECHNICIAN

Cook **BINAURAL PHONO HEAD**

Home phonographs, including record changers, can be equipped to play Cook binaural (twin-track) records with the Clip-On, a side-car type of attachment that adapts the tone arm to accommodate 2 pickup cartridges. The device does not prevent playing of regular sin-



gle-track discs. Retail price, \$5.95. Cook Laboratories, Inc., 114 Manhattan St., Stamford, Conn.—TECHNICIAN

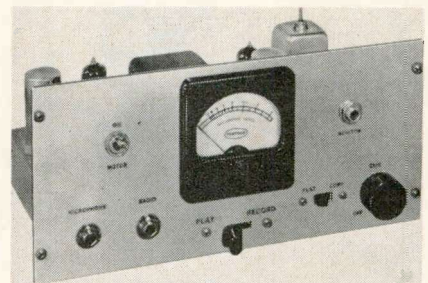
Many of the New Products in this issue may be seen at the Chicago Parts Show this month.

Masco **INTERCOMS**

Deluxe 12 and 24 station ac-powered intercoms, President Series, offer flexibility. A single master can be used with up to 24 remote stations; up to 25 masters may be used in a private system; or masters and remotes may be intermixed. A telephone-type handset can be plugged into any master for communicating in privacy with other masters. The President Series has been engineered for low-cost operation. Specifications available from the Mark Simpson Mfg. Co., Inc., L.I. City 3, N.Y.—TECHNICIAN

Pentron **TAPE PREAMP**

Model HFP-1 is a tape recorder preamplifier offering a frequency response of 50-12,000 cps \pm 3 db with low distortion. Included is an illumi-



nated VU recording meter. HFP-1 controls are: gain control and power switch, record-play switch, and compensation switch. List price, \$59.75. Pentron Corp., 221 E. Callerton, Chicago 16, Ill.—TECHNICIAN

Dubbings **TEST TAPES**

Test tapes for checking important functions of tape recorders are available either on a 5-in. reel, recorded at 7 1/2 inches per second, or a 7-in. reel, recorded at 15 inches per second. The tests on each are identical. With the reel and a simple test indicator (available separately) or a voltmeter, recorders can be tested periodically for wow and flutter, head alignment, frequency response, signal-to-noise ratio, volume level setting, and tape speed. Dubbings Company, 41-10 45th Street, Long Island City 4, N.Y.—TECHNICIAN

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Remember when black-and-white television first became a reality? Overnight, the demand for men who knew television grew. Even now, a shortage of qualified servicemen exists. Think, then—of the even greater demand for servicemen who will understand the many additional problems of color reception!

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Matrix-Adder Troubles

(Continued from page 27)

hue or color, if the guns weren't functioning normally). If white picture highlights cannot be obtained, then, whereas the raster shading is proper, the reason is that Y signal is not getting to the guns in the proper amount.

The source of trouble must lie, in this case, between the point where the Y signal branches into three paths (at the input to the matrix), and the crt guns—i.e., the trouble

must lie in one of the adder or amplifier stages (since the matrix is a resistive network, it may be considered a part of the adders' grid circuits). Trouble before this section (ahead of the matrix) would cause the picture to be distorted; trouble after this section (i.e., in the crt guns) would not permit a gray raster to be obtained.

The question now arises—which of the three adder-amplifier sections is defective? Again, a knowledge of the complementary relations between colors helps us make this localization by simply inspecting the color of the highlights. If the

highlights are yellow, for example, and adjustment of the blue gain control cannot make them white, the blue adder or amplifier is defective (since blue and yellow are complementary). In other words, since yellow and blue form white, the presence of yellow alone indicates the absence of blue.

The possibility of excessive gain in one of the adders or amplifiers should not be overlooked, when the trouble we have been considering (non-white highlights) exists. Negative feedback or degeneration is present in the adder circuits. When this negative feedback is for some reason absent, excessive gain results.

If the raster, for instance, is gray, but picture highlights are red, and cannot be made white by suitable adjustment of the gain controls, excessive gain in the red adder-amplifier section is probably present. Another but less likely possibility is that the blue and green adder-amplifier sections both have weak output.

This finishes our discussion of improper coloring of black and white pictures in a color TV receiver. It is important to check the color receiver's b & w reception in the manner described before trying it out on color because this practice simplifies troubleshooting very considerably. Note that reception of a good black and white pix (from a b & w transmitter) proves that the crt, the adders, and the color amplifiers are all operating correctly.

In next month's article, we will conclude our troubleshooting discussion of cases when wrong coloring is present in the b & w pix, and also discuss improper coloring of the color picture.

New B & W Phosphor

A new phosphor blend for use in monochrome picture tubes, designated as type P23, has been announced by the U. S. Radium Corp., N.Y. City. Though P23 has the same persistence characteristics of the standard P4, it produces a color that is considerably less blue. The new blend is said to result in greater efficiency and better picture quality, particularly with respect to reproduction of flesh tones. It is also said to result in greater eye comfort on the part of the viewer.

CLARIFICATION

On p. 36 of our April issue, data on a line of selenium rectifiers for color TV was credited to IRC. The company referred to was the International Rectifier Corporation, 1521 E. Grand, El Segundo, Calif.

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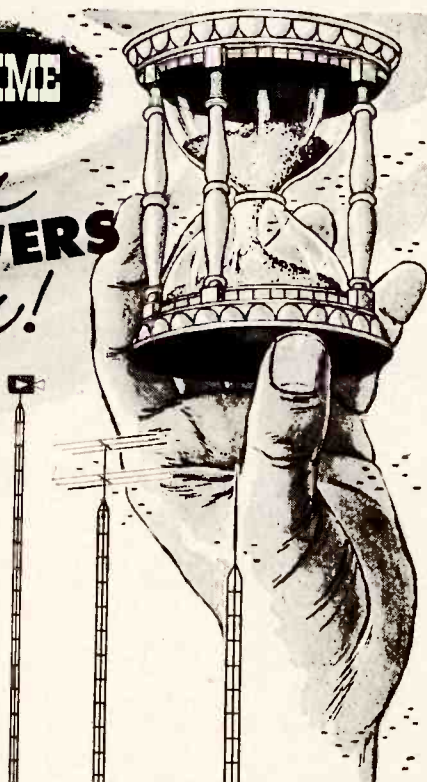
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Rohn Towers assure you of trouble-free performance and once installed give unquestioned satisfaction year in and year out! You are free of complaints because over the years Rohn Towers have proved themselves from the serviceman, dealer and customer point of view!

IN SALES

Sales acceptance has been phenomenal — thousands have been sold coast-to-coast — and the design has been one which has withstood every test known! Why "experiment" with an unproved tower design when you can sell Rohn?

So we ask you, "Why take chances with an untried tower? Be sure — sell Rohn — the only tower of its kind to withstand every test!"



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The No. 5 — The self-supporting tower for use up to 40', or guyed to 80'. An economical, yet sturdy, permanent tower!

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PEORIA, ILL.

They're Hot Packed



DELCO RADIO CANS ITS POWER TRANSFORMERS TO PROTECT THEIR QUALITY AND PERFORMANCE

If you want a part made *right*, you've got to be able to control all phases of its production. That's why Delco Radio exercises strict quality control over all its parts—for service use as well as for original equipment.

Let's look at some new power transformers for auto radios: The laminated core inserts are stamped out of low-loss silicon steel, then heat treated to insure retention of desired magnetic properties. Skilled operators use special machines to wind the primary and secondary coils. On the production line, laminations and coils are assembled and, with other parts, placed in a metal can. Finally, a hot asphalt compound is poured into the shield can. On cooling, it becomes a solid mass that holds all components in position, transfers heat and protects the transformer's quality and performance.

Satisfied customers are the basis of a good service business, and Delco Radio service parts assure customer satisfaction. Delco Radio service parts are available through your UMS Delco Electronic Parts Distributor.



Potting power transformers. The transformer can is filled with an asphalt compound which helps to protect the transformer and transfer heat from the transformer to the can for better heat dissipation.



A GENERAL MOTORS PRODUCT   A UNITED MOTORS LINE

DISTRIBUTED BY ELECTRONICS WHOLESALERS EVERYWHERE

DELCO RADIO

DIVISION OF GENERAL MOTORS CORPORATION, KOKOMO, INDIANA

Test Instruments and Shop Equipment

Transvision 4-IN-1 TESTER

This component checker is said to test flyback transformers and yokes for shorted turns; selenium rectifiers for circuit efficiency, and picture tubes for cathode emission, shorts and high-resistance leakage. It may also be used to reactivate pix tubes in or out of the set. Meter has calibrated dial and "good-replace" scale. Net price, \$39.95. Transvision, Inc., New Rochelle, N.Y.—TECHNICIAN

Trans-Tel UHF GEN. ADAPTER

Model 38 prevents obsolescence of VHF generators by adapting them to the UHF range. Cost is less than that required for purchase of separate UHF instruments. Some features: Converts output of VHF sweep generator, including built-in markers, to any UHF frequency with same sweep width as in original generator; Converts output of VHF oscillator to any UHF fre-

quency; converts any UHF signal to a VHF channel (5 or 6); converts a VHF signal (falling in Channels 2 to 6) to any UHF channel. May also be used as a UHF converter with a receiver. Accuracy, 0.5%, depending on associated VHF generator. Blank logging chart provided for more accurate hand calibration. Cables and connectors included for match to 75 or 300 ohms. List price, \$89.50. Trans-Tel Corp., 828 N. Highland Ave., Hollywood 38, Calif.—TECHNICIAN

Triplet METER CASE

This neolite case is available for three models of volt-ohm-mil-ammeters, nos. 630, 630-A and 630-T. A built-in stand rests the unit at a 45-degree angle when in use. A back compartment contains room to store instruction book, leads, the stand



and small tools. Carrying handle included. Snaps encase the unit for safe transport. The case, no. 639-N, sells for dealer's net price of \$8.50, complete with stand. Triplet Electrical Instr. Co., Bluffton, Ohio.—TECHNICIAN

Century CIRCUIT TRACER

The TV Dynatracer takes signal form one portion of a TV receiver and applies it to other sections under test. Requiring no external power, this portable probe-type unit can also be used to check voltages or to locate leakage, short-circuits, opens and intermittent conditions in many components, including transformers,



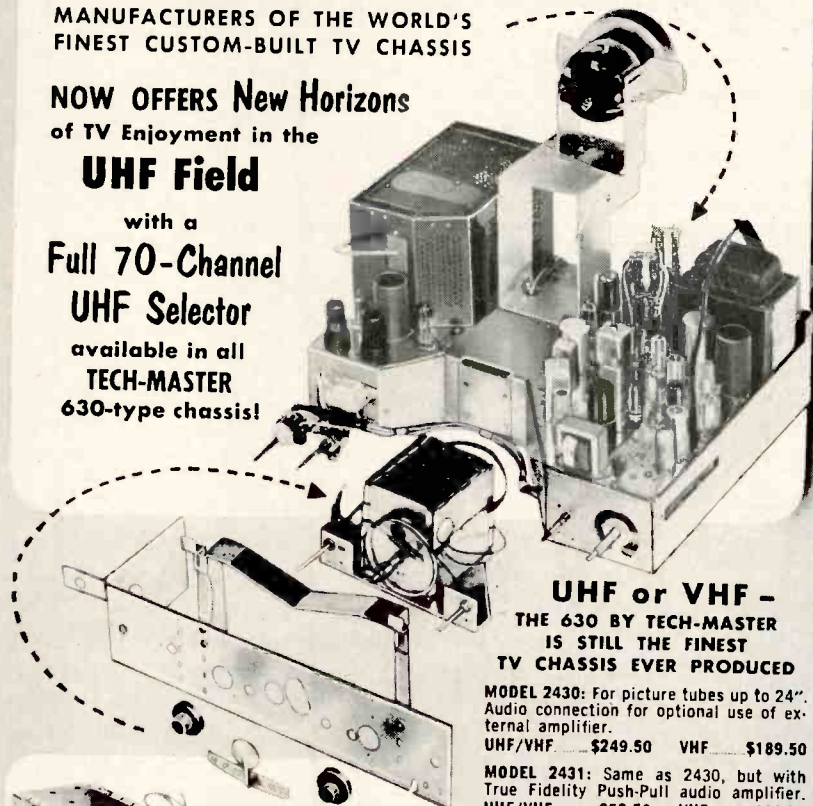
coils, condensers and resistors. The tracer can be used in sync, sweep, sound, afc and other circuits. Operating instructions are included with the unit. Century Electronics Co., 211-04 99th Ave., Queens Village, N.Y.—TECHNICIAN

TECH-MASTER

MANUFACTURERS OF THE WORLD'S
FINEST CUSTOM-BUILT TV CHASSIS

NOW OFFERS **New Horizons**
of TV Enjoyment in the
UHF Field

with a
**Full 70-Channel
UHF Selector**
available in all
**TECH-MASTER
630-type chassis!**



UHF or VHF -

THE 630 BY TECH-MASTER
IS STILL THE FINEST
TV CHASSIS EVER PRODUCED

MODEL 2430: For picture tubes up to 24".
Audio connection for optional use of external amplifier.

UHF/VHF \$249.50 VHF \$189.50

MODEL 2431: Same as 2430, but with True Fidelity Push-Pull audio amplifier.

UHF/VHF 259.59 VHF 199.50

MODEL 2430-9: For new 90° kinescopes. (24" rectangular, 27" and 30")

UHF/VHF 299.50 VHF 262.50

MODEL 1930: Similar to 2430 with slight modifications including area control switch at rear of chassis and cadmium plated finish instead of nickel.

UHF/VHF 224.95 VHF 179.50

MODEL C-30: Designed for the utmost in Quality at an Economical price.

UHF/VHF 209.95 VHF 149.50

(All prices NET. Picture Tube not included.)

Tube M'tg Brackets with 2400 Models

**UHF SELECTOR,
MODEL TV 101U:**
Fits into recess of any 630-type chassis. Brings in all available UHF stations. Factory assembled, wired and aligned. \$36.95 net

AT ALL LEADING RADIO PARTS DISTRIBUTORS
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445 BROADWAY, NEW YORK 13, N. Y.

**MAKERS OF CUSTOM-BUILT
TV CHASSIS, TV KITS
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AUDIO EQUIPMENT**

THE CROWNING ACHIEVEMENT IN ALL CHANNEL UHF-VHF ANTENNAS

FRETARAY®

Victoria

BY FRETCO

FRETCO Inc. proudly announces the VICTORIA Fretaray for 1954. Five years of proved performance and prestige is the unqualified endorsement given the FRETARAY Antenna by many thousands of purchasers in all major TV areas. Performance, simplicity and advanced design justifies the VICTORIA'S claim to being the finest antenna the industry has yet produced.

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THE FINEST ANTENNA THE INDUSTRY HAS YET PRODUCED

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SAVE 2-WAYS WITH University DRIVER UNITS & TRUMPETS

1. Higher Conversion Efficiency Lowers Amplifier Costs
2. Highest Quality Eliminates Maintenance Expense



UNIVERSITY trumpets are built to the highest standards in the industry—by the pioneers of the reflex trumpet. They are completely weather-proof, super conditioned for any locale or climate. Achievement of highest attainable conversion efficiencies reduce amplifier requirements. Get the facts.

* Less Driver Unit

MODEL	GH	LH	PH	SMH
Low Frequency Cutoff	85 cps.	120 cps.	150 cps.	200 cps.
Sound Distribution	65°	75°	85°	95°
Air Column Length	6 1/2 ft.	4 1/2 ft.	3 1/2 ft.	2 1/2 ft.
Bell Diameter	30 3/4"	25 3/8"	20 1/4"	16 1/4"
*Horn Length	27 1/4"	19"	15 3/4"	12"
*Shipping Weight	25 lbs.	20 lbs.	11 lbs.	9 lbs.

HIGH EFFICIENCY DRIVER UNITS



MODEL SA-HF — Workhorse of the sound industry for general PA and industrial use. Very high efficiency delivers extra punch to cut through heavy noise. Response to 10,000 cps. —ideal for both speech and music. Tropicized and hermetically sealed for trouble-free service anywhere.

MODEL MA-25 — A low cost unit for use where response to 6000 cps. meets requirements. No compromise in quality — incorporates all the famous UNIVERSITY quality features — high efficiency magnet structure, tropicalized full size 2" voice coil, rim-centered break-down proof bakelite diaphragm, etc.



MODEL PA-30 — A "de-luxe" unit incorporating every advance design feature including famous University W Alnico 5 Magnet and built-in transformer with terminals available thru housing base. For all amplifiers including 70 volt systems. Response 80-10,000 cps. with 30 watt cont. power.

MODEL SA-30 — Similar to the SA-HF in response and efficiency but includes a multi-impedance line matching transformer with taps accessible through water-tight cover. Taps designated in impedance values and watts for "constant voltage" lines. Die-cast aluminum housing affords lasting protection.

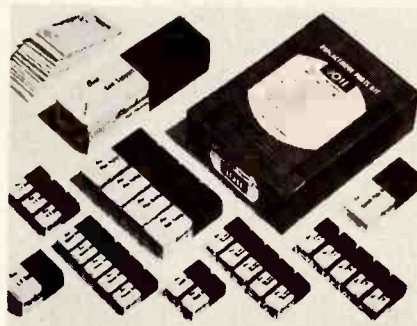


Write for catalog describing the complete line of University Hi-Fi and PA reproducer equipment, including Radial Type Projectors. Address Desk 26-E

University
LOUDSPEAKERS INC
80 SO KENSICO AVE. WHITE PLAINS, N. Y.

S-C TUNER PARTS KIT

Kit no. 1011 is a handy source of small tuner parts. Included are 104 of the most-called-for parts in servicing TV-200, TV-1500, and TV-2200 series Standard Tuners. The majority of parts are individually boxed. Price to the service



dealer is \$22.50. Tuner parts would, purchased separately, cost \$25.03. Standard Coil Products Co., Inc., 2329 N. Pulaski Road, Chicago, Ill. —TECHNICIAN

Alvin METAL PASTE

This easily-worked metal solder hardens without heat to form a permanent bond to metal, wood, plaster, glass or plastic. Applied with a putty knife or similar tool, Lab-



Metal hardens quickly and then may be filed, drilled, chiseled, tapped, ground or sanded smooth. Resistant to rust, rot and mildew, Lab-Metal does not shrink, crack, chip or peel. Useful for filling holes and cracks, repairing leaky tanks and plumbing, and making mechanical repairs on chassis. Alvin Products, Inc., 20-22 Houghton Street, Worcester 4, Mass. —TECHNICIAN

CBS SOLDER DISPENSER

This solder dispenser is said to eliminate haywire coils of solder. The operator's thumb on the knurled control wheel feeds solder and retracts it neatly when the job is done, without waste or mess. A

one-hand tool, the dispenser eliminates time taken to unroll and straighten solder. Holding 72 in. of solder, the dispenser is compact,



light, and comes with a handy pocket clip. CBS Hytron, Danvers, Mass.—TECHNICIAN

G-C CLEANER-LUBRICANT

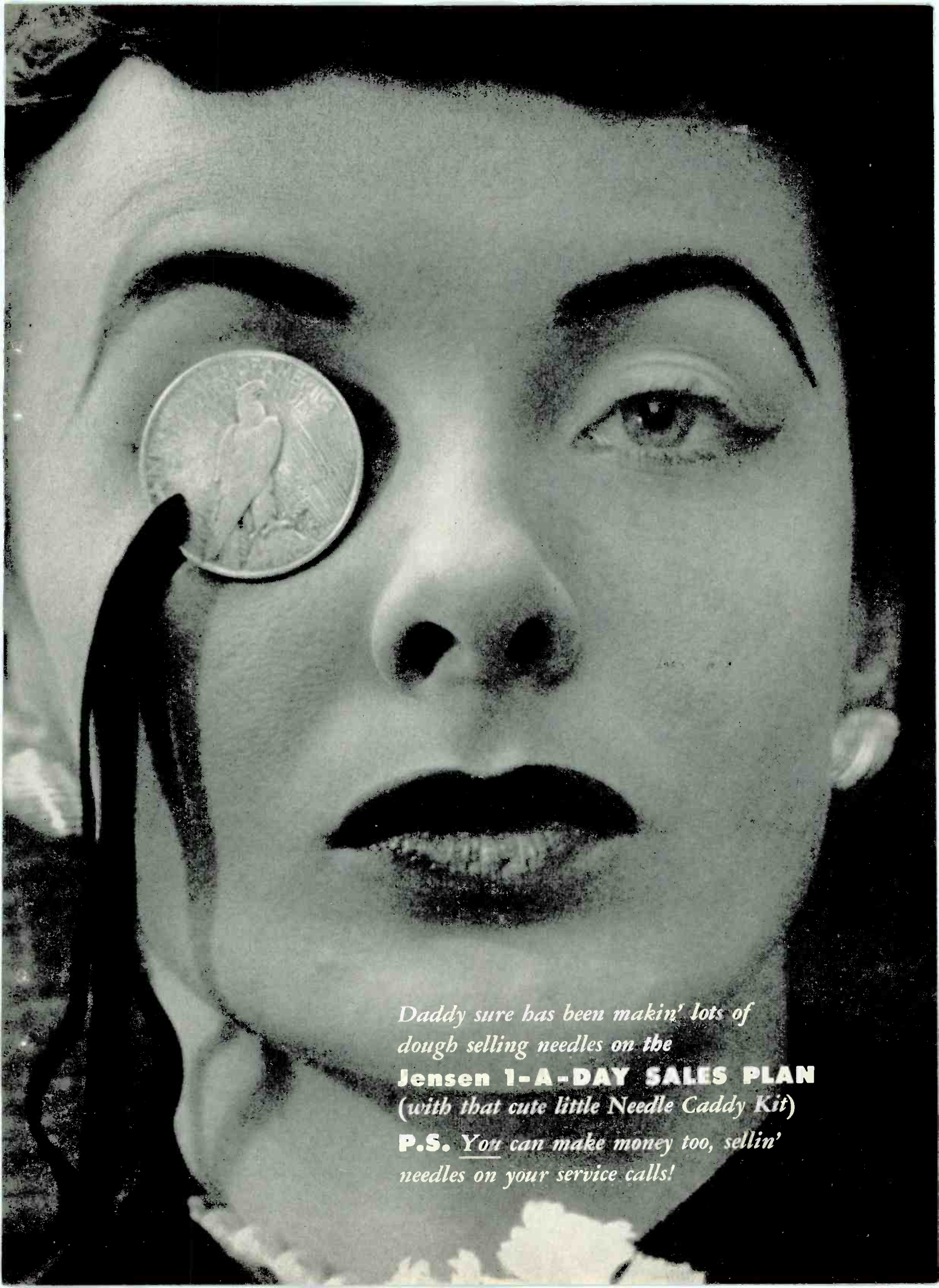
Spra-Kleen (Cat. no. 8666) is a two-in-one noise-preventing contact cleaner and lubricant, said to be easy to use on all contacts, relays, switches, controls and other moving parts. Since the chemical is released under pressure through a directional nozzle, remote parts like controls are easy to reach into without being removed. Unit is packed in a 6-ounce spray-type container. Dealers' net, \$1.00. General Cement Mfg. Co., 919 Taylor Avenue, Rockford, Illinois.—TECHNICIAN

Stark SOLDERING TOOL

Model 101 Solder-Quik is designed for light, fast soldering on small work. It operates from a 110-volt a-c line source through a step-down transformer. Heat is obtained at the tip of the Solder-Quik by



passing current through a small area of the work by means of two long-life carbon electrodes. Six heat ranges are available. Advantages of the model 101 are said to be light weight, accessibility to small spaces, and low power consumption. List price, \$19.95. Stark Mfg. Co., Tuscaloosa, Ala.—TECHNICIAN



*Daddy sure has been makin' lots of
dough selling needles on the*
Jensen 1-A-DAY SALES PLAN
(with that cute little Needle Caddy Kit)
P.S. *You can make money too, sellin'
needles on your service calls!*

ONE WORRY A SERVICEMAN
DOESN'T HAVE...



Tung-Sol makes the kind of tubes servicemen know they can rely on for profitable service work without callbacks.

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dependable

PICTURE TUBES



TUNG-SOL ELECTRIC INC., Newark 4, N. J.
Sales Offices: Atlanta; Chicago, Calumet,
Culver City (Los Angeles), Dallas, Denver,
Detroit, Newark, Seattle.

Some Antenna

Sunday Morning Tragedy.

Local Man Killed In TV Tower Fall

A young Hagerstown man was killed when a television tower which he was working on collapsed Sunday morning. As the tower plunged to the roof, Thompson was hurled to the front yard of the house, landing on his back as Miller still on the roof.

Marlon H. Thurmond, a Line Superintendent with the Potomac Edison Co., Hagerstown, Md., calls attention in the short article below to the dangers in antenna installations. A news clipping enclosed by Thurmond evidently inspired the article. The clipping reports the death of T. W. Thompson, 29, who was killed near Williamsport, Md., while working on a TV antenna tower.

Thompson had climbed up the tower to remove the antenna (in order to install it on a big pole away from the house), and was taking it down, when the bolts which held the tower to the roof broke. The guy wires connecting tower and roof snapped at the same time. Both wires and bolts were apparently rusty. A moderate wind was blowing at the time. As the tower fell to the roof, Thompson was plunged to the front yard and killed. Ironically, Thompson was using a safety belt, which fastened his body to the tower.

I feel that TECHNICIAN will do the industry a favor by calling attention to the hazards of antenna and tower maintenance.

Every utility lineman is carefully instructed to inspect and test a pole before he climbs it. If its strength is uncertain, or a weakness in it is suspected, pike poles and rope guys are used, and other precautions taken. These safety measures are considered necessary even though most utility poles are only thirty or forty feet above ground. Many TV towers are not only this tall; they are, in addition, elevated another thirty to eighty feet above ground by being mounted on a building. It is obvious that every safety precaution is in order.

Screw eyes, lag bolts or other anchorages should be inspected in walls and roof. Some strength test should be made, especially if the screw position is hidden from view, because the timber in which the screw rests may be rotted, or the screw's thread may have rusted away.

Turnbuckles should be checked for rusted or eroded threads, corrosion of dissimilar metals and weather or strain cracks of cast portions. (A turnbuckle is a coupling unit used to connect rods or wires lengthwise—Ed.) The guy wire should of course be inspected and if possible, a "tail" end removed and folded and unfolded until it is determined how much useful metal remains. (When a rusted wire is repeatedly folded and straightened at the same point, it soon breaks due to fatigue. The ends may then be examined. The good metal left will appear as a bright area. The size of this area, compared to the original wire, is a criterion of the wire's remaining strength.)

Rusted guy wire retains a high percentage of its tensile strength; vibration fatigue effects, however, are increased, and are difficult to detect. It cannot be said that rusted guy wire should be replaced in every case. However, rusted wire has lost the original protection of galvanizing and is on the way to becoming weaker.

Safety Notes

Manufacturers offer copper-clad and even stainless wire for guying purposes. This wire is of course expensive, but in a corrosive atmosphere it will soon save its extra cost by reducing maintenance expenses.

Obviously any weak anchorages should be corrected, and suspected weak guys replaced, beginning at lower levels and progressing upward as the tower is climbed.

Since the weight of a tower is a concentrated load on a small area of roof, it is advisable to avoid any sudden downward (column) load on the tower, which might cause the supporting material to fail. This precaution has largely to do with the style of climbing. Any sudden sideward (transverse) load on the tower (such as is produced, for example, by jerking the guy wires accidentally) should also be avoided, because of the great mechanical advantage offered.

A man's body on a tower adds to the transverse load effect if the wind is blowing, and this load is added to the normal strain in the guy wires. The technician should therefore climb *with his back to the wind*, so that the unbalance he produces is offset to some extent by the wind.

In addition to the fall hazard to the technician, there is always the risk of property damage. A new car top can get some nasty marks from small tools or hardware which falls several stories. Furthermore, an object like a hammer can be a lethal weapon if it lands on a pedestrian's skull!

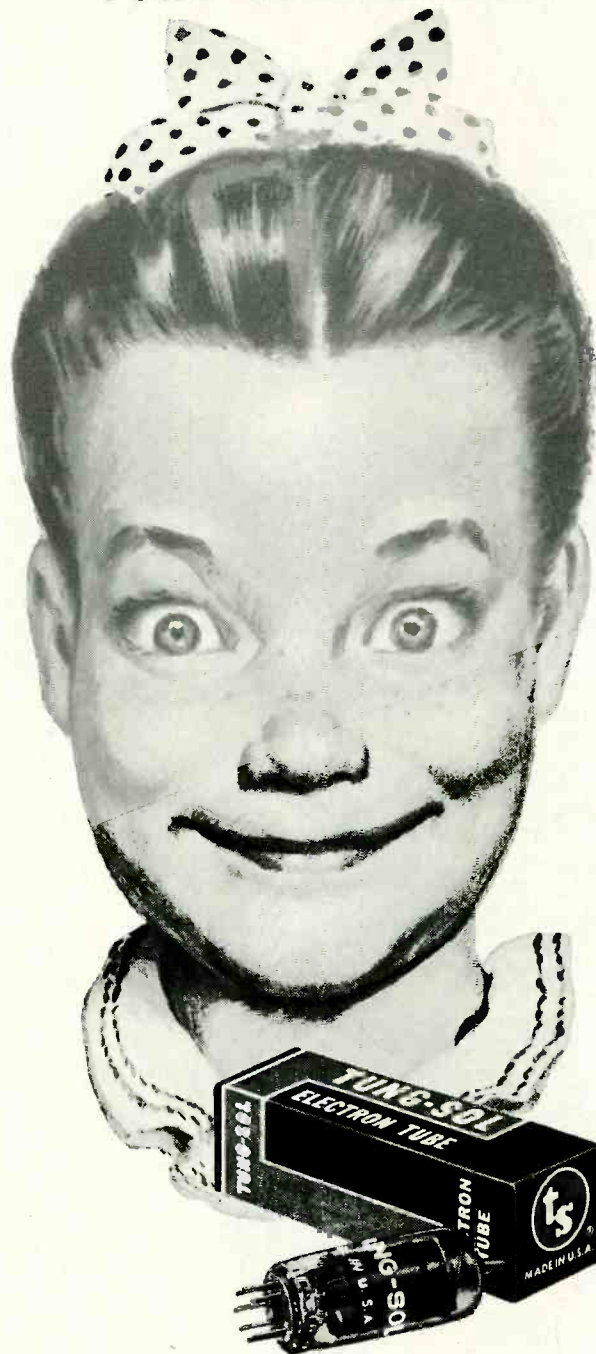
The safety-minded technician is always on the lookout for electric power lines, during installations and maintenance. There is real property damage if a loose guy wire contacts a heavy power distribution feeder, regardless of the voltage. If a tower falls across the feeder, there is sure to be hell to pay, and this may include compensation for a life or lives, burned property, and damage to the electric utility equipment, to say nothing of the interruption to important power service.

In summary: it pays to take time to be safe—the life you save may be your own.

CURE FOR CREDIT CUSTOMERS that really works is used by reader John L. Mancini, of Winthrop, Mass. John used to run into set owners who'd wait for him to find the trouble, put in new parts and wrap up the job before telling him they couldn't cough up the cash. A no-credit sign tacked to his tube caddy, in use for half a year, has worked wonders. Customers either pay cash or ask for credit before he goes to work, giving him a chance to decide whether he wants to take the risk. "When I enter a customer's home," says Mancini, "I make sure the sign is facing the customer, and is clearly visible. When I know the customer is a good payer, I turn the caddy around, keeping the sign out of sight."



THE SET OWNER WHO USES TUNG-SOL TUBES!



Tung-Sol Tubes have a long record of performance dependability. Servicemen can build a reputation on Tung-Sol quality.

TUNG-SOL[®] dependable TUBES-DIAL LAMPS

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





SH!

SH!

QUIETROLE

TRADE MARK REG. U.S. PAT. OFF.

ELIMINATES NOISE

THE SAFE* CLEAN WAY!

**"The ORIGINAL
NON-INFLAMMABLE
NON-CONDUCTIVE
LUBRICANT CLEANER"**

QUIETROLE quiets noisy television and radio controls, switches* and other moving parts.

REMEMBER . . . there is NO substitute for quality . . . SHH! . . . QUIETROLE eliminates noise, the clean safe* way.

NO GUM! NO GOO! NO GRIME!

Carried by recognized jobbers . . . everywhere!



Available in 3 sizes:
2 oz., 4 oz., 8 oz.

*Unequaled for TV front end switches. Contains no "thinner".



manufactured by
**QUIETROLE
COMPANY**
Spartanburg, South Carolina

SERVICE ASS'N REPORTS

NATESA Award to Sylvania

Harold H. Rainier, right, manager, distributor sales, Electronic Products Sales, Sylvania Electric Products Inc., receives the annual "NATESA Friends of Service Management" plaque for 1953 at the Union Park Hotel here on March 10. The award, made annually by



Left to right are: John Vail, Sylvania East-Central District Manager; John Cecich, Vice-President of NATESA; Vincent Lutz, West-Central Vice-President of NATESA (who made the presentation); Frank Moch, President of NATESA; Mr. Rainier, and R. L. McNelis, Sylvania Central District Manager.

the National Alliance of Television and Electronic Service Association 5908 S. Troy St., Chicago, is presented to that company, which in the judgement of NATESA, rendered services beyond normal functions during the year.

SARTA's Number Is in the Book

At the April 13th meeting of the San Antonio Radio & Television Association, 1922 W. Ashly Place, a representative of the Telephone Company was there to help members with their telephone advertising. The importance of every service company having its number with an ad in the classified section of the phone book cannot be stressed enough. The directory representative in your area is skilled in this work and he can help you to prepare an ad.

TSDA Sponsors Technical Meeting

The Television Service Dealers Association of Delaware County, Pa. sponsored a technical meeting, open to all television technicians, on March 23, 1954.

Fred Miller, Field Service Supervisor of General Electric Company, and Jack Abramson, Television Service Manager of General Electric Supply Company of Philadelphia, gave a chalk talk and demonstration on servicing of General Electric Television Receivers.

R&TTG Elects Officers

At the regular meeting of Radio & Television Technician's Guild of Gadsden, Ala., held March 22, 1954 the following new officers were elected, F. F. Hall, Pres.; Nelson D. Hardeman, Vice Pres.; Guy Brooks, Secy.; Arthur A. Godwin, Treas.; this election rounded out four years.

RTSA Elects Officers

A Board of Directors was elected at the last meeting of the Radio-Television Service Association of St. Paul, 635 S. Smith Ave., St. Paul, Minnesota. They are, as shown:



Front row—right to left Ros Hilker, Secy; Aaron Rosenblum, Board Member; Clyde Orlando, Vice Pres; Back row—Joe Driscoll, Pres; Robert Rohweder, Treas; Les Barton, Board Member and Harry Winkler, Board Member.

Blrth of a TV Service Assoc.

Last month, in King County, Washington, a new television servicemen's association was formed, the King County Television Service Association. Jim Humphrey is acting president and John K. O'Neill is secretary-treasurer.

WILL YOU HELP US?

. . . By giving us the name of the technical association to which you belong? We'd like this information as part of an editorial survey which we're conducting.

Service Association:

Address

Manager or Recording Secretary's Name:

Phone:

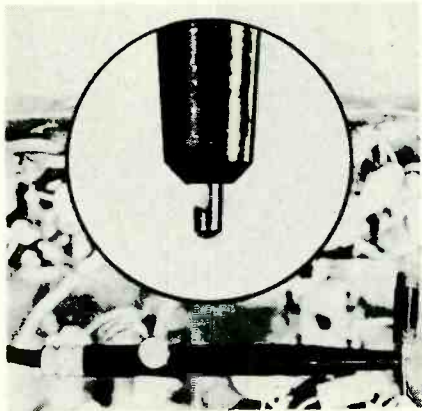
Your Name:

Your Address:

Mail to: Associations Editor, TECHNICIAN,
480 Lexington Avenue, N.Y.C. 17, N.Y.

Mic-Con TEST PROBE

Push-button operation combined with the provision of a hooked tip adapts this test probe to convenient clip-on use in miniaturized or other closely-wired circuits, while reduc-



ing the possibility of accidental shorting. The small, retractable tip may be inserted in circuits that do not ordinarily permit easy access. The button on the probe's barrel withdraws or extends the tip, which may be clipped to leads under test. Convenient for one-hand operation. Mic-Con Inc., 521 Lehigh Ave., Union, N.J.—TECHNICIAN

Miller CRT TESTER-RESTORER

As a tester, model D-60 detects internal shorts and heater-cathode leakage, permits measurement of emission at normal operating volt-



ages and checks restorability of the cathode. As a reactivator, the D-60 heats the cathode for a specified period with a controlled current, then seasons the cathode at higher temperature, also boiling off gases. This procedure is based on activation and seasoning techniques used for newly-manufactured tubes. Operating instructions provided. Dealer's net, \$89.50. Miller TV Co., 2840 Naomi, Burbank, Calif.—TECHNICIAN

Cornell-Dubilier RC BRIDGE

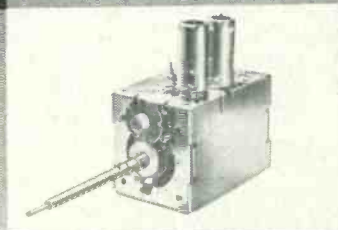
Capacitor-resistor bridge RF-60

measures important characteristics of most types of capacitors and resistors. It detects opens, shorts and intermittents; the capacity between wires and shieldings, transformer windings, wires in cables, etc. It enables measurement of insulation resistance of paper, mica and ceramic dielectric capacitors. Capacity, power-factor leakage and insulation resistance measurements can be made rapidly. Adjustable d-c power supply and "eye" null indicator. Cornell-Dubilier Electric Corp., South Plainfield, N.J.—TECHNICIAN

Sylvania DOT GENERATOR

White dot generator type 506 introduces on the TV screen a large number of rectangles of light, large enough to show the degree to which the electron beams are out of proper convergence on a 3-gun color crt. By observation of these rectangles while the tube is being adjusted, the serviceman is able to determine when the beams converge. Suggested list price, \$129.50. Sylvania Electric Products, Inc., 1740 Broadway, New York 19, N.Y.—TECHNICIAN

The
TARZIAN
TUNER
is known
for its
perfection



Yes, perfection in design . . . craftsmanship . . .
and perfection in performance.

That's why you'll find most manufacturers of the best known receivers today are placing their confidence in the Tarzian Tuner. Leading manufacturers are specifying the Tarzian Tuner to be used in the sets they make because they can be sure of customer satisfaction with the trouble-free Tarzian Tuner.

You just can't beat the Tarzian Tuner for selectivity, stability and reception . . . especially in fringe areas.

And, the Tarzian approach to UHF is recognized as the sensible . . . all-channel . . . approach. Remember, Tarzian was first with UHF engineered into a VHF Tuner.



SARKES TARZIAN, Inc.

Tuner Division • Bloomington, Indiana

THE TWO "MUSTS" IN EVERY TECHNICIAN'S SHOP



6 ounce
spray can
\$2.25
net

HUSH

REG. U.S. PAT. OFF.

Chemically Engineered for Tuning Circuits

For efficient economic results, spray direct to any tuner in the easiest possible manner, even while set is in operation. Will not affect inductance, capacitance or resistance.

Does not react to cold, oil, heat or corrosive solution; leaving a film which will not arc or build up dirt layers after application.

HUSH is not recommended for Potentiometers, ("volume controls")

2 ounce and 8 ounce bottles are available



2 1/4 ounce
spray can

\$1.25
net

EVER-QUIET

REG. U.S. PAT. OFF.

Volume Control and Contact Restorer

Scientifically adapted for volume controls, (potentiometers) wire or carbon, and all types electrical contacts. A free flowing liquid. No powder residue. DOES NOT ARC—or affect inductance, capacitance or resistance.

Harmless to all metals, insulation and fine finishes. Contains no Carbon "Tet," gums or other adhesive chemicals, insuring a lasting film against arcing or dirt layers building up after application.

2 oz.—8 oz.—32 oz.
sizes available

HUSH and EVER-QUIET are guaranteed!

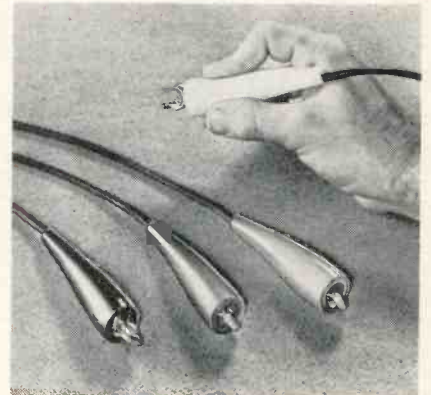
See your distributor or write to:

CHEMICAL ELECTRONIC ENGINEERING, INC.

283 MAIN STREET • MATAWAN, N. J.

Mueller CLIP INSULATORS

Plastic test-clip insulators, now available in a variety of 5 colors, facilitate circuit tracing and multiple circuit testing operations. These



flexible insulators are now offered in red, black, blue, yellow and white. The bright colors may be distinguished from each other under relatively poor lighting conditions. Free samples of the insulators are available from the manufacturer. Mueller Electric Co., 1575Y E. 31st St., Cleveland 14, Ohio—TECHNICIAN

Ram FLYBACKS

The X103, X104, X105, and X106 are replacements for flybacks used, with few exceptions, in Motorola chassis TS-14 to TS-505; 40 chassis and 416 models are covered. Ram Electronic Sales Co., S. Buckhuot St., Irvington - on - Hudson, N. Y.—TECHNICIAN

VTP WELDING TIMER

This fractional cycle timer is designed for reliable timing of spot or seam welders. Controls and features: on-off switch with pilot indicator, cathode protection pilot, hi-lo heat range switch, adjustable timing. Model F-216 operates from 220-v source; model F-217 works from 110-v line. Vacuum Tube Products, 506 S. Cleveland St., Oceanside, Calif.—TECHNICIAN

Arco SCREWDRIVER-RACK SET

This 6-piece magnetized screwdriver set includes a wall-mounting handy rack. Plastic handles are UL approved. Contents of each set: heavy-duty driver, mechanic's driver, no. 2 cross-point (Phillips type), cabinet-style driver, stubby driver and long-blade driver for fine work. Each set guaranteed. Retail price, \$1.25. Rosenberg Bros. and Co., Smithtown, L.I., N.Y.—TECHNICIAN

THE NEW MODEL TV-11

TUBE TESTER



Operates on 105-130 Volt 60 Cycles A.C. Hand rubbed oak cabinet complete with portable cover **\$47.50**

- Uses the new self-cleaning Lever Action Switches for individual element testing.
- Because all elements are numbered according to pin number in the RMA base numbering system, the user can instantly identify which element is under test.
- Tubes having tapped filaments and tubes with filaments terminating in more than one pin are truly tested with the Model TV-11 as any of the pins may be placed in the neutral position when necessary.
- Uses no combination type sockets. Instead individual sockets are used for each type of tube. Thus it is impossible to damage a tube by inserting it in the wrong socket.
- Free-moving, built-in roll chart provides complete data for all tubes.
- Phono jack on front panel for plugging in either phones or external amplifier detects microphonic tubes or noise due to faulty elements and loose external connections.

EXTRA SERVICE—The Model TV-11 may be used as an extremely sensitive Condenser Leakage Checker. A relaxation type oscillator incorporated in this model will detect leakages even when the frequency is one per minute.

**SHIPPED ON APPROVAL
NO MONEY WITH ORDER — NO C. O. D.**

Try it for 10 days before you buy. If completely satisfied send \$11.50 and pay balance at rate of \$6.00 per month for 6 months.—No Interest or Carrying Charges Added. If not completely satisfied, return to us, no explanation necessary.

MOSS ELECTRONIC DISTRIBUTING CO., INC.

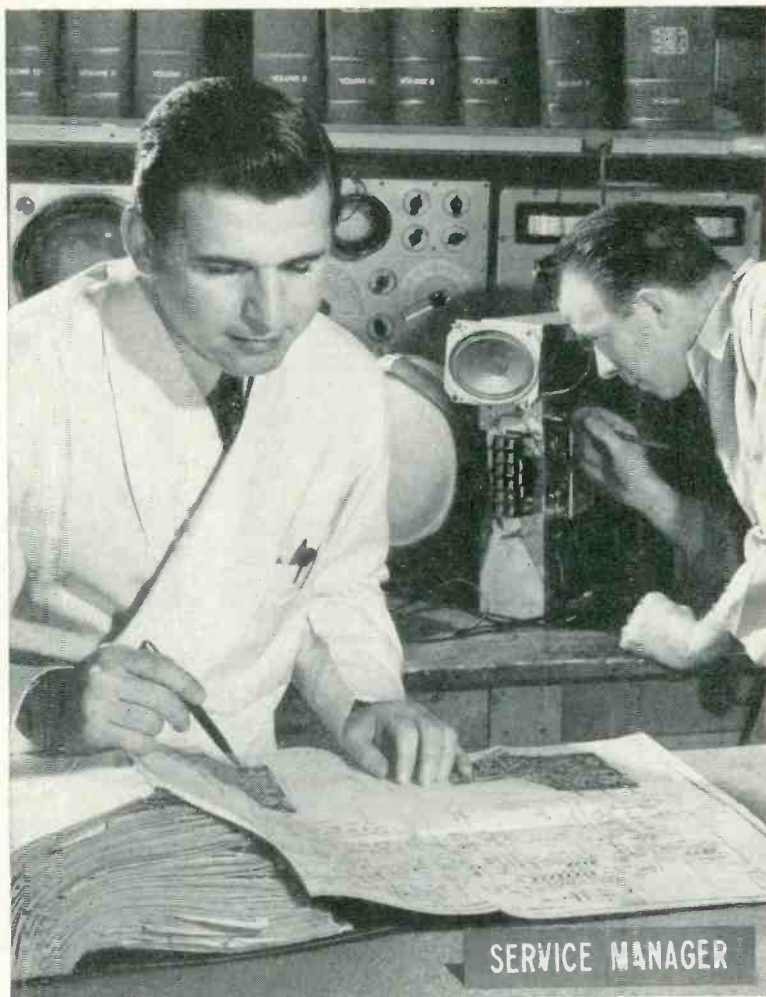
Dept. D-36, 3849 Tenth Ave., New York 34, N. Y.

Please rush one Model TV-11. I agree to pay \$11.50 within 10 days after receipt and \$6.00 per month thereafter.

NAME
ADDRESS
CITY ZONE STATE

Here's a NEW Way to Reach the Top in TV SERVICING

**All-practice method—
professional techniques,
skills, knowledge of
circuits, etc.**



SERVICE MANAGER

Includes 17" picture tube, all other tubes, components for a TV Receiver, Scope, Signal Generator, HF Probe. Low Introductory price under \$200, on easy terms. Mail Coupon today.

IF YOU HAVE some Radio or Television experience, or if you know basic Radio-Television principles but lack experience—NRI's new Professional Television Servicing course can train you to go places in TV servicing. This advertisement is your personal invitation to get a free copy of our booklet which describes this training in detail.

LEARN-BY-DOING "ALL THE WAY"

This is 100% learn-by-doing, practical training. We supply *all* the components, *all* tubes, including a 17-inch picture tube, and comprehensive manuals covering a thoroughly planned program of practice. You learn how experts diagnose TV receiver defects quickly. You see how various defects affect the performance of a TV receiver—picture and sound; learn to know the causes of defects, accurately, easily, and how to fix them. You do more than just build circuits. You get practice recognizing, isolating, and fixing innumerable TV receiver troubles.

You get actual experience aligning TV receivers, diagnosing the causes of complaints from scope patterns, eliminating interference, using germanium crystals to rectify the TV picture signal, obtaining maximum brightness and definition by properly adjusting the ion trap and centering magnets, etc. There isn't room on this or even several pages of this magazine to list all the servicing experience you get.

UHF AND COLOR TV MAKING NEW BOOM

Installing front-end channel selector strips in modern UHF-VHF Television receivers and learning UHF servicing problems and their solution is part of the practice you get if you live in a UHF area. To cash in on the coming color TV boom you'll need the kind of knowledge and experience which this training gives.

GET DETAILS OF NEW COURSE FREE

Once again—if you want to go places in TV servicing, we invite you to find out what you get, what you practice, what you learn from NRI's new course in Professional Television Servicing. See pictures of equipment supplied, read what you practice. Judge for yourself whether this training will further your ambition to reach the top in TV servicing. We believe it will. We believe many of tomorrow's top TV servicemen will be graduates of this training. Mailing the coupon involves no obligation.



National Radio Institute, Dept. 4EUT
16th and U Sts., N.W., Washington 9, D. C.

Please send my FREE copy of "How to Reach the Top in TV Servicing." I understand no salesman will call.

Name _____ Age _____

Address _____

City _____ Zone _____ State _____

KESTER

Since the most important single step in Radio-Television Servicing is soldering . . . it's just plain good sense to use the best — KESTER SOLDER . . . Key Name in Solder for More Than 50 Years.

KESTER SOLDER COMPANY
4264 Wrightwood Avenue • Chicago 39, Illinois
Newark 5, New Jersey • Brantford, Canada

SOLDER

NEW!

6 and 12 VOLT DC POWER SUPPLY
completely assembled at a comparable **KIT PRICE**

MODEL D-612
ONLY \$39.95 net

UNMATCHED FOR TESTING AND SERVICING
0 to 8, 0 to 16v. completely variable; 0 to 10 amps. at 12v. continuous. An unbeatable combination for testing and service work. Operates all auto radios. For relays, phone circuits, low voltage devices, battery charging, etc. Less than 5% ripple over rated ranges. Withstands high overloads.

MODEL "B"
FILTERED DC POWER SUPPLY
For servicing, testing or operating low power 2-way mobile auto radios. 1 Model B delivers 6v. at 20 amps. 2 Model B's in parallel deliver 6v. at 40 amps. **\$49.80 net**

MODEL "S"
CONVERTS BATTERY RADIOS TO AC ALL-ELECTRIC
Assures hum-free reception from any 1½-volt, 4 to 6 tube battery radio using 115 volt, 50/60 cycle source. Fits battery space. Guaranteed 3 years. **\$11.10 net**
See your jobber or write direct for details.

ELECTRO PRODUCTS LABORATORIES
4501-Ta N. Ravenswood Ave., Chicago 40, Ill.
Canada: Atlas Radio Corp., Ltd., Toronto

Schulman Joins CBS-Columbia

Harold J. Schulman has been named Director of Service for CBS-Columbia, the receiver manufacturing division of the Columbia Broadcasting System. Schulman, who resigned from a similar post, he held for more than three years with Al-



len B. Du Mont Laboratories to accept the new position, will supervise all CBS-Columbia service and field engineering activities. Prior to the Du Mont affiliation, he was service manager for Admiral Distributors in New York for three years. He is also chairman of the Service Committee of the Radio-Electronics Television Manufacturers Association.

Ready "Jetron" Showing

When J. Tunkl, Jetron Mfg. Co. pres., introduces his firm's new indoor TV antenna at a private showing at the Congress Hotel, Chicago, May 17-19, some lucky visitors will walk off with door prizes. Shown



helping Tunkl pick winning numbers on 12 prize clock-radios are Angel Casey, actress, and Alice Davis, finalist in Mrs. Illinois contest.

Free Javex Offer

An ivory custom TV wall outlet plate, with lead and plug, mounted on a counter display merchandiser, is being offered free to all parts jobbers and distributors by Javex. The unit was described in the April issue of **TECHNICIAN**. Javex, P.O. Box 646, Redlands, Calif.

Technician's Lighter Side

with Sol Heller

BURGLAR CONVERTED TO UHF.

Remember those ads in the big slick magazines, where a burglar spurns the jewelry and steals the Pastafazoola soup, or some other favorite product? Well, life finally caught up with the advertising copywriters in Milwaukee, where a woman burglar smashed a store window and, spurning everything else, tried to steal a UHF converter. Converter manufacturers should solicit that gal for a testimonial when she's safely tucked away in jail. Maybe she could write them something like: "I paid with my liberty for a converter; but you can get one for only \$39.50."

* * *

DID WE RING THE BELL? A new machine has joined the long list of mechanisms that do everything—well, almost everything—that people can do. This IBM unit translates from one language into another. Working vocabulary of the gadget is 250 words. Incoherent statements and misprints cause a bell to ring in the machine. Under its initial set-up, Russian was fed in, English came out. Wonder what would come out if vodka was fed to the input? Coca-Cola?

* * *

BETWEEN HER AND THE TV SET. Reader Bob Stentz, of Hamilton, Ohio, tells about the customer who phoned in to report trouble in her TV set. "The accent was definitely on the hillbilly side," notes Bob. "When I asked her what was wrong, she answered—'well, it's talkin' to me, but it ain't lookin' at me'."

* * *

SCRAPING THE BOTTOM OF THE MORNING. Man in Carbondale, Pa., has patented an alarm clock that keeps an electric eye on the sleeper. The set-up is such that the alarm cannot be stopped till the sleeper gets out of bed and stays out.

I have my own method, which I never got a patent for. Simply set your electric alarm clock, stick it in your bedroom closet, lock the closet, and hide the key. Even if you sleep through the racket when the alarm goes off, your neighbors probably won't, and by the time you find the key, and silence the infernal jangle, you'll be so irritated that going back to sleep will be out of the question.

* * *

CURSES, UNMODULATED. TV technician we know cussed a customer—and got away with it. "May your battery portable," he said fervently, "always regenerate at low volume."

Mr. Electronic Service Technician



You have seen and will continue to see, in the chassis of TOP-NAME Radio and TV sets, an increasing number of Planet electrolytic capacitors — conspicuous because of their shiny red cardboard jackets. They are in those quality sets because components engineers have proven for themselves that PLANET condensers are "ENGINEERED FOR QUALITY".

1 year
service
guarantee

You can take advantage of their findings by purchasing from your distributor Planet universal replacement types of the same high standard of quality. Ask for PLANET by name.



"ENGINEERED FOR QUALITY"

Write now for
latest FREE catalog
206-A

PLANET MANUFACTURING CORPORATION

225 BELLEVILLE AVENUE
BLOOMFIELD, N. J.

WISSKAL
Electronic Contact
CLEANER & LUBRICANT

- Cleans Contact Points and Tuners Instantly
- Lubricates Tuners and Controls
- Eliminates Noises and Scratches
- Restores Carbon Controls
- Longer lasting protection for Radio-TV equipment

THE SCIENTIFIC FORMULA . . . THAT CLEANS AND LUBRICATES!
USE EITHER METHOD TO APPLY . . .
Squeeze Bottle or Brush Bottle — supplied with each qt. can. Spout provided.

with 2 REFILL DISPENSERS FREE!
Squeeze Bottle and Glass Bottle with Brush

LIST PRICE (with free bottles) \$4.80
Quart Can

Sold through
local
distributors
everywhere!

MAIL
ORDERS
PROMPTLY
FILLED.



WORKMAN TV INC.

309 QUEEN ANNE ROAD, TEANECK, N.J.

*Pat. Pend.

ONLY

\$495

+ Ppd.
or C.O.D.
+ Chgs.



THE NEW TV DYNATRACER

- TRACES TV SIGNALS AND VOLTAGES
- LOCATES DEFECTIVE COMPONENTS
- REQUIRES NO ADDITIONAL EQUIPMENT

This sensationally new piece of test equipment is ideal for troubleshooting television sets in the home or in the shop. The "DYNATRACER" will out-perform more expensive testers and should pay for itself on the very first repair.

A Must for Every TV Technician

SPECIFICATIONS: The "DYNATRACER" is a self-powered quality test instrument designed to trace TV signals through any Video, Sound, Sync, AFC, Horizontal or Vertical Sweep Circuit—will isolate trouble to a stage or component.

ADDED FEATURE: The "DYNATRACER" will also trace voltages (50/500 V. AC/DC) and instantly locate open, shorted, intermittent or leaky (up to 20 MEGOHMS) condensers, resistors, coils, XFormers, etc.

Instruction and Trouble-Shooting Book Enclosed
10 DAY MONEY-BACK GUARANTEE

Cut out advertisement . . . attach name and address with \$5.00 bill, check or money order and mail to

Century

ELECTRONICS CO.

211-04 99th Ave., Dept. 501
Queens Village, N. Y.

**GET THIS
FOLDING TABLE
FREE!**
with purchase of 100 tubes

FROM
**PARTS JOBBERS
DISPLAYING
CERTIFIED TUBES**

Your parts jobber is celebrating taking on high-quality, low-price **CERTIFIED TUBES** by giving away this valuable aluminum table with every purchase of 100 receiving tubes. Unconditional 1-year replacement—and priced to save you real money. Get your tubes and table today!

**CERTIFIED
TUBES**



**GENUINE \$21.95
FOLD-A-WAY ALUMINUM
TABLE . . . 1000 USES**

As nationally-advertised weighs only 19 lbs., holds over 1,000 lbs. Folds to fit in car or closet, opens to 60" x 24" top. Serves 8 for dining, picnics, etc. Perfect work table! Guaranteed by Good Housekeeping!

At Your Parts Jobber or Write to
CERTIFIED TUBE CO.

PHILA. 40, PA.

**Check THESE N. J. R. T. TUBE PRICES
70% to 90% OFF LIST**

Guarantee

**ALL NJRT TUBES
ARE BRAND NEW
AND FULLY
GUARANTEED FOR
ONE YEAR**

Type	Price	Type	Price	Type	Price	Type	Price	Type	Price
1A7GT	.45	6AK5	.75	6L6	.62	12BA7	.57	35A5	.49
1B3GT	.67	6AL5	.37	6R7	.49	12BE6	.41	35B5	.38
1H5GT	.38	6AQ5	.37	6S4	.38	12BH7	.65	35C5	.38
1L4	.50	6AQ6	.36	6S8GT	.51	12BY7	.65	35L6GT	.45
1N5GT	.62	6AT6	.37	6SA7GT	.41	12BZ7	.65	35W4	.37
1R5	.48	6AU4GT	.70	6SD7GT	.39	12SA7	.58	35Z3	.43
1S5	.40	6AU6	.40	6SK7GT	.39	12SK7	.58	35Z5GT	.45
1T4	.48	6AV6	.37	6SL7GT	.49	12SL7GT	.49	42	.40
1U4	.48	6AX4GT	.55	6SN7GT	.50	12SN7GT	.50	43	.53
1U5	.40	6BA6	.40	6SQ7GT	.37	12SQ7	.55	45	.53
1X2	.65	6BA7	.57	6T8	.57	12SR7met	.55	50B5	.41
3A4	.43	6BC5	.49	6U8	.59	12V6GT	.50	50C5	.41
3L4F4	.49	6BD6	.45	6V6GT	.33	19B6G6	1.15	50L6GT	.59
3Q4	.48	6BE6	.37	6W4GT	.42	19T8	.75	70L7GT	1.07
3Q5GT	.48	6BG6G	1.20	6W6GT	.45	25BQ6GT	.75	76	.42
3S4	.48	6BH6	.45	6X4	.35	25L6GT	.40	117Z3	.39
3V4	.50	6BJ6	.41	6X5GT	.35	25W4GT	.45	117L7GT	1.19
5A2A	.50	6BK7	.89	7E6	.35	25Z6	.37	807	1.25
5U4G	.55	6BL7GT	.65	7F8	.63				
5Y3GT	.39	6BQ6GT	.70	12AL5	.40				
5Z3	.45	6BQ7A	.92	12AT6	.35				
5Y4G	.39	6BZ7	.95	12AT7	.65				
6A3	.57	6C4	.39	12AU6	.38				
6A6	.49	6CB6	.45	12AU7	.55				
6AB4	.42	6CD6G	1.15	12AV6	.50				
6AF4	.92	6F6	.45	12AV7	.60				
6AF6	.75	6J5	.40	12AX4GT	.55				
6AG5	.47	6J6	.50	12AX7	.55				
6AJ5	.73	6K6GT	.37	12BA6	.40				

**T.V. PIX TUBE
BRIGHTENER..... \$1.39**

**HI PO TV RECTIFIER TUBE
Replaces 5U4G, lasts longer.
Makes picture
brighter, larger \$1.39**

FREE FIVE 1L4 TUBES INDIVIDUALLY CARTONED LIST \$11.25 WITH EVERY ORDER OF \$25.00 OR MORE.

Many 7 volt types not listed. All tubes individually boxed. For orders under \$10 add \$1 handling charge. Tubes offered subject to prior sale. Prices subject to change. All orders shipped F.O.B. 2% discount if full remittance accompanies order. 25% deposit on c.o.d. shipments.

SEND FOR FREE TUBE LISTING.



NEW JERSEY TELEVISION SUPPLY CO.

Sole Distributor of NJRT Tubes

906 WESTFIELD AVE., ELIZABETH, N. J. EL. 3-6166

Keep in Public Eye

(Continued from page 41)

feel that classified directories and newspapers are tops in advertising, many swear by bus and car signs. They feel that they get a high degree of firm identification through repetition among the riders who are exposed to the signs daily. One mid-western firm claims excellent results from space used on the backs of benches at the local bus station. Certainly, it will be wise for any technician who has not already done so, to look into the car-bus sign proposition.

Now we come to still another form of advertising, and this is, believe it or not, for free! We refer to signed articles in newspapers contributed by technicians. Don't throw up your hands, fellows, it can be done—if you are a skilled technician, you can do it.

It's like this. Newspapers in your locality are always on the lookout for local-color articles. And you may be the man who can furnish the kind of stuff they'll use. Try it and be surprised.

If you can write with ease, send in a "technical" piece written in layman's language. For instance, "TV Reception Conditions in Woodville a Challenge." Then state the reasons why so many residents are experiencing difficulty, and what the local technicians are doing to correct the situation. The editors will welcome such stuff; you'll be performing an unselfish service to the community, and you'll gain recognition and prestige into the bargain. If you find it difficult to write the thing, jot down some notes and give them to a reporter—or simply talk with the guy—and he'll dress the piece up for you.

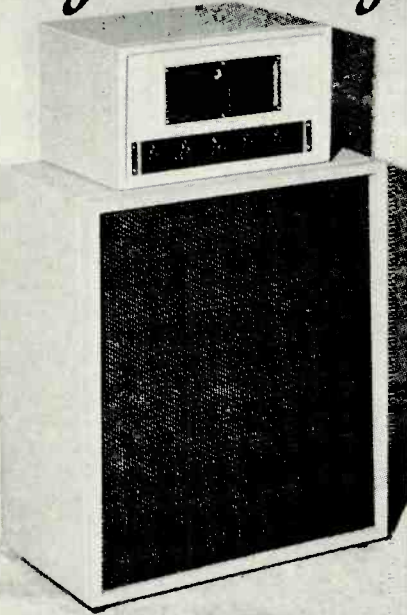
If you are a good speaker, you can keep your name in front of the public through talks before local groups. Just about any civic organization you can think of in your community will welcome you right now, if you can get up before them and talk about that magic subject—color TV.

Promote your business by effective advertising and publicity—it's as important as doing an A-1 service job.

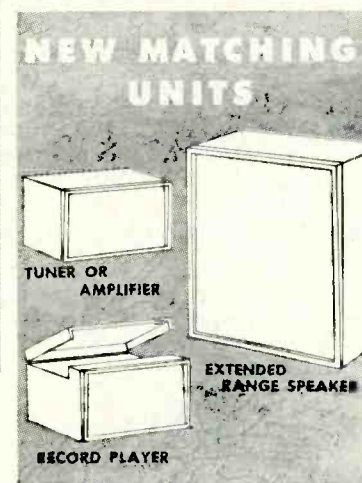
**TECHNICIAN BUYERS
DIRECTORY**

Starts on page 83

High Fidelity



at moderate cost



A complete ensemble of 3 cabinets—now only a fraction of previous cost. Handsome mahogany or blonde leatherette (same price). Sleek modern design with extended top and slanted sides. Carefully built with "Craftsmanship in Cabinets."

DBR-2 Speaker Cabinet—for use as two-way, infinite baffle, or bass reflex systemNet \$34.80

UC-1 Takes most any tuner or amplifier on the market.....Net \$14.40

UC-2 For Record Player. Inside space 16½" W. x 9½" H. x 14" D. Net \$15.90

Craftsmanship in Cabinets



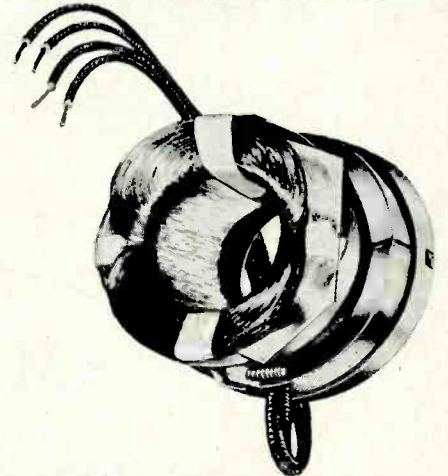
Chicago Parts Show

(Continued from page 43)

- NATIONAL VIDEO CORP., Room 534A
- NEWCOMB AUDIO PRODS., Rms 539-553
- NEWCASTLE FABRICS, Booth 785
- OHMITE MFG. CO., Booth 410
- OXFORD ELEC. CORP., Booth 113, Room 557A
- ORRADIO INDUSTRIES, Room 665
- PAR-METAL PRODS., Booth 114
- PEERLESS PRODUCTS DIV., Booth 577
- PENN TELEVISION PRODUCTS, Booth 203, Room 636
- PENTRON CORP., Booth 870, Rooms 520A, 521A
- PERMA-POWER CO., Booth 579
- PERMOFLUX CORP., Booth 578, Rooms 532A, 533A
- PERMO, INC., Booth 414
- PHILMORE MFG. CO., Booth 311, Room 529
- PICKERING & CO., Room 523
- PLASTOID CORP., Booth 787
- POTTER & BRUMFIELD, Booth 131, Room 612
- PRECISE DEVELOPMENT CORP., Booth 130
- PRECISION APPARATUS CO., Booth 413, Room 507
- PREMIER METAL PRODUCTS, Booth 10
- PRESTO RECORDING CORP., Room 502
- PYRAMID ELECTRIC CO., Booth 417
- QUAM-NICHOLS CO., Booth 401
- QUIETROLE CO., Room 648
- Q-LINE MFG. CORP., Room 617
- RACON ELECTRIC CO., Booth 310
- RADELCO MANUFACTURING CO., Booth 23
- RADIART CORP., Booth 213
- RADIO CITY PRODUCTS CO., Booth 210, Room 657A
- RADIO CORP. OF AMER., Booth 305, Rooms 628, 629
- RADIO CRAFTSMEN, INC., Room 605A
- RADIO MATERIALS CORP., Room 617A
- RADIO MERCH. SALES, Booth 135, Rooms 536A, 537A
- RADIO RECEPTOR CO., INC., Booth 590
- RADION CORP., Rooms 635A, 636A
- RAM ELECTRONICS CO., Room 509
- RAULAND-BORG CORP., Rooms 542A, 544A
- RAYTHEON MFG. CO., Booth 422
- RECOTON CORP., Booth 221
- REEVES SOUNDRAFT CORP., Booth 117
- REGENCY DIVISION, Booth 876, Room 547
- REGO INSULATED WIRE CO., Booth 122, Room 660A
- REK-O-KUT CO., Room 522
- JOHN F. RIDER PUBLISHER, INC., Booth 317
- RIVER EDGE INDUSTRIES, Room 561
- ROCKBAR CORP., Booth 205
- ROHN MFG. CO., Booth 14, Room 616A
- RYTEL ELECTRONICS MFG. CO., Booth 206
- HOWARD W. SAMS & CO., Booth 407
- SAM FERNANDO ELEC. MFG., Booth 27
- SANGAMO ELECTRIC CO., Booth 776, Room 553A
- SHURE BROTHERS, INC., Booth 215, Room 516
- SIMPSON ELECTRIC CO., Booth 679, Room 539A
- MARK SIMPSON MFG. CO., Booth 109, Rooms 605-607
- SKYLINE MFG. CO., Room 653
- HERMAN H. SMITH, INC., Booth 686
- SNYDER MFG. CO., Booth 308
- SOLA ELECTRIC CO., Booth 687
- SONAR RADIO CORP., Room 603A
- SONOTONE CORP., Room 618A
- SOUTH RIVER METAL PRODS., Booth 774, Room 652A
- SPIRLING PRODUCTS CO., Booth 127, Room 513
- SPRAGUE PRODUCTS CO., Booth 684
- STANDARD COIL PRODS., Booth 211
- STANDARD ELECTRICAL PRODS., Booth 120
- STEPHENS MFG. CO., Booth 890, Room 664A
- STEVENS WALDEN, INC., Booth 7
- STEWART WARNER CO., Rooms 656-657
- STROMBERG-CARLSON CO., Room 600
- SUTTON ELECTRONICS CO., Room 660
- SWITCHCRAFT, INC., Booth 126
- SYLVANIA ELEC. PRODS., Booth 676, Rms 647A-648A
- TALK-A-PHONE CO., Booth 129, Rooms 601, 602
- SARKES TARZIAN, INC., Room 626
- TECH-MASTER PRODS., Rooms 658A-659A
- TECHNICAL APPLIANCE CORP., Booth 21
- TELECTROSONIC CORP., Room 621
- TELE-EX-PAND PRODS., Booth 1
- TELE-MATIC INDUSTRIES, Booth 682
- TELEX, INC., Booth 12
- TELREX, INC., Booth 675
- TERADO CO., Booth 13
- THOMAS ELECTRONICS, Booth 133
- THORDARSON-MEISSNER, Booth 576, Room 610
- TRANSISTOR PRODS., Booth 786
- TRIAD TRANSFORMER CORP., Booth 572, Room 656A
- TRICRAFT PRODUCTS, Booth 677
- TRIMM, INC., Booth 319
- TRIO MFG. CO., Booth 871, Rooms 634-635
- TRIPLETT ELECTRICAL INSTR. CO., Booth 585
- TUNG SOL ELECTRIC, Booth 106
- TV PRODUCTS, Booth 103
- TURNER CO., Booth 128
- UNGAR ELECTRIC TOOLS, Booth 405
- UNITED CATALOG PUBLISHER, Booth 571
- UNITED TRANS. CO., Booth 307, Rooms 631A-632A
- UNIVERSITY LOUDSPEAKERS, Booth 775, Room 519A
- UTAH RADIO PRODS., Booth 2, Room 560
- VACO PRODUCTS CO., Booth 219
- VAN CLEEF BROTHERS, INC., Booth 116
- VIDAIRE ELECTRONICS, Booth 780
- V-M CORP., Booth 584
- WALDOM ELECTRONICS, Booth 582, Rooms 619A-620A
- P. WALL MFG. CO., Booth 793
- WALLACE'S TELAIDES, Room 646
- WALSCO ELECTRONICS CORP., Booth 685
- WARD LEONARD ELECTRIC CO., Booth 419
- WARD PRODS. CORP., Booth 411, Room 637
- WEBSTER-CHICAGO CORP., Room 534
- WEBSTER ELECTRIC CO., Booth 688
- WELLER ELECTRIC CORP., Booth 306
- WEN PRODUCTS, INC., Room 602A
- WESTINGHOUSE ELEC., Booth 781, Rooms 643A-644A
- WESTON ELECTRICAL INSTR., Booth 420, Room 615A
- WILCOX-GAY CORP., Booth 673
- G. F. WRIGHT STEEL CORP., Booth 882
- XCELITE, INC., Booth 592

Built for SERVICE

Tired of Callbacks?



Next time use RCA yokes

Thousands of servicemen have learned that it pays in the long run to use RCA deflecting yokes for all their replacement jobs . . . because they know these yokes are *standard equipment* in many makes of TV sets . . . and best fitted to restore original performance.

Remember . . . RCA deflecting yokes set the engineering standards of the field . . . and there's a type for virtually every replacement need:—

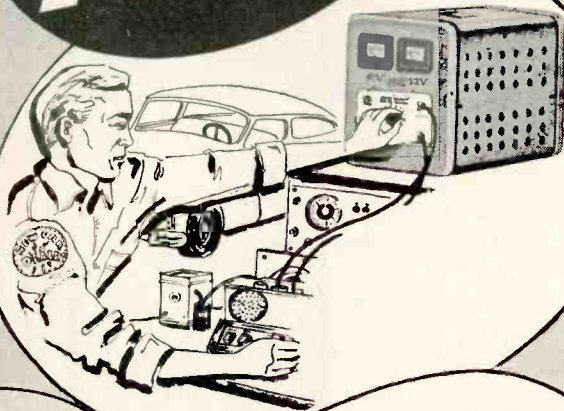
201D12	8.3 mh, 57°
201D2	8.3 mh, 50°
207D1	8.4 mh, 57°
206D1	10.3 mh, 70°
219D1	11.7 mh, 90°
205D1	12.5 mh, 57°
209D1	13.3 mh, 70°
211D2	13.3 mh, 70°
222D1	18.5 mh, 70°
214D1	28.5 mh, 70°

RCA Deflecting Yokes are listed in Photofacts and Counter Facts.



RADIO CORPORATION of AMERICA
ELECTRONIC COMPONENTS CAMDEN, N.J.

ATR



"A" BATTERY ELIMINATORS
Makes it easy to...

for Demonstrating and Testing Auto Radios



6 VOLT OR 12 VOLT!
 6 or 12 volt D. C. combination output available by means of simple toggle switching arrangement, properly safeguarded to prevent accidental switching.

New Models... Designed for testing D. C. Electrical Apparatus on Regular A. C. lines. Equipped with Full-Wave Dry Disc Type Rectifier, Assuring Noise-less, Interference-Free Operation and Extreme Long Life and Reliability.

TYPE	INPUT A. C. Volts 60 Cycles	D. C. OUTPUT			SHIPPING WEIGHT	USER PRICE
		VOLTS	AMPERES Cont. Int.			
610-Elid	110 volts	6	10	20	22 lbs.	\$35.64
610C-Elid	110	6 —or— 12	10 —or— 6	20 —or— 12	22	39.95
620C-Elir	110	6 —or— 12	20 —or— 10	40 —or— 20	33	56.34

\$35.64
AND UP

USER PRICE

See your jobber or write factory

✓ NEW MODELS ✓ NEW DESIGNS ✓ NEW LITERATURE

"A" Battery Eliminators, DC-AC Inverters, Auto Radio Vibrators

ATR

AMERICAN TELEVISION & RADIO CO.

Quality Products Since 1931

SAINT PAUL 1, MINNESOTA—U. S. A.

A quick and easy way to GREATER EXPERTNESS IN TV SERVICING

Magnavox

TELEVISION SERVICE COURSE

NOW AVAILABLE TO ALL PROFESSIONAL SERVICEMEN

Here is a high speed, simplified course in television **KNOW HOW**—for advanced technicians as well as juniors. No equations! 100% descriptive and explanatory, with all necessary illustrations and schematics. Theory is made easy. Problems are explained. Questions and answers with each lesson. There are 12 sections, over 200 pages. You get them all at once at a single low cost. Make this small investment in your future.

MAIL THIS COUPON TODAY

The Magnavox Company, Service Department
 Fort Wayne 4, Indiana

Send me one complete Magnavox Television Service Course.
 I enclose () Money order () Check for \$10.00.

Name

Street Address

City Zone State

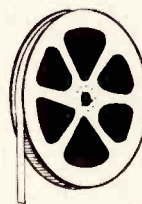
BULK Recording tape (plastic base) (BRAND NEW)

Fill the demand for low cost tape
 without hurting your "name brand"
 Sales!

*1200 ft. wound on plastic
 reels

QUANTITY

- 1.79 (1 to 23 reels)
- 1.74 (24-47 reels)
- 1.69 (48-95 reels)
- 1.64 (96-143 reels)
- 1.59 (144-499 reels)
- 1.54 (500-999 reels)
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ERIE components are stocked at leading electronic distributors everywhere.

UHF Converter Tests

(Continued from page 35)
individual cases. Simply adjust it to 13 or 14 channels lower than the setting of converter A, depending upon whether output from A falls at Channel 5 or 6.

In addition to pinpointing a dead oscillator, the set-up described can be used for revealing oscillators that drop out of operation at certain frequencies in their range, as well as intermittent and microphonic oscillators. These conditions are very difficult to localize in UHF tuners by other means.

Localizing Microphonics. With respect to checking microphonics—it can prove very difficult to localize the source of trouble in a microphonic converter. Usually the trouble lies in either the UHF preselector tank circuit, or in the UHF oscillator (tube or tank circuit).

A practical way of determining which of the two stages is at fault is to connect the converter under test into the set-up shown in Fig. 1. Gently tap the tubes or other components present, watching for an erratic reading on the field strength meter. If a TV set is being used in place of the field strength meter (a better test procedure) listen for a "bonging" sound when the volume control is turned up.

If any uncertainty remains, short out the preselector circuit and tap the oscillator tube and its associated components. If the microphonic is no longer audible, the trouble lies in the preselector circuit; if the "bonging" can still be heard, the oscillator stage is no doubt the source of the defect.

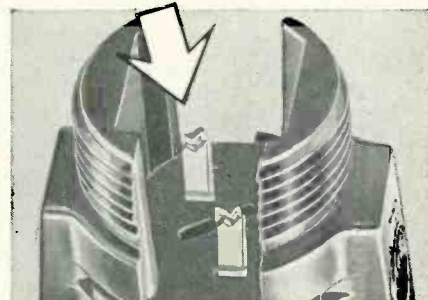
Phono Stylus Check

Newest wrinkle in checking condition of phonograph needles permits analysis to be made without even removing the stylus from the tone arm. The Pres-Test Card (Miller Mfg. Co., Libertyville, Ill.) is deposited on the phono turntable. The tone arm is placed over the card. A slight pressure on the arm causes the stylus to make an impression on the card's metallic paper disc. The "fingerprint" card is sent to the Miller Company, where it is examined microscopically. The card is returned with a lab report on the needle's condition. Cards are available free from the manufacturer; a charge of 25 cents is made for the report.

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234A1

Screw Type



235A1

Strap Type



Accommodate Tubular, Oval, Foam, and Jacketed UHF Lines. Low-Capacitance design. Standing-wave ratio approximately 2:1 at 800 Mc. Low loss—approximately 1 db at 800 Mc. Listed by Underwriter Laboratories, Inc.

RCA VHF Lightning Arresters



215X1

Screw Type

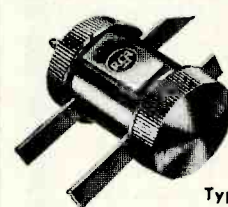


214X1

Strap Type

Low-loss, fringe area design . . . weather-resistant . . . continually dissipate static charges . . . do not unbalance line. Listed by Underwriter Laboratories, Inc.

RCA TV Set Coupler. Non-inductive type . . .



Type 240A1

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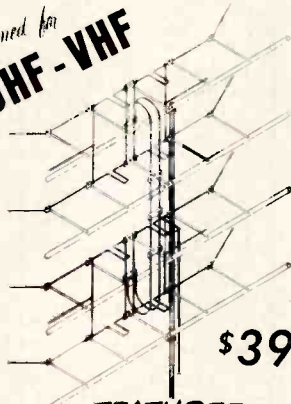
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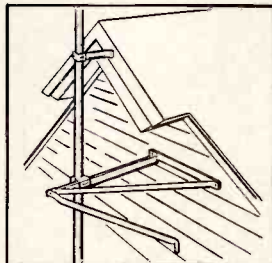
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IRC COIL BULLETIN: The recently expanded line of insulated chokes in molded plastic housings is described in *Bulletin H-1*. A wide range of sizes and characteristics are offered for such applications as: filament chokes, plate loads, wave traps, parasitic suppressors, line terminating impedances, and chokes for cathode, antenna and grid circuits. International Resistance Co., 401 N. Broad St., Philadelphia 8, Penna.

INDUSTRIAL CONDENSER BROCHURE: Complete line of tubular oil-filled capacitors, together with physical and electrical characteristics, is described in a 4-page leaflet. Industrial Condenser Corp., Dept. TNN, 3243 N. California Ave., Chicago 18, Ill.

RMS NEW-ITEM FOLDER: A UHF antenna, lightning arrestor, low-loss standoffs, window signal feed-through and a tube puller are described in a 6-page leaflet. RMS, Dept. C, 2016 Bronxdale Ave., New York 62, N. Y.

ASTRON CAPACITOR MANUAL: In 3 main groupings—electrolytic, paper, and metallized paper—detailed specifications are presented for a full line of capacitors for radio, TV and general electronic applications. *Catalog AC-4*; 50 pp. Available by request on letterhead to Astron Corp., 255 Grant Ave., East Newark, N. J.

SHALLCROSS RESISTOR BULLETIN: Specifications and performance data are presented for P Type encapsulated wirewound precision resistors in *Engineering Bulletin L-30*. Available on letterhead request. Shallcross Mfg. Co., Collingdale, Penna.

MALLORY BATTERY LEAFLET: Mercury cells and batteries, for use in miniaturized circuits or others where space is limited, including transistor power supplies, are described in a 6-page *Technical Information Bulletin*. Battery Div., P. R. Mallory & Co., Inc., North Tarrytown, N. Y.

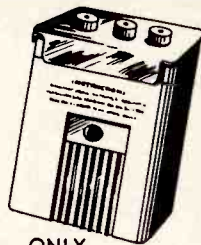
RIDER PUBLICATIONS CATALOG: This 25th-anniversary publication, the *Spring 1954 Catalog*, lists over 70 volumes covering various phases of radio, TV and electronics. Offers excerpts, illustrations, detailed descriptions and prices. Listing includes forthcoming and recently released books. 32 pp. Available free. John F. Rider Publisher, Inc., Box RC-54, 480 Canal St., New York 13, N. Y.

HICKOK SCOPE HANDBOOK: Explanation and illustrations of how a scope works, and tips on its many applications, are included in *Cathode Ray Oscilloscopes*, a 24-page handbook. Specifications and descriptions are presented for the manufacturer's line of oscilloscopes. Free on mail request. Hickok Electrical Instrument Co., 10523 Dupont Ave., Cleveland 8, Ohio.

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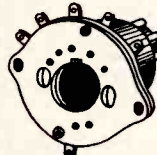
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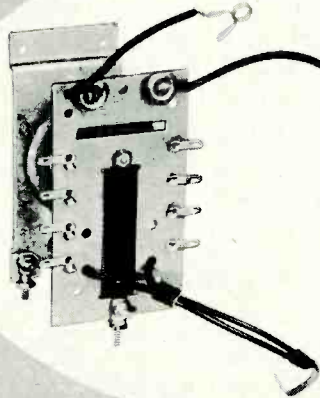
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BELLEVUE-SNYDER MAST & TUBING CATALOG: This recently revised catalog covers a complete line of masts, sectional masts and steel and aluminum tubing, in a wide range of lengths, gauges and diameters. Write to Dick Morris, Sales Mgr., Bellevue Tube Mill, Inc. (affil. of Snyder Mfg. Co.), P. O. Box 4465, Philadelphia 40, Penna.

SHURE MAGNETIC RECORDING HEAD REPLACEMENT CHART: Exact replacements for original magnetic heads in tape and wire recorders by various makers are listed and illustrated. Physical dimensions and technical data are included. Copies available on request. Shure Bros., 225 W. Huron St., Chicago 10, Ill.

K-F PRECISION RESISTOR LEAFLET: A series of 9 precision types, providing standard values from 0.1 ohm to 1 meg in accuracies of 1, 0.5 and 0.1 percent, are illustrated and described. Technical and physical specifications are presented in tabular form. K-F Development Co., 2711 Spring St., Redwood City, Calif.

THORDARSON XFORMER-REACTOR DATA: Catalog 400-L provides a new listing of Thordarson's line of transformers and reactors. Complete TV replacement section and output transformer chart included. Cross-reference list is incorporated. Thordarson-Meissner, 7th and Belmont, Mt. Carmel, Ill.

WARD AUTO AERIAL FOLDER: Complete description of the manufacturer's line of automobile aerials, connecting cables, floor and counter display racks and promotional material; 4 pp. Ward Products Corp., 1148 Euclid Ave., Cleveland, Ohio.

DAVEN PRECISION RESISTOR MANUAL: New publication presents basic resistor data and design information, in addition to detailed specifications covering all Daven types. Illustrated, 32 pp. Daven Co., 191 Central Ave., Newark, N. J.

HEWLETT-PACKARD INDEX: Cross-referenced by title of article, subject and model numbers of instruments covered, this 4-page index lists contents of all copies of Hewlett-Packard Journal from Sept. 1949 to Aug. 1953. Available on request made on business letterhead. Hewlett-Packard Co., 395 Mill Road, Palo Alto, Calif.

XCELITE TOOL CATALOG: Convenient front index lists screw-drivers, nut drivers, pliers and other tools. Screw driver points and nut driver sockets are shown life-size, with listing of available blade lengths. New tools and tool displays are described. Available to technicians, dealers, mechanics, jobbers, on written request. Xcelite, Inc., Orchard Park, N. Y.

NEW BOOKS on page 78

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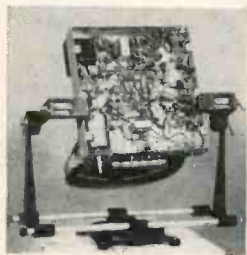
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TV MANUFACTURERS' RECEIVER TROUBLE CURES, VOL. 5. Edited by Milton S. Snitzer. Published by John F. Rider Publisher, Inc., 480 Canal Street, New York 13, N. Y. 120 pages; \$1.80, paper-bound.

Like its predecessors, this volume presents cures for specific troubles on particular models, developed by the manufacturer to take care of complaints that arise in the field. Twelve manufacturers, from Sparton to Zenith, are covered in this fifth volume of the alphabetical series. Book includes a symptom index.

ELEMENTS OF MATHEMATICS FOR RADIO, TELEVISION AND ELECTRONICS. By B. Fischer and H. Jacobs. Published by The Macmillan Company, 60 Fifth Avenue, New York 11, N. Y. 580 pages; \$7.20, hard cover.

Useful as a beginner's text or reference work, this book incorporates practical mathematics, useful formulas and slide rule techniques, in a functional approach to the subject. Specific applications, rather than general techniques, are covered. Sample topics: Series circuits, a-c circuits, reactance and resistance, meters, time constants, square and sine waves, voltage dividers, decibels, business mathematics.

SPECIALIZED HOME AND PORTABLE RADIO MANUAL, VOL. 8. Published by John F. Rider Publisher, Inc., 480 Canal Street, New York 13, N. Y. 96 pages; \$1.65, paperbound.

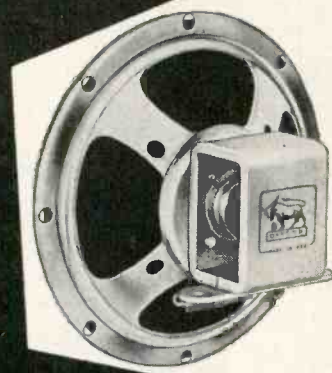
This book offers complete schematics, service data and parts lists for dozens of RCA home and portable radios manufactured between June 1951 and December 1953. Vol. 8 is one of a series of 11 that covers 49 different manufacturers alphabetically. Some manuals cover as many as 7 manufacturers. Except for volume 7, all in the series are 96 pages long and sell for \$1.65 each. Vol. 7 (Philco) contains 192 pages and is priced at \$2.40.

INTRODUCTION TO COLOR TELEVISION. By M. Kaufman and H. Thomas. Published by John F. Rider Publisher, Inc., 480 Canal Street, New York 13, N. Y. 150 pages; \$2.10, paperbound.

A discussion of color fundamentals in general and the NTSC color TV system in particular is followed by a survey of presently available tricolor picture tubes. Other chapters cover the color receiver and receiver adjustments. Single-gun as well as 3-gun tubes are discussed, together with associated circuitry for both. Illustrations, some in color, include receiver schematics. Service technicians' answers for laymen's questions on color are presented.

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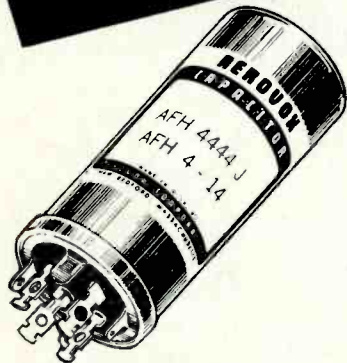
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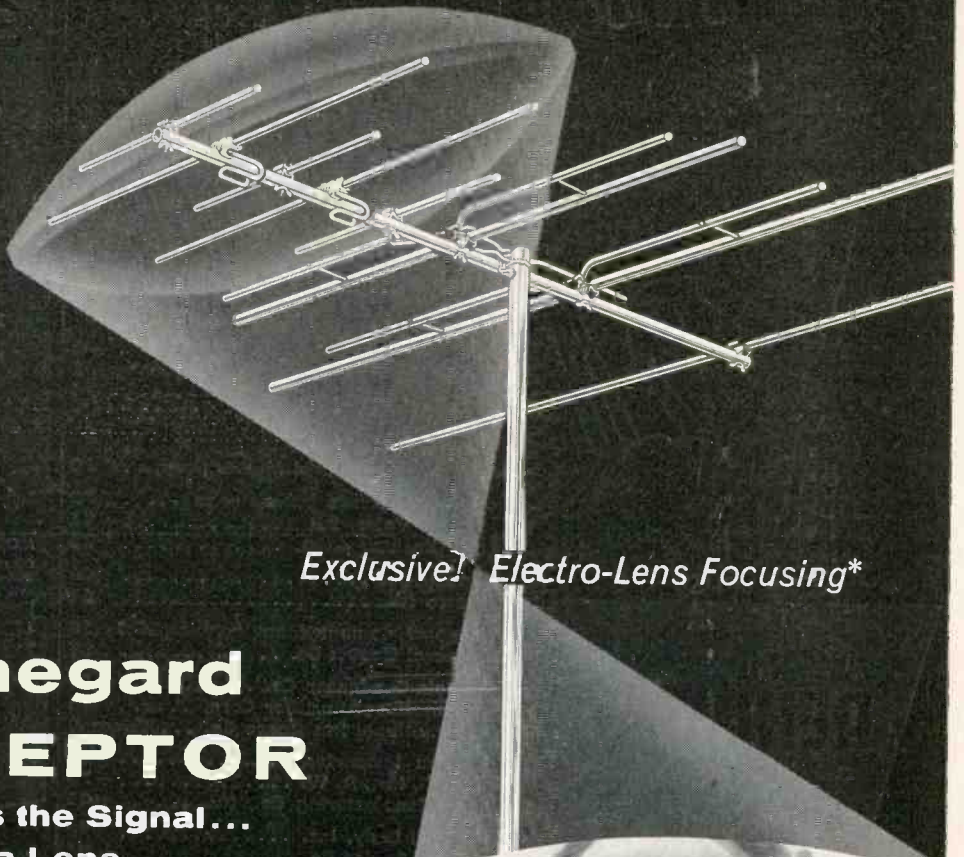
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Compiled by the editors of **TECHNICIAN**

**Symbols showing type of representative
in localizer section**

DS	Distributor Sales
IS	Industrial Sales
IDS	Indus & Distr Sales
D	Distributor
BO	Branch Office
GV	Government Sales
R	Representative
SE	Sales Engineer

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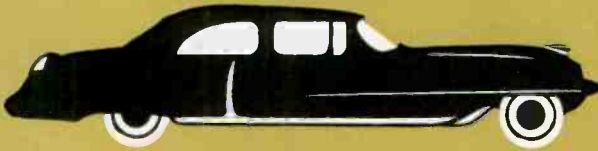
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Product Finding Index

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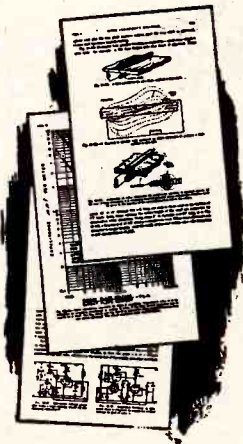
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Automatic tuning mechanism	7	F	Cells, photoelectric	15	B	Drivers, nut, screw	24	P	Limiters, noise	9	F
Baffles & Enclosures, speaker	21	B	Circuit Breakers	11	J	Drivers, speaker	21	L	Line Cords, resistor	18	C
Ballasts	11	C	Checkers, condenser	23	F	Drives, phono	14	I	Loudspeaker Parts & Accessories	21	V
Bases, chassis	11	D	Checkers, transformer	23	G	Dynamotors	13	E	Loudspeakers	21	U
Bases, phonograph mounting	14	B	Checkers, vibrator	23	H	Electors, fuse	24	Q	Lubricants	11	AC
Batteries, dry cell radio	2	B	Chemicals, Radio & TV	24	H	Equalizers, phono pre-amp	14	J	Magnets, TV beam centering	26	D
Batteries, flashlight	2	B	Chokes, AF	6	A	Equalizers, tone	21	M	Magnets, TV focus	26	E
Batteries, hearing aid	2	C	Chokes, filter	6	B	Escutcheons	11	P	Magnets, TV ion trap	26	F
Batteries, ignition	2	D	Chokes, power filter	6	C	Filters, audio	9	A	Masks	26	G
Batteries, storage	2	E	Chokes, RF	6	D	Filters, bandpass	9	B	Megaphones	21	W
Battery Chargers	2	F	Cleaner, TV lens	24	I	Filters, interference	9	C	Meters, audio	23	S
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Bits, drill	24	D	Coils, IF, oscillator & RF	6	G	Fuse Holders	10	E	Micrometers	24	T
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Boosters, TV	7	B	Compensators, record	14	H	Generators, color signal	23	AK	Motors, antenna rotating	13	D
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Cabinets, four drawer	4	C	Converters, UHF-TV	7	D	Hammers	24	R	Needles, playback	14	P
Cabinets, metal	4	D	Converters & Inverters DC to AC	16	B	Handsets, phone	20	N	Ohmmeters	23	AA
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Cabinets, resistor	4	F	Cords, lacing	27	K	Heads, recording, magnetic	21	P	Oscillators, VFO	23	AB
Cabinets, TV Chassis	4	G	Calibrators, frequency	23	D	Horns, speaker	21	E	Oscilloscopes, cathode ray	23	AC
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Cable, auto radio control	27	B	Capacitors, buffer	5	A	Inductors, toroid	6	L	Pads, C & L	11	AF
Cable, coaxial	27	C	Capacitors, ceramic	5	B	Inductors, variable	6	M	Pads, H, T, etc.	18	D
Cable, intercom	27	D	Capacitors, dry electrolytic	5	C	Inserts, 45 RPM	14	L			
Cable, microphone	27	E	Capacitors, electrolytic, wet	5	D	Insulation, spagheti sleeving	11	W			
Cable, phonograph	27	F	Capacitors, mica	5	M	Insulators, antenna	1	O			
Cable, shielded	27	G	Capacitors, molded, paper & wax	5	E						
Cable, telephone	27	H	Capacitors, oil-filled	5	F						
Cable, wire	27	I	Capacitors, paper metallized	5	G						
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Product	Section No.	Code Letter	Product	Section No.	Code Letter
Paint, Lacquer & Varnish	11	AG	Suppressors	5	J
Panels	11	AH	Suppressors, auto ignition	9	G
Parts, phono, misc.	14	Q	Suppressors, parasitic	9	H
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Pickup Arms	14	A	Switches, coaxial	22	B
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Cathode Ray Tubes	Principles of Oscillators
Special Purpose Tubes	Principles of Modulation
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1954 TECHNICIAN BUYERS DIRECTORY

Product Listings

This is a complete listing of all service and replacement products, component parts, equipment, instruments, and materials in the radio-TV-electronic service industry—with the names and addresses of the

companies that make them. Product categories are arranged according to major group headings. Manufacturers are listed alphabetically under these groups.

1—ANTENNAS & ANTENNA ACCESSORIES

- Accessories, antenna, misc. A
 - Antenna Systems, TV amplified . . . B
 - Antenna Systems, TV non-amplified . C
 - Antennas, AM outdoor D
 - Antennas, Auto Radio E
 - Antennas, FM F
 - Antennas, loop, AM G
 - Antennas, loopstick H
 - Antennas, TV, UHF I
 - Antennas, TV, VHF J
 - Antennas, window K
 - Connectors, antenna L
 - Couplers, 2-set, TV M
 - Equipment, guying N
 - Grounding Equip. (See Sec. 11)
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 - Lightning Arresters P
 - Masts & Towers, antenna Q
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 - Rotators, antenna U
 - Silicone V
 - Strips, lead-in W
 - Switches, antenna X
 - Transformers, antenna Y
 - Whips, antenna, mobile Z
 - Wire, grounding TV (see Sec. 27)
 - Wire, guy (see Sec. 27)
- Abel Mfg. Co., 32-20 37 Ave., Long Island City 1, N.Y.—E,I,J
 Acme Tool & Specialties Co., 224 N. Loomis St., Chicago 7, Ill.—I
 Admiral Corp., 3800 Cortland St., Chicago 47, Ill.—A,B,C,I,J,L,M,O,P,Q,R,S,W,X,Y
 Advance Electronics Co., 8510 North End Ave., Oak Park 37, Mich.—A,F,I,J
 Aerolite Electronics, 507 26th St., Union City, N.J.—A,H,M,P,X
 Air-Up Tower Corp., 350 E. Broadway, Muskegon Heights, Mich.—Q
 All Channel Antenna Corp., 47-39 49th St., Woodside 77, N.Y.—A,F,I,J
 Alliance Mfg., Lake Park Blvd., Alliance, Ohio—U
 Alprodcoc, Inc., Mineral Wells, Texas—Q
 American Electronics Co., 1203 Bryant Ave., New York 59, N.Y.—A
 American Phenolic Corp., 1830 S. 54th St., Chicago 50, Ill.—A,F,I,J,M,P,Q,V
 American Radio Hardware Co., 152 MacQueston Pkwy. So., Mt. Vernon, N.Y.—A
 Amplitel, Inc., 362 W. 57 St., New York, N.Y.—B
 Andrew Corp., 363 E. 75 St. Chicago 19, Ill.
 Antenna & Mounting Hardware Co., 9216 Grand Ave., Franklin Park, Ill.—L,M,N
 Antenna Products 3628 N. Lincoln Ave., Chicago 13, Ill.—I,J,Q
 Antenna Specialists Co., 12435 Euclid Ave., Cleveland 6, Ohio—E,Q
 Antennex Co., 4060 Ocean Park Ave., Venice, Calif.—I,J
 A. P. Electro Lab., P.O. Box 862, Union, N.J.—V
 Argyle Electronics Co., 8 W. 18th St., New York 11, N.Y.—O
 Armac Co., P.O. Box 1083, Macon, Ga.—Q
 Baker Mfg. Co., 133 Enterprise St., Evansville, Wisc.—Q
 Barb City Industries, Inc., 1150 S. 4th St., DeKalb, Ill.—I,J
 Baumker Mfg. Co., 3826 Summit St., Toledo 11, Ohio—L,R
 Belnord & Co., 481 Sterling Pl., Brooklyn, N.Y.—E

- Bestcraft Products Co., 626 Broadway, New York 12, N.Y.—I,J
 Best Electronic Corp., 11368 W. Olympic Blvd., Los Angeles 64, Calif.—I,J
 Birnbach Radio Co., 145 Hudson St., New York 13, N.Y.—A,O,P,R,W
 Blaco Mfg. Co., 6541 Euclid Ave., Cleveland 3, Ohio—A
 Blazon Mfg. Co., 6021 Dempster St., Morton Grove, Ill.—L
 Blonder-Tongue Labs., 526 North Ave., Westfield, N.J.—A,B,C,M,S,Y
 Brach Mfg. Corp., 200 Central Ave., Newark 3, N.J.—A,B,C,D,E,F,I,J,K,L,M,S,U,Y
 Bud Radio Inc., 2118 E. 55 St., Cleveland 3, Ohio—A,Q
 Bullet Electronics Corp., 2637 S. Lowell Ave., Springfield, Ill.—A,Q
 Camburn, Inc., 32-40 57th St., Woodside 77, N.Y.—A,C,E,F,I,J,K,L,M,O,P,Q,R
 Camburn Sales & Mfg. Corp., 134 Orchard Ave., Battle Creek, Mich.—A,N,Q,R
 Cass Machine Co., 691 Antoinette St., Detroit 2, Mich.—A,F,I,J,N,O,P,Q,R
 Cayco TV Eng'g. Co., 1904 Mich. Hwy., 139 Benton Harbor, Mich.—A
 CBC Electronics 1310 Calowhill St., Philadelphia 23, Pa.—F,I,J
 Centralab Div., Globe Union, Inc., 900 E. Keefe Ave., Milwaukee 1, Wisc.—A
 Channel Master Corp., Ellenville, N.Y.—A,I,J,Q,R
 Chester Cable Corp., Highview St., Chester, N.Y.—Z
 Clear Beam Antenna Corp., 100 Prospect Ave., Burbank, Calif.—A,F,I,J,M,O,P,Q,R
 Cleveland Electronics, Inc., 6611 Euclid Ave., Cleveland 3, Ohio—I
 Collins Radio Co., Cedar Rapids, Iowa—F
 Colortone Electronics, Inc., 238 William St., New York 38, N.Y.—E
 Commercial Products, 417 Main St., Toledo 5, Ohio—A,N,R
 Constat Laboratories, 214 W. 29 St., New York 1, N.Y.—A,Q,R
 Control Electronics Co., 1925 N. Y. Ave., Huntington Station, N.Y.—I,J
 Cornell-Dubilier Elec. Corp., South Plainfield, N.J.—D,E,F,I,J,K,P,U
 Crown Controls Co., 124 S. Washington St., New Bremen, Ohio—A,N,U
 Danforth Mfg. Co., 531 S. 3rd St., Monmouth, Ill.—I,J,N,Q,R
 Davis Electronics, 4002 Burbank Blvd., Burbank, Calif.—I,J
 Deal Products, Hellertown Rd., MR 37, Easton, Penna.—Q,R
 Di-Co TV & Plastic Co., 322 Boston Post Rd., Milford, Conn.—I,J
 Drake Co. R. L., 18 E. Central Ave., Miamisburg, Ohio—M,Y
 Dualco Co., Box 78, Coal Fork, W. Va.—P
 DuMont Labs, Inc., Allen B., Mobile Comm. Dent., 1600 Main St., Clifton, N.J.—L
 Dunkle Coil Co., 3257 W. 6 St., Los Angeles 6, Calif.
 Easy-Up Tower Co., Racine, Wisc.—N,Q,R
 Elco Corp., 190 W. Glenwood Ave., Philadelphia 19, Pa.—L
 Electro-Voice, Inc., Buchanan, Mich.—T
 Elreco Corp., 2900 Company Ave., Cincinnati 25, Ohio—I,J
 Energy Farm Equipment Co., Monticello, Iowa—Q
 Epco Electronics, Inc., 140 Liberty St., New York 6, N.Y.—A,M,X
 Espey Mfg. Co., 528 E. 72 St., New York 21, N.Y.—F,G,H
 Federal Screw Products, Inc., 224 W. Huron St., Chicago 10, Ill.—A
 Fink Electronics, 518 E. 95th St., Chicago 19, Ill.—I,J
 Finney Co., 4612 St. Clair Ave., Cleveland 3, Ohio—I,J
 Forbes & Wagner, Inc., 339 Central Ave., Silver Creek, N.Y.—H
 Fretco, Inc., 406 N. Craig St., Pittsburgh 13, Pa.—A,B,C,D,F,I,J,K,L,O,Q,R
 Gee-Lar Mfg. Co., 819 Elm St., Rockford, Ill.—A,I,L,M,N,O,P,R,S,X
 General Cement Mfg. Co., 919 Taylor Ave., Rockford, Ill.—A,E,H,I,J,K,L,M,N,O,P,Q,R,S,V,W,X

- Gonset Co., 801 S. Main St., Burbank, Calif.—A,B,C,D,I,J,L,M,N,O,Q,R
 Great Eastern Mfg. Co., 163 Remsen Ave., Brooklyn 12, N.Y.—M
 Hamilton Electronics Corp., 2726 Pratt Ave., Chicago 45, Ill.—M
 Haygren Electronic Mfg. Co., 436 18th St., Brooklyn 15, N.Y.—R
 Hillburn Electronic Products Co., 55 Nassau Ave., Brooklyn 22, N.Y.—G,H,Y
 Hi-Lo TV Antenna Corp., 3540 N. Ravenswood Ave., Chicago 13, Ill.—I,J,K,O,P
 Hi-Par Products Co., 347 Lunenburg St., Fitchburg, Mass.—J
 H. M. H. T.V. Industries, 746 N. Pickering St., Whittier, Calif.—A,L
 Hutch & Son, 125 S. Elizabeth St., Lima, Ohio—Q
 Hy-Lite Antennae, Inc., 242 E. 137th St., New York 51, N.Y.—A,F,I,J,R
 I. E. Mfg., 325 N. Hoyne Ave., Chicago 12, Ill.—A,D,I,J,L,M,O,P,Q,R,S
 Imperial Radar & Wire Corp., 820 E. 233rd St., New York 66, N.Y.—N,O,W
 Industrial Television, Inc., 369 Lexington Ave., Clifton, N.J.—L
 Insuline Corp. America, 186 Granite St., Manchester, N.H.—A,D,E,F,I,J,K,L,M,N,O,P,R,S,W,X,Z
 Isolantite Mfg. Corp., Warren Ave., Stirling, N.J.—O,P
 JaMac Products, 4605 N.E. 118 Ave., Portland 20, Ore.—D,F,I,J,Q
 Job Sales Corp., 2016 Bronxdale Ave., New York 62, N.Y.—U
 Jerrold Electronics Corp., 26 & Dickinson Sts., Philadelphia 46, Pa.—A,B,S,T,Z
 Jewell, Inc., A. W., 32 Broad St., Elyria 1, Ohio—I,J
 JFD Mfg. Co., 6101 16 Ave., Brooklyn 4, N.Y.—A,E,F,G,I,J,K,L,M,N,O,P,Q,R,S,U,W,X,Y
 Johnson Co., E. F., Waseca, Minn.—O
 Jontz Mfg. Co., 1101 McKinley, Mishawaka, Ind.—Q,R
 Jordan Mfg. Co., 1100 W. 78 Hwy., Morrice, Mich.—Q
 Kay-Townes Antenna, 1511 Dean Ave., Rome, Ga.—J
 Kenwood Eng'g. Co., 265 Colfax Ave., Kenilworth, N.J.—Q,R
 K-G Electronics Corp., 2738 No. Sheffield Ave., Chicago 14, Ill.—F,I,J
 LaPointe Electronics, Inc., W. Main St., Rockville, Conn.—F,I,J,M,U
 Leader Electronics, 2925 E. 55th St., Cleveland 27, Ohio—U,X
 Lear, Inc., 11916 W. Pico Blvd., Los Angeles 64, Calif.—O
 Lieco, Inc., 147 Ocean Ave., Lynbrook, N.Y.—L
 Louis Bros., 3543 E. 16th St., Los Angeles 23, Calif.—I,J
 Mark Products Co., 3549 Montrose Ave., Chicago 18, Ill.—A,I,J
 Master Mobile Mounts, Inc., P.O. Box 1817, Los Angeles 36, Calif.—R,Z
 Meritenna Mfg. Co., 120 W. Thomas St., Seattle 99, Wash.—A
 Midwest Naturlite Co., 228 W. Kinzie St., Chicago 10, Ill.—A,F,I,J
 Miller Co., J. W., 5917 S. Main St., Los Angeles 3, Calif.—G,H
 Miller Television Co., 2840 Naomi St., Burbank, Calif.—E,F,I,J,K
 Milner Mfg. Co., 4359 Northview Dr., Jackson, Miss.—Q
 Mi Tee Midget Antenna, High Point, N.C.
 Modern-Aire Mfg. Corp., 4436 W. Roosevelt Rd., Chicago 24, Ill.—A,O,Q,R
 Modern Wire Co., 39-30 Review Ave., Long Island City 1, N.Y.—A,D,P,Q,R,W
 Moore Tower & Equipment Co., 1221 1st Nat'l Bank Bldg., Peoria, Ill.—Q
 Morrow Radio Mfg. Co., 2794 Market St., Salem, Ore.—I,J
 Mosley Electronics, 8622 St. Charles Rock Rd., St. Louis 14, Mo.—A,C,L,M,O,S,X
 Mueller Electric Co., 1583 E. 31st St., Cleveland 14, Ohio—A,O
 Mycalex Corp. of America, 125 Clifton Blvd., Clifton, N.J.—O
 Naer Corp., 11777 Santa Monica Blvd., Los Angeles 25, Calif.—I,O

National Co., 61 Sherman St., Malden, Mass.—O
 National Electric Products Corp., #2 Gateway Center, Pittsburgh 22, Pa.—A,I,J,N,Q,R
 National Electronics of Cleveland, Delco Building, Cleveland, Ohio—I,J
 Neal Electronic Co., 215 S. Green St., Huntsville, Ala.—I,J
 Neo Products Corp., Erie, Mich.—U
 Nicholas Equipment Co., Bellevue, Ohio—U
 Nichols Products Co., 325 W. Main St., Moorestown, N.J.—O
 Nikoh Tube Co., 5000 S. Whipple St., Chicago 32, Ill.—I,J
 Ohio Aerial Co., 4553 Lewis Ave., Toledo 12, Ohio—A
 Parker Metal Goods Co., 161-A Summer St., Worcester 8, Mass.—I,J,R
 Payo Engineering Labs., Box 61, Quincy, Ill.—I,J
 Peerless Products Industries, 812 N. Pulaski Rd., Chicago 51, Ill.—F,I,J
 Penn Boiler & Burner Mfg. Corp., Lancaster, Pa.—Q
 Penn Television Products Co., Allegheny & Trenton Aves., Philadelphia 34, Pa.—I,J,M,X
 Philco Corp., Accessory Div., "A" & Allegheny Ave., Philadelphia 34, Pa.—D,E,F,I,J,N,P,Q,R,S,T,U,X,Y
 Philmore Mfg. Co., 113 University Pl., New York 3, N.Y.—H
 Philson Mfg. Co., 60 Sackett St., Brooklyn 31, N.Y.—A,E,I,J
 Phoenix Electronics, Inc., 50 Island St., Lawrence, Mass.—J
 Pioneer Mfg. Co., Huntley, Ill.—I,J
 Pipestone Sales Co., P.O. Box 311, Pipestone, Minn.—Q
 Plymouth Electronics Corp., 50 Kingsbury St., Worcester 3, Mass.—A,B,C,I,J,M,N,R,T,X
 Porcelain Products, Inc., P.O. Box 300, Findlay, Ohio—O
 Q-Line Mfg. Corp., 1562 61st St., Brooklyn 19, N.Y.—A,C,F,I,J,K,M,O,P,R,T,X,Y
 Radelco Mfg. Co., 7580 Garfield Blvd., Cleveland 25, Ohio—E,I,J,P,Q,R,Z
 Radiart Corp., 3455 Vega Ave., Cleveland 13, Ohio—A,E,F,I,J,P,R,U
 Radio Corp. of America, Eng'g. Products Div., Camden, N.J.—A
 Radio Merchandise Sales, Inc., 2016 Bronxdale Ave., New York 62, N.Y.—A,I,J,K,L,M,N,O,P,Q,R,X
 Radion Corp., 1130 W. Wisconsin Ave., Chicago 14, Ill.—A,D,I,J,P,R,Z
 Ramsey Radio & TV Co., 925 St. Louis Ave., Vandalia, Ill.—Q
 Rohn Mfg. Co., 116 Limestone, Bellevue, Peoria, Ill.—N,Q,R
 Ryan Industries, 10910 S. Vermont Ave., Los Angeles 44, Calif.—A
 Rytel Electronics Mfg. Co., 9820 Irwin Ave., Inglewood 1, Calif.—L
 Sargent-Raymont Co., 1401 Middle Harbor Rd., Oakland 20, Calif.—F
 Saxonburg Ceramics, Saxonburg, Pa.—O
 Saxton Products, Inc., 2101 Grand Concourse, Bronx 53, N.Y.—P
 Scala Radio Co., 2814 19th St., San Francisco 10, Calif.—F,J
 Scranton Aluminum Mfg. Co., 419 S. Wyoming Ave., Scranton, Pa.—B
 Service Welding Co., Cedar Grove, Wisc.—P,Q,R
 Skyline Mfg. Co., 1652 Rockwell, Cleveland 14, Ohio—D,F,I,J
 Smith, Inc., Herman H., 2326 Nostrand Ave., Brooklyn 10, N.Y.—L
 Snyder Mfg. Co., 22nd & Ontario Sts., Philadelphia 40, Pa.—A,E,F,I,J,K
 Southern Industries of Md., 1401 Reisterstown Rd., Pikesville, Baltimore 8, Md.—Q
 South River Metal Prod. Co., 377 Turnpike, S. River, N.J.—A,N,O,Q,R
 Spaulding Products Co., Tipton, Ind.—Q,R
 Special Instruments Lab., Inc., 312 W. Vine St., Knoxville, Tenn.—I
 Spiraling Products Co., P.O. Box 411, Hicksville, L.I., N.Y.—I,J
 Summit Eng'g Co., 3324 Main St., Hartford, Conn.—I
 Superex Electronics Corp., 23 Atherton St., Yonkers, N.Y.—H
 Sutton Electronic Co., 426 W. Short St., Lexington, Ky.—X
 Technical Appliance Corp., 1 Taco St., Sherburne, N.Y.—A,B,C,D,F,I,J,L,M,O,P,Q,R,S,X
 Tel-A-Ray Enterprises, Inc., Box 332, Henderson, Ky.—C,F,I,J,K,Q
 Tele-Beam Industries, 6th & Soscol Ave., Napa, Calif.—A,F,I,J,M,Q,S,Y
 Tele-Ex-Parand Corp., Pine & 4th Sts., Berwick, Pa.—Q,R
 Tele-Matic Industries, 1 Joramson St., Brooklyn 1, N.Y.—A,B,C,I,J,L,M,R,S,X,Y
 Telesine Antenna Corp., 3421 Terry Rd., Jackson 3, Miss.—I,J
 Tele-Vue Towers, Inc., Erskine, Minn.—Q
 Television Co. of America, 1 Azurelee Dr., Malibu, Calif.—D
 Telkor, Inc., Telegraph Rd., Elyria, Ohio—A,F,I,J
 Telrex, Inc., Ashbury Park, N.J.—F,I,J,K
 Tempo T-V Mfg Corp., 100 Prospect Ave., Burbank, Calif.—A,F,I,J,M,O,P,Q,R
 Tennialab, Quincy, Ill.—F,J
 Tenna Trailer Co., 321 Plum St., Pontiac, Ill.—Q
 Thomas & Betts, 36 Butler St., Elizabeth 1, N.J.—L

Thomas Mold & Die Co., Henry & Grant Sts., Wooster, Ohio—Q
 Transformer Metal Prod., Inc., 343 W. 26th St., New York, N.Y.—A
 Tricraft Products Co., 1535 N. Ashland Ave., Chicago 22, Ill.—A,I,J,O,P,R
 Trio Mfg. Co., Griggsville, Ill.—I,J,U
 Tru-Tronics Mfg. Co., 609 W. Fulton St., Chicago 6, Ill.—I,J
 TV Development Corp., 2024 McDonald Ave., Brooklyn 23, N.Y.—J
 T-V Products Co., 145-68 228th St., Springfield Gardens 13, N.Y.—A,I,J,R
 UHF Resonator Co., 224 7th St., Racine, Wisc.—D,I,J
 United Technical Labs., Morristown, N.J.—A,H,M,Y
 Universal Products, 4100 Taylor Ave., Racine, Wisc.—I,J,Q,R
 Vesto Co., 20th & Clay Sts., N. Kansas City, Mo.—Q
 Victor Insulators, Inc., Maple Ave., Victor, N.Y.—O
 Vidair Electronics Mfg. Co., 576 W. Merrick Rd., Lynbrook, N.Y.—M,X,Y
 Video Accessory Mfg. Co., P.O. Box 223, Tulsa 1, Okla.—Q,R
 Video Industries Co., 42 Palmer Pl., Port Chester, N.Y.—A,C,D,F,I,J,K
 Waldom Electronics, Inc., 4625 W. 53rd St., Chicago 32, Ill.—B
 Wallace Supplies Mfg. Co., 1300 Diversey Pkway, Chicago 14, Ill.—I,J
 Walsco Electronics Corp., 3225 Exposition Pl., Los Angeles 16, Calif.—A,E,I,J,S
 Ward Products Corp. Div., The Gabriel Co., 1148 Euclid Ave., Cleveland 15, Ohio—A,E,F,I,J,L,Q,R,Y,Z
 Waterproof Electric Co., 801 S. Main St., Burbank, Calif.—A,B,C,D,I,J,L,M,N,O,Q,R
 Welco Mfg. Co., 802 Washington St., Burlington, Iowa—I,J
 Western Coil & Electrical Co., 215 State St., Racine, Wisc.—N,Q
 Wheatland Tube Co., Bankers Securities Bldg., Philadelphia 7, Pa.—Q
 Wilmar Mfg. Co., 2715 E. 14th St., Kansas City 27, Mo.—A
 Wincharger Corp., E. 7th & Division Sts., Sioux City 2, Iowa—Q,R
 Wind Turbine Co., E. Market St. & P.R.R., West Chester, Pa.—D,F,Q,R
 Winward Co., 3000 Scotten Blvd., Burlington, Iowa—I,J
 Wipower Mfg. Co., 1207 1st Ave., E., Newton, Iowa—I,J
 Wunderlich Radio Co., 2 5th Ave., New York 11, N.Y.—A,D,N,O,Q

H & H Products Mfg., P.O. Box 2333, Terminal Annex, Los Angeles, Calif.—F
 Hull & Co., R. O., 1300 Parsons Ct., Rocky River, Ohio—F
 Interelectronics, 2432 Grand Concourse, New York 58, N.Y.
 Mallory & Co., P. R., 3029 E. Washington St., Indianapolis 6, Ind.—A,C,F
 Marathon Battery Co., Henrietta St., Wausau, Wisc.—A
 Miller Co., Sanford, 691 Bedford Ave., Brooklyn 6, N.Y.—F
 National Carbon Co., Div. Union Carbide & Carbon Corp., 30 E. 42 St., New York 17, N.Y.—A,B,C
 Olin Industries, 275 Winchester Ave., New Haven 4, Conn.—A,B,C,D
 Onan & Sons, D. W., 25 & University, S.E., Minneapolis 14, Minn.—F
 Opad-Green Co., 71-24 Warren St., New York 7, N.Y.—F
 Perma-Power Co., 4727 N. Damen St., Chicago 25, Ill.—F,G
 Philco Corp., Accessory Div., "A" & Allegheny Ave., Philadelphia 34, Pa.—A,B
 Power Transformer Co., 532 Mulberry St., Newark 5, N.J.—F
 Radiart Corp., 3455 Vega Ave., Cleveland 13, Ohio—F
 Radio Corp. of America, Eng'g. Products Div., Camden, N.J.
 Radio Corp. of America, Tube Div., Harrison, N.J.—A
 Rapid Electric Co., 2881 Middletown Rd., New York 51, N.Y.—F
 Ray-O-Vac Co., 212 E. Washington Ave., Madison 10, Wisc.—A,B,C,D
 Raytheon Mfg. Co., Waltham 54, Mass.
 Rowe Industries, 1702 Wayne St., Toledo 9, Ohio—F
 Schauer Mfg. Corp., 4500 Alpine Ave., Cincinnati 36, Ohio—F,G
 Smith-Meeker Eng'g Co., 157 Chambers St., New York 7, N.Y.—G
 Sonotone Corp., Elmsford, N.Y.—E
 Telkor, Inc., Telegraph Rd., Elyria, Ohio—G
 Universal Motor Co., 465 Universal Dr., Oshkosh, Wisc.—F
 Willard Storage Battery Co., 246 E. 131 St., Cleveland 1, Ohio—E

3—BOOKS & SERVICE DATA

Diagrams, Service A
 Guides, Rectifier replacement, selenium B
 Guides, Resistor color code C
 Guides, Tube replacement D
 Guides, Tube substitution E
 Guides, Volume control replacement F
 Manuals, Tube G
 Manuals, Test Equipment J
 Reference Books I

American Electronics Co., 1203 Bryant Ave., New York 59, N.Y.—I
 Audel Publishers, 49 W. 23rd St., New York, N.Y.—I
 Caldwell-Clements Manuals Corp., 480 Lexington Ave., New York 17, N.Y.
 Centralab Div., Globe Union, Inc., 900 E. Keefe Ave., Milwaukee 1, Wisc.—F
 Cisin, Harry G., Amagansett, N.Y.—A
 Clarostat Mfg. Co., Washington St., Dover, N.H.—F
 Cook Laboratories, 114 Manhattan St., Stamford, Conn.—H
 Dover Publications, Inc., 1780 Broadway, New York, N.Y.—I
 Eitel-McCullough, Inc., 798 San Mateo Ave., San Bruno, Calif.—G
 Electronic Devel. Assoc., 125 E 46 St., New York 17, N.Y.
 Federal Telephone & Radio Co., 100 Kingsland Rd., Clifton, N.J.—B
 General Electric Co., Schenectady, N.Y.
 General Electric Co., Electronics Park, Syracuse, N.Y.
 Harper & Bros., 49 E. 33rd St., New York, N.Y.—I
 International Resistance Co., 401 N. Broad St., Philadelphia 8, Pa.—C,F
 JFD Mfg. Co., 6101 16th Ave., Brooklyn 4, N.Y.—D
 Lytle Eng'g & Mfg. Co., 105 W. Monroe St., Chicago 3, Ill.—H,I
 Macmillan Co., 60 5th Ave., New York 11, N.Y.—I
 Magnavox Co., Service Dept., Fort Wayne, Ind.
 Mallory & Co., P. R., 3029 E. Washington St., Indianapolis 6, Ind.—B,F
 McGraw-Hill Publ. Co., 330 W. 42 St., New York, N.Y.—A
 National Radio Institute, 16th & U Sts., Washington, D.C.
 Philco Corp., Accessory Div., "A" & Allegheny Ave., Philadelphia 34, Pa.—D,F
 Pitman Publishing Corp., 2 W. 45 St., New York, N.Y.—I
 Prentice-Hall, Inc., 70 Fifth Ave., New York, N.Y.—I
 Radio Corp. of America, Eng'g. Products Div., Camden, N.J.
 Radio Corp. of America, Tube Div., Harrison, N.J.—A



2—BATTERIES, BATTERY CHARGERS & BATTERY ELIMINATORS

Batteries, dry cell radio A
 Batteries, flashlight B
 Batteries, hearing aid C
 Batteries, ignition D
 Batteries, storage E
 Battery Chargers F
 Battery Eliminators G

Acme Battery Corp., 59 Pearl St., Brooklyn, N.Y.—A
 Allied Eng'g Div., Allied Int'l, Inc., 230 Park Ave., New York 17, N.Y.—A,F
 American Television & Radio Co., 300 E. 4th St., St. Paul 1, Minn.—F,G
 Bond Electric Corp., New Haven, Conn.—A,B
 Bright Star Battery Co., 200 Crooks Ave., Clifton, N.J.—A,B
 Burgess Battery Co., Freeport, Ill.—A,B,C,D
 Chicago Standard Transformer Corp., Addison & Ellston, Chicago 81, Ill.
 Electronic Devices, Inc., 429 12th St., Brooklyn 15, N.Y.—G
 Electronic Instrument Co., 84 Withers St., Brooklyn 11, N.Y.—F,G
 Electro Products Labs., Inc., 4501 N. Ravenswood Ave., Chicago 40, Ill.—G
 Federal Telephone and Radio Company, A Division of IT&T, 100 Kingsland Rd., Clifton, N.J.—F,G
 Gates Electric Co., 65 W. Broadway, New York, N.Y.—F,G
 General Dry Batteries, 13000 Athens Ave., Cleveland 7, Ohio—A
 General Electric Co., Apparatus Div., 1 River Rd., Schenectady, N.Y.
 Heath Co., 305 Territorial, Benton Harbor, Mich.—G

Rider, Inc., John F., 480 Canal St., New York 13, N.Y.—A
 Rinehart Books, 232 Madison Ave., New York, N.Y.
 Sams & Co., Howard W., 2201 E. 46th St., Indianapolis 5, Ind.—A
 Scientific Book Publishing Co., Vincennes, Ind.—I
 Supreme Publications, 3727 W. 13th St., Chicago 23, Ill.—I
 Sylvania Electric Products, Inc., 1740 Broadway, New York 19, N.Y.—D,E,G
 Tung-Sol Electric, Inc., 95 8th Ave., Newark 4, N.J.—G
 United Catalog Publishers, 110 Lafayette St., New York 13, N.Y.—I
 Van Nostrand Co., 250 4th Ave., New York, N.Y.—I
 Wiley & Sons, Inc., John, 440 Fourth Ave., New York 16, N.Y.—I

4—CABINETS & CASES

Cabinets, amplifier A
 Cabinets, custom B
 Cabinets, four drawer C
 Cabinets, metal D
 Cabinets, plastic E
 Cabinets, resistor F
 Cabinets, TV chassis G
 Cabinets, wood H
 Cases, amplifier carrying I
 Cases, meter J
 Cases, phono-carrying (see Sec. 14)
 Cases, radio K
 Shelving L
 Storage Bins & Cabinets for parts . . M

Akro-Mills, Inc., P.O. Box 989, Akron 9, Ohio—M
 Alden Products Co., 117 N. Main St., Brockton, Mass.
 Allied Engraving & Stamping Co., 161 Ellicott St., Buffalo 3, N.Y.—E
 Altec Lansing Corp., 9356 Santa Monica Blvd., Beverly Hills, Calif.—C
 American Radio Hardware Co., 152 MacQuestion Pkwy. So., Mt. Vernon, N.Y.—D,M
 Argos Products, 310 Main St., Genoa, Ill.—A,B,G,I,K
 Bogen Co., David, 29 9th Ave., New York 14, N.Y.—H,I
 Browne Electronics, 12450 W. Washington Blvd., Venice, Calif.—H
 Bud Radio, Inc., 2118 E. 55th St., Cleveland 3, Ohio—D,M
 Churchill Lighting Corp., 344 Franklin St., Melrose 76, Mass.—D,G
 Cincinnati Ventilating Co., Third & Madison, Covington, Ky.—M
 Cooper Industries, 4953 W. Fullerton Ave., Chicago 39, Ill.—L,M
 Delco Radio Div., General Motors Corp., 1446 S. Home Ave., Kokomo, Ind.—G
 DeWald Radio & TV, 35-15 37 Ave., Long Island City 1, N.Y.—G
 DuMont Labs., Inc., Allen B., Mobile Comm. Dept., 1500 Main St., Clifton, N.J.—D
 Electronic Workshop, 26 W. 8 St., New York 11, N.Y.—H
 Electro-Voice, Inc., Buchanan, Mich.—A,B,H
 Equipto Div., Aurora Equip. Co., 422 Cleveland St., Aurora, Ill.—C,D,L,M
 Finn & Co., T. R., 333 Jackson Ave., New York 54, N.Y.—G,M
 General Industries Co., Olive & Taylor Sts., Elyria, Ohio—E
 G&H Wood Products Co., 75 N. 11 St., Brooklyn 11, N.Y.—A,K
 Gonset Co., 801 S. Main St., Burbank, Calif.—D

Hamilton Electronics Corp., 2726 Pratt Ave., Chicago 45, Ill.—A
 Industrial Television, Inc., 369 Lexington Ave., Clifton, N.J.—D,G
 Insuline Corp. America, 186 Granite St., Manchester, N.H.—A,D,G,I,J
 Karyvall Body, Inc., 8221 Clinton Rd., Cleveland 9, Ohio—L,M
 Kleer-Vue Mfg. Co., 636 Penn Ave., Pittsburgh 2, Pa.—M
 Newcomb Audio Products Co., 6824 Lexington Ave., Hollywood 38, Calif.—I
 North American Model Products, Inc., 9802 Warwick Rd., Warwick, Va.—H
 Par-Metal Products Corp., 32-62 49th St., Long Island City, N.Y.—D
 Pentron Corp., 221 E. Cullerton St., Chicago, Ill.—E,H
 Plymouth Electronics Corp., 50 Kingsbury St., Worcester 3, Mass.—D,G
 Premier Metal Products Co., 3160 Webster Ave., New York 67, N.Y.—A,B,D,I,J,K
 Q-Line Mfg. Corp., 1562 61 St., Brooklyn 19, N.Y.—A,B,C,G,J
 Radiophone Corp., 600 E. Evergreen Ave., Monrovia, Calif.—D,G
 Radio City Products Co., 101 W. 31 St., New York 1, N.Y.—D
 Romar Plastics Inc., 1311 E. Main St., St. Charles, Ill.—E
 Service Parts Systems, 13380 E. 9-Mile Rd., East Detroit, Mich.—M
 Standard Pressed Steel Co., Box 164, Jenkintown, Pa.—D
 Tabet Mfg. Co., 1336 Ballentine Blvd., Norfolk 1, Va.—A,C,G
 Transformer Metal Prod., Inc., 343 W. 26 St., New York, N.Y.—D,G,M
 U.M.&F. Mfg. Corp., 10929 Van Owne St., N. Hollywood, Calif.—D,H,G,M
 Waldom Electronics, Inc., 4625 W. 53 St., Chicago 32, Ill.—E,J
 Walsco Electronics Corp., 3225 Exposition Pl., Los Angeles 16, Calif.—M
 Waterproof Electric Co., 801 S. Main St., Burbank, Calif.—D

5—CAPACITORS

Capacitors, buffer A
 Capacitors, ceramic B
 Capacitors, dry electrolytic C
 Capacitors, mica D
 Capacitors, molded, paper & wax E
 Capacitors, oil-filled F
 Capacitors, paper metalized G
 Capacitors, photoflash H
 Capacitors, silicone-filled I
 Suppressors J
 Trimmers & Padders K
 Capacitors, variable, tubular L
 Capacitors, wet electrolytic M

Acme Electronics Inc., Sub. Aerovox Corp., 2724 Peck Rd., Monrovia, Calif.—C,G
 Aerovox Corp., 740 Belleville Ave., New Bedford, Mass.—A,B,C,D,E,F,G,H,I,J
 American Condenser Co., 4410 N. Ravenswood Ave., Chicago 40, Ill.—C,F,M
 American Radionic Co., Inc., 33 Flatbush Ave., Brooklyn 17, N.Y.—B,E
 Arco Electronics, Inc., 103 Lafayette St., New York 13, N.Y.—B,D,G,K
 Astron Corp., 255 Grant Ave., E. Newark, N.J.—C,E,F,G,I,J
 Beam Instruments Corp., 350 5th Ave., New York 1, N.Y.—B,C,D,G,M,R
 Berger Communications, 109-01 72nd Rd., Forest Hill, N.Y.
 Bud Radio Inc., 2118 E. 55 St., Cleveland 3, Ohio—K
 Cardwell Electronics Productions, Allen D., 97 Whiting St., Plainville, Conn.—K,L
 Centralab Div., Globe Union, Inc., 900 E. Keefe Ave., Milwaukee 1, Wisc.—A,B,E,K,L
 Columbia Resistors, Inc., 23 W. Washington Ave., Pearl River, N.Y.—J
 Condensers Mfrs. Inc., Nashville, Tenn.—C,M
 Condenser Products Co., 7517 N. Clark St., Chicago 26, Ill.—E
 Cornell-Dubilier Elec. Corp., South Plainfield, N.J.—B,C,D,E,F,G,H,I,J
 Corning Glass, Corning, N.Y.
 Coamic Radio Corp., 853 Whittier St., Bronx, N.Y.—C,E
 Deutschmann Corp., Tobe, Providence Highway, Norwood, Mass.—C,E,F,G,H,I,J
 Dumont-Airplane & Marine Instruments, Inc., 15 William St., New York 5, N.Y.—C,E,F,G,I
 Electromotive Mfg. Co., Willimatic, Conn.
 Erie Resistor Corp., 644 W. 12 St., Erie 6, Pa.—B,D,J,K,L
 Gates Electric Co., 65 W. Broadway, New York, N.Y.—C
 General Instrument Corp., 829 Newark Ave., Elizabeth 3, N.J.—F,K,L
 General Products Corp., 107 Salem St., Union Springs, N.Y.—G

Girard-Hopkins, 1000 40 Ave., Oakland 1, Calif.—F,G
 Gudeman Co., 340 W. Huron St., Chicago 10, Ill.—B,C,E,F,G,H
 Hammarlund Mfg. Co., 460 W. 34th St., New York 1, N.Y.—K
 Illinois Condenser Co., 1616 N. Throop St., Chicago 22, Ill.—C,H
 Industrial Condenser Corp., 3243 N. Calif. Ave., Chicago 18, Ill.—C,E,F,G
 Intercontinental Industries, Inc., 555 W. Adams St., Chicago 6, Ill.—D
 Jennings Radio Mfg. Co., P.O. Box 1278, San Jose 8, Calif.
 JFD Mfg. Co., 6101 16th Ave., Brooklyn 4, N.Y.—K,L
 Johnson Co., E. F., Waseca, Minn.—K,L
 Magnavox Corp., Ft. Wayne, Ind.—C
 Maida Development Co., 214 Academy St., Hampton, Va.—B,K
 Mallory & Co., P.R., 3029 E. Washington St., Indianapolis 6, Ind.—A,B,C,D,E,F,H,J,K
 McCoy Electronics Co., Mt. Holly Springs, Pa.—L
 Micamold Radio Corp., 1087 Flushing Ave., Brooklyn 37, N.Y.
 Millen Mfg. Co., James, 150 Exchange St., Malden 48, Mass.—K
 National Co., 61 Sherman St., Malden, Mass.—B,K
 New York Coil Co., Inc., Phoenixville, Pa.—F,G,I
 Philco Corp., Accessory Div., "A" & Allegheny Ave., Philadelphia 34, Pa.—A,B,C,D,E,G,K,M
 Philmore Mfg. Co., 113 University Pl., New York 3, N.Y.—L
 Planet Mfg. Corp., 225 Belleville Ave., Bloomfield, N.J.—C
 Plastic Capacitors, Inc., 2511 W. Moffat St., Chicago 47, Ill.—F,I
 Pyramid Electric Co., 1445 Hudson Blvd., N. Bergen, N.J.—A,C,E,F,G,I
 Radio Materials Corp., 3325 N. California Ave., Chicago 18, Ill.—B
 Sangamo Electric Co., Capacitor Div., Box 7, Marion, Ill.—C,D,E
 Sickles, F. W. Div., Corp., P.O. Box 330, Chicopee, Mass.—K
 Skottie Electronics, Inc., 731 Pleasant Ave., Peckville, Pa.—B
 Sprague Products Co., N. Adams, Mass.—A,B,C,D,E,F,G,H,I
 Tru-Ohm Products Div., Model Eng'g. & Mfg. Inc., 2800 N. Milwaukee Ave., Chicago 18, Ill.
 United Condenser Corp., 3400 Park Ave., New York 56, N.Y.—E
 United Electronic Mfg. Corp., 542 39 St., Union City, N.J.—C
 Welch Mfg. Co., W. M., 1515 Sedgwick St., Chicago 10, Ill.—F

6—CHOKES, COILS & TRANSFORMERS

Chokes, AF A
 Chokes, filter B
 Chokes, power filter C
 Chokes, RF D
 Coils, field E
 Coils, focus F
 Coils, IF, oscillator & RF G
 Coils, peaking H
 Coils, speaker voice I
 Controls, linearity & width J
 Deflection Yokes K
 Inductors, toroid L
 Inductors, variable M
 Solenoids N
 Transformers, audio O
 Transformers, constant voltage P
 Transformers, driver Q
 Transformers, filament R
 Transformers, flyback S
 Transformers, IF, oscillator & RF T
 Transformers, intercom U
 Transformers, isolation V
 Transformers, power W
 Transformers, step-down X
 Transformers, variable Y
 Transformers, vibrator Z

Acme Electric Corp., 31 Water St., Cuba, N.Y.—S
 Acme Electronics Inc., Sub. Aerovox Corp., 2724 Peck Rd., Monrovia, Calif.—B,D
 Acro Products Co., 369 Shurs Lane, Philadelphia 28, Pa.—B,L,M,O,R
 Advance Electric & Relay Co., 2435 N. Naomi St., Burbank, Calif.—N
 Aerolite Electronics, 507 26th St., Union City, N.J.—A,B,D,G,H,L,N,T
 Airdesign, Inc., 241 Fairfield Ave., Upper Darby, Pa.—B,C,D,O,R,V,W
 Allied Mfg. Corp., 605 61st St., W. New York, N.J.—K
 Anchor Electronics, Inc., 717 Sip St., Union City, N.J.—D,L,M

CIRCULATION
 of this
TECHNICIAN
BUYERS DIRECTORY
50,000

Atlantic Transformer Corp., 30 Hynes Ave., Groton, Conn.—B,C,L,M,O,V,W
 Audio Development Co., 2833 13th Ave. S., Minneapolis, Minn.—O
 Beam Instrument Corp., 350 5th Ave., New York 1, N.Y.—K
 Birdsell Mfg. Co., 750 San Antonio Rd., San Antonio, Texas—V,W
 Brach Mfg. Corp., 200 Central Ave., Newark 8, N.J.—D
 Bud Radio Inc., 2118 E. 55 St., Cleveland 3, Ohio—D
 Burnell & Co., 45 Warburton Ave., Yonkers 2, N.Y.—B,L,M
 Calbest Eng'g & Electronics Co., 828 N. Highland Ave., Hollywood 38, Calif.—D,G
 Campbell X-Ray Corp., 110 Cummington St., Boston 15, Mass.—R,W
 Cardwell Electronics Productions, Allen D., 97 Whiting St., Plainville, Conn.—D,H
 Chicago Electronic Eng'g Co., 3223 W. Armitage Ave., Chicago 47, Ill.—B,O,Q,R,W,X,Y,Z
 Chicago Standard Transformer Corp., 3850 Elston, Chicago 18, Ill.—B,C,J,K,L,O,P,Q,R,S,U,V,W,X,Y,Z
 Cinaudagraph Corp., 7834 N. Clark St., Chicago 26, Ill.—O,S,W
 Clum Mfg. Co., 611 W. National Ave., Milwaukee 41, Wisc.
 Crest Laboratories, Inc., 8411 Rockaway Beach Blvd., Rockaway Beach 93, N.Y.—A,B,C,D,H,J,N,O,Q,R,U,V,W,X,Y,Z
 Cycle Electronic Labs., 356 Glenwood Ave., East Orange, N.J.—A,B,C,D,L,M,R,V,W
 Delco Radio Div., General Motors Corp., 1446 S. Home Ave., Kokomo, Ind.—G,T
 Deutschmann Corp., Tobe, Providence Highway, Norwood, Mass.—B,D,L,N
 Drake Co., R. L., 18 E. Central Ave., Miamisburg, Ohio—B,D,H
 Dupke Coil Co., 3257 W. 6 St., Los Angeles 6, Calif.
 DX Radio Products Co., 2300 Armitage Ave., Chicago 47, Ill.—F,G,K,I,S,V,W
 Electronic Eng'g Co., 3223 W. Armitage Ave., Chicago 47, Ill.
 Electro-Voice, Inc., Buchanan, Mich.—I
 Eltran Corp., 113-119 W. Station St., St. Anne, Ill.—O
 Epsco, Inc., 126 Mass. Ave., Boston 15, Mass.—D
 Espey Mfg. Co., 528 E. 72nd St., New York 21, N.Y.—A,B,C,E,F,L,M,N,O,P,Q,R,U,V,W,X,Y,Z
 Federal Telephone & Radio Co., A Div. of IT&T, 100 Kingsland Rd., Clifton, N.J.—O,W
 Forbes & Wagner, Inc., 339 Central Ave., Silver Creek, N.Y.—A,B,D,G,H,J,K,M,N,S,T,V
 Freed Transformer Co., 1718 Weirfield St., Brooklyn 27, N.Y.—B,C,L,M,O,R,V,W
 Galbraith & Son, 450 6 Ave., New York 11, N.Y.—B,C,O,R,V,W
 Gates Electric Co., 65 W. Broadway, New York, N.Y.—B,C,R,V,W,Y
 General Electric Co., Electronics Park, Syracuse, N.Y.
 General Transformer Co., 18240 Harwood Ave., Homewood, Ill.—B,C,M,O,Q,R,U,V,W,X,Z
 Gramer Transformer Corp., 2734 N. Pulaski Rd., Chicago 39, Ill.—A,B,C,D,E,G,H,I,J,L,M,N,O,Q,R,S,T,U,V,W,X,Y,Z
 Great Eastern Mfg. Co., 163 Remsen Ave., Brooklyn 12, N.Y.—H
 Guardian Electric Mfg. Co., 1621 W. Walnut, Chicago 40, Ill.—F,K
 Guthman & Co., E. I., 15 S. Throop St., Chicago 7, Ill.
 Halldorson Transformer Co., 4500 Ravenswood Ave., Chicago 40, Ill.—B,F,J,K,O,Q,R,S,U,V,W,X,Y,Z
 Hevi Duty Electric Co., 4212 W. Highland Blvd., Milwaukee, Wisc.—R,W,Y
 Hillburn Electronic Products Co., 55 Nassau Ave., Brooklyn 22, N.Y.—D,G,H,I,J,S,T,U
 Illinois Transformer Co., 412 S. Green St., Chicago 7, Ill.
 Insuline Corp. America, 186 Granite St., Manchester, N.H.—D
 International Resistance Co., 401 N. Broad St., Philadelphia 8, Pa.—D
 James Vibrapowr Co., 4036 N. Rockwell St., Chicago 18, Ill.—O,R,Z
 Jefferson Electric Co., 900 25th Ave., Bellwood, Ill.
 JFD Mfg. Co., 6101 16th Ave., Brooklyn 4, N.Y.—X
 Johnson Co., E. F., Waseca, Minn.—D,H,L,M
 Kenyon Transformer Co., 840 Barry St., Bronx 59, N.Y.
 Lear, Inc., 11916 W. Pico Blvd., Los Angeles 64, Calif.—G
 Lectrohm, Inc., 5560 Northwest Hwy., Chicago 30, Ill.—B,D,G,L,M,O,P
 Linell Eng'g Co., 447 South Blvd., Oak Park, Ill.—D,G,H,T
 Magnavox Co., Ft. Wayne 4, Ind.—B,C,E,O,W
 Mallory & Co., P.R., 3029 E. Washington St., Indianapolis 6, Ind.—G
 Marine View Electronics, 744 E. 138th St., New York 54, N.Y.—A,B,C,D
 McIntosh Lab., Inc., 320 Water St., Binghamton, N.Y.—O
 Merit Coil & Transformer Corp., 4427 N. Clark St., Chicago 40, Ill.—A,B,C,D,F,G,H,J,K,O,Q,R,S,T,U,V,W,X,Y,Z
 Mico Instrument Co., 80 Trowbridge St., Cambridge 38, Mass.—L

Microtran Co., 84-11 Rockaway Beach Blvd., Rockaway Beach 93, N.Y.—B,C,I,L,M,O,R,V,W,Y
 Miller Co., J. W., 5917 S. Main St., Los Angeles 3, Calif.—D,G,H,J,M,N,T
 Milwaukee Transformer Co., 5231 N. Hopkins St., Milwaukee 9, Wisc.—B,C,D,O,R,S,W
 New York Coil Co., Inc., Phoenixville, Pa.—B,N
 North Hills Electric Co., 246-32 54th Ave., Douglaston, L.I. 62, N.Y.—D,G,L,M
 Ohmite Mfg. Co., 3601 Howard St., Skokie, Ill.—D
 Oxford Electric Corp., 3911 S. Michigan Ave., Chicago 15, Ill.—I,O,W,Y
 Peerless Electrical Products, Div. Altec Lansing Corp., 9356 Santa Monica Blvd., Beverly Hills, Calif.—A,B,C,N,O,Q,R,V,W,X,Z
 Penn-Tran Corp., Bellefonte, Pa.—K
 Permoflux Corp., 4900 W. Grand Ave., Chicago 39, Ill.—A,B,C,E,I,N,O,R,U,Z
 Philco Corp., Accessory Div., "A" & Allegheny Ave., Philadelphia 34, Pa.—A,B,C,D,G,J,K,M,O,Q,R,S,T,V,W,X,Z
 Power Transformer Co., 532 Mulberry St., Newark 5, N.J.—B,C,L,M,O,R,V,W,A,D
 Quam-Nichols Co., Marquette Rd. & Prairie Ave., Chicago 37, Ill.—I
 Radio Music Corp., 84 So. Water St., Port Chester, N.Y.—A,B,N,O,Q,R,V,W,X
 RAM Electronics Sales Co., So. Buckhout St., Irvington, N.Y.—J,K,T
 Raypar, Inc., 7810 W. Addison St., Chicago 34, Ill.—G,L,M,R,S,T
 Radio Corp. of Amer., Electronic Component Div., Camden, N.J.—K
 Raytheon Mfg. Co., Equip. Sales, 100 River St., Waltham, Mass.—A,B,C,D,E,F,G,H,I,K,L,M,N,O,P,R,T,U,V,W,X,Y,Z
 R. K. Mfg. Co., Box 112, Marion, Ill.—B,O,R,V,W
 Rogers Electric Corp., 49 Bleeker St., New York 12, N.Y.—J,K,S,T
 Sickles, F. W., Div. Corp., P.O. Box 830, Chicopee, Mass.—D,G,H,J,K,L,M,S,T
 SNC Mfg. Co., P.O. Box 277, Oshkosh, Wisc.—A,B,C,O,Q,R,U,V,W,X,Z
 Sola Electric Co., 4633 W. 16th St., Chicago 50, Ill.—P
 Sonotone Corp., Elmsford, N.Y.—O
 Standard Coil Products Co., 2085 N. Hawthorne, Melrose Park, Ill.
 Standard Electrical Products Co., 2240 E. 3 St., Dayton 3, Ohio—A,B,C,L,M,N,O,P,Q,R,V,W,X,Y,Z
 Suprex Electronics Corp., 23 Atherton St., Yonkers, N.Y.—B,G,L,M
 Tech-Master Corp., 443 Broadway, New York 13, N.Y.—O
 Tele-Matic Industries, 1 Joralemon St., Brooklyn 1, N.Y.—X,Y
 Television Labs., Inc., Mill St., Wauconda, Ill.—K

Telex, Inc., 1633 Eustis St., St. Paul 1, Minn.—O
 Tensitron, Inc., Pin Hill, Harvard, Mass.—Y
 Texas Instruments, Inc., 6000 Lemmon Ave., Dallas 9, Texas—B,C,D,G,L,M,O,R,T,V,W
 Thermador Electrical Mfg. Co., Electronics Div., 2000 S. Camfield Ave., Los Angeles 22, Calif.—O,R,V,W
 Thordarson-Meissner Mfg. Div. Maguire Industries, Inc., 7th & Bellmont Sts., Mt. Carmel, Ill.—A,B,C,D,F,G,H,I,J,K,O,P,Q,R,S,T,U,V,W,X,Y,Z
 Todd Products Co., 156 Gramatan Ave., Mt. Vernon, N.Y.—B,C,L,M,O,R,W
 Todd-Tran Corp., 156 Gramatan Ave., Mt. Vernon, N.Y.—A,B,C,J,K,N,O,P,Q,R,S,W,X
 Triad Transformer Corp., 4055 Redwood Ave., Venice, Calif.—A,B,C,E,F,J,K,L,M,O,Q,R,S,U,V,W,X,Y,Z
 Triwec Transformer Co., 3261 N. Milwaukee Ave., Chicago 12, Ill.
 United Technical Labs., Morristown, N.J.—B,D,M
 United Transformer Co., 150 Varick St., New York, N.Y.—O,R,V,W,A,C
 University Loudspeakers, Inc., 80 So. Kensico Ave., White Plains, N.Y.—O
 Utah Radio Products Co., 1123 E. Franklin St., Huntington, Ind.—O
 Vidair Electronics Mfg. Co., 576 W. Merrick Rd., Lynbrook, N.Y.—G
 Vokar Corp., Huron River Dr., Dexter, Mich.—B,C,D,F,G
 Wheeler Insulated Wire Co., 150 E. Aurora St., Waterbury 20, Conn.—A,B,C,E,F,N,O,Q,R,U,V,W,X,Z
 Wilco Corp., 546 Drover St., Indianapolis 21, Ind.—A,B,C,D
 Wilmer Mfg. Co., 2715 E. 14th St., Kansas City 26, Mo.—D,G,T



Wirt Co., 5221 Greene St., Philadelphia 44, Pa.—D,L,M
 Workman TV, Inc., 309 Queen Anne Rd., Teaneck, N.J.—B,E,H,R,V,X

7—CONVERTERS & TUNING UNITS

- Boosters, FM A
- Boosters, TV B
- Boosters, UHF C
- Conversion Strips, UHF E
- Converters, UHF-TV D
- Mechanism, automatic tuning, radio F
- Tuners, AM G
- Tuners, FM-AM H
- Tuners, FM I
- Tuners, front-end TV J
- Tuners, TRF broadcast K

Alco Electronics Mfg. Co., 3 Wolcott Ave., Lawrence, Mass.—I
 Alliance Mfg., Lake Park Blvd., Alliance, Ohio—B,D
 Altec Lansing Corp., 9356 Santa Monica Blvd., Beverly Hills, Calif.—H
 Anchor Radio Corp., 2215 S. St. Louis Ave., Chicago 23, Ill.—J
 Approved Electronic Instrument Corp., 928 Broadway, New York 10, N.Y.—A,B,C,D,G,H,I,K
 Astatic Corp., P.O. Box 120, Conneaut, Ohio—B,C
 Atlas Coil, Inc., Cottage St., Derby, Conn.—F,I
 Bell Sound Systems, 555 Marion Rd., Columbus 7, Ohio—H
 Blonder-Tongue Labs., 526 North Ave., Westfield, N.J.—B,C,D
 Bogen Co., David, 29 9th Ave., New York 14, N.Y.—B,C,D,G,H,I
 Brach Mfg. Corp., 200 Central Ave., Newark 3, N.J.—B
 Browne Electronics, 12450 W. Washington Blvd., Venice, Calif.—G,H
 Browning Labs., Inc., 750 Main St., Winchester, Mass.—H
 Cardwell Electronics Productions, Allen D., 97 Whiting St., Plainville, Conn.—D
 Channel Master Corp., Ellenville, N.Y.—B
 Crest Laboratories, Inc., 84-11 Rockaway Beach Blvd., Rockaway Beach 93, N.Y.—D
 DeWald Radio & TV 35-15 37 Ave., Long Island City 1, N.Y.—G,H,I,J
 DX Radio Products Co., 2300 Armitage Ave., Chicago 47, Ill.—J
 Electro-Voice, Inc., Buchanan, Mich.—A,B,C
 Espey Mfg. Co., 528 E. 72nd St., New York 21, N.Y.—G,H,I
 Fisher Radio Corp., 21-21 44th Dr., Long Island City 1, N.Y.—H
 Forbes & Wagner, Inc., 339 Central Ave., Silver Creek, N.Y.—G
 General Instrument Corp., 829 Newark Ave., Elizabeth 3, N.J.—D,E,F,J
 Gonset Co., 801 S. Main St., Burbank, Calif.—G,I,J
 Granco Products, Inc., 36-17 20th Ave., Long Island City 5, N.Y.—D,J
 Graybar Electric Co., 420 Lexington Ave., New York 17, N.Y.—H
 Hallcrafters Co., 4401 W. 5th Ave., Chicago 24, Ill.—H
 Industrial Television, Inc., 359 Lexington Ave., Clifton, N.J.—B
 Jerrold Electronics Corp., 26 & Dickinson Sts., Philadelphia 46, Pa.—A,B,D
 Lytle Engineering & Mfg. Co., 105 W. Monroe St., Chicago 3, Ill.—H,I,J
 Mallory & Co., P.R., 3029 E. Washington St., Indianapolis 6, Ind.—D,J
 Martin & Co., H.S., 1916 Greenleaf St., Evanston, Ill.—H
 Newcomb Audio Products Co., 6824 Lexington Ave., Hollywood 38, Calif.—H
 Pentron Corp., 221 E. Cullerton Ave., Chicago 16, Ill.—G,H
 Philco Corp., Accessory Div., "A" & Allegheny Ave., Philadelphia 34, Pa.—B,D,G,H,I,J
 Pilot Radio Corp., 37-06 36th St., Long Island City 1, N.Y.—D,H,I
 Radiart Corp., 3455 Vega Ave., Cleveland 13, Ohio—B
 Radio Corp. of America Eng'g. Products Div., Camden, N.J.—G,H,I,J
 Radio Corp. of America, Tube Div., 415 S. 5 St., Harrison, N.J.—B,C,D,K,L,M,O,R,S,V,W,Y
 Radio Craftmen Inc., 4401 N. Ravenswood Ave., Chicago, Ill.—H,I
 Radio Eng'g Labs., 36-40 37th St., Long Island City 1, N.Y.—I
 Radio Receptor Co., 251 W. 19th St., New York 11, N.Y.—D
 Regency Div., I.D.E.A., Inc., 7900 Pendleton Pike, Indianapolis 26, Ind.—A,B,D,H
 Rex Electronics, 1861 De Loss St., Indianapolis 3, Ind.—D,H,I,J
 Ryan Industries, 10910 S. Vermont Ave., Los Angeles 44, Calif.—K

Sargent-Rayment Co., 1401 Middle Harbor Rd., Oakland 20, Calif.—G,H,I
 Sickles, F. W. Div., Corp., P.O. Box 330, Chicopee, Mass.—D,E,G,J
 Simpson Mfg. Co., Mark, 32-28 49th St., Long Island City 3, N.Y.—B
 Standard Coil Products Co., 2085 N. Hawthorne, Melrose Park, Ill.
 Stromberg-Carlson Co., Sound Equip. Div., 1225 Clifford Ave., Rochester 21, N.Y.—G,H,I,J
 Suporex Electronics Corp., 23 Atherton St., Yonkers, N.Y.—B
 Sutton Electronic Co., 426 W. Short St., Lexington, Ky.—B,D
 Tarzian, Inc., Sarkes, E. Hillside, Bloomington, Ind.—D,J
 Tech-Master Corp., 443 Broadway, New York 13, N.Y.—B,D,G,J
 Technical Appliance Corp., 1 Taco St., Sherburne, N.Y.—A,B
 Tele King Corp., 601 W. 26th St., New York 1, N.Y.—D
 Tele-Matic Industries, 1 Joralemon St., Brooklyn 1, N.Y.—C,D
 Television Remote Control Co., 820 No. Fairfax Ave., Los Angeles 46, Calif.—L
 Turner Co., 909 17th St., N.E., Cedar Rapids, Iowa—B
 Varicon Corp., 65 Hope St., Brooklyn 11, N.Y.—D
 Videon Electronic Corp., 902 E. Michigan St., Indianapolis 2, Ind.—B,D
 Walsco Electronics Corp., 3225 Exposition Pl., Los Angeles 16, Calif.—D
 Waterproof Electric Co., 801 S. Main St., Burbank, Calif.—G,I,J

8—CRYSTALS

(See also Sec. 19—Semiconductors)

Crystals, marker A
 Crystals, microphone B
 FM IF Markers D
 Selectors, crystal F

Astatic Corp., P.O. Box 120, Conneaut, Ohio—B
 Bliley Electric Co., Union Station Bldg., Erie, Pa.
 Brush Electronics Co., 3405 Perkins Ave., Cleveland 14, Ohio—B
 Cryco, Inc., 1138 Mission St., S. Pasadena, Calif.
 Duotone Co., Locust St., Keyport, N.J.—B
 Industrial Hardware Mfg. Co., 109 Prince St., New York 12, N.Y.
 James Knights Co., Sandwich, Ill.
 McCoy Electronics Co., Mt. Holly Springs, Pa.
 Mosley Electronics, 8622 St. Charles Rock Rd., St. Louis 14, Mo.
 Philco Corp., Accessory Div., "A" & Allegheny Ave., Philadelphia 34, Pa.—B
 Scala Radio Co., 2814 19th St., San Francisco 10, Calif.—A
 Standard Piezo Co., P. O. Box 513, Carlisle, Pa.
 Tibbetts Industries, Colcord Ave., Camden, Me.—B
 Valpey Crystal Corp., 1244 Highland St., Holliston, Mass.—A,D

9—FILTERS, INTERFERENCE & NOISE

Filters, audio A
 Filters, bandpass B
 Filters, interference C
 Filters, noise D
 Filters, whistle E
 Limiters, noise F
 Suppressors, auto ignition G
 Suppressors, parasitic H
 Wave Traps I

Acme Electronics Inc., Sub. Aerovox Corp., 2724 Peck Rd., Monrovia, Calif.—A,B,C,F,I
 Advance Electronics Co., 8510 North End Ave., Oak Park 37, Mich.—I
 Aerovox Corp., 740 Belleville Ave., New Bedford, Mass.—C,D,G
 Anchor Electronics, Inc., 717 Sip St., Union City, N.J.—B,I
 Astron Corp., 255 Grant Ave., E. Newark, N.J.—A,C,D,G
 Atlas Coil Inc., Cottage St., Darby, Conn.—A,B,C,F,I

Barker & Williamson, 235 Fairfield Ave., Upper Darby, Pa.
 Bestcraft Products Co., 626 Broadway, New York 12, N.Y.—I
 Bud Radio Inc., 2118 E. 55 St., Cleveland 3, Ohio—C
 Burnell & Co., 45 Warburton Ave., Yonkers, N.Y.—A,B
 Calbest Eng'g. & Electronics Co., 828 N. Highland Ave., Hollywood 38, Calif.—C
 Camburn, Inc., 32-40 57th St., Woodside 77, N.Y.—G
 Cardwell Electronics Productions, Allen D., 97 Whiting St., Plainville, Conn.—B,I
 Chicago Electronic Eng'g. Co., 3223 W. Armitage Ave., Chicago 47, Ill.—B
 Chicago Standard Transformer Corp., Addison & Elston, Chicago 18, Ill.—A,B
 Continental Carbon Inc., 13900 Lorain Ave., Cleveland 11, Ohio—C,G
 Cornell-Dubilier Elec. Corp., South Plainfield, N.J.—A,B,C,D,F
 Crest Laboratories Inc., 84-11 Rockaway Beach Blvd., Rockaway Beach 93, N.Y.—A
 Deutschmann Corp., Tobe, Providence Highway, Norwood, Mass.—A,B,C,D,G
 Drake Co., R. L., 18 E. Central Ave., Miami-burg, Ohio—B,C,D,I
 Dunkle Coil Co., 3257 W. 6 St., Los Angeles 6, Calif.
 DX Radio Products Co., 2300 Armitage Ave., Chicago 47, Ill.—A
 Epco Electronics, Inc., 140 Liberty St., New York 6, N.Y.—C,I
 Erie Resistor Corp., 644 W. 12th St., Erie 6, Pa.—G
 Espey Mfg. Co., 528 E. 72 St., New York 21, N.Y.—A,B
 Filtron Co., 131-15 Fowler Ave., Flushing, N.Y.
 Fisher Radio Corp., 21-21 44 Dr., Long Island City 1, N.Y.—A,D
 Forbes & Wagner, Inc., 339 Central Ave., Silver Creek, N.Y.—C,I
 Freed Transformer Co., 1718 Weirfield St., Brooklyn 27, N.Y.—A,B
 Gonsel Co., 801 S. Main St., Burbank, Calif.—F
 Great Eastern Mfg. Co., 163 Remsen Ave., Brooklyn 12, N.Y.—C
 Gudeman Co., 340 W. Huron St., Chicago 10, Ill.—C,D
 Heppner Mfg. Co., P.O. Box 612, Round Lake, Ill.—I
 Industrial Condenser Corp., 3243 N. Calif. Ave., Chicago 18, Ill.—C,D
 Insuline Corp. America, 186 Granite St., Manchester, N.H.—D,G
 Jerrold Electronics Corp., 26 & Dickinson Sts., Philadelphia 46, Pa.—B,C
 JFD Mfg. Co., 6101 16 Ave., Brooklyn 4, N.Y.—G,I
 Lear, Inc., 11916 W. Pico Blvd., Los Angeles 64, Calif.—B,C
 Malory & Co., P. R., 3029 E. Washington St., Indianapolis 6, Ind.—D
 Merit Coil & Transformer Corp., 4427 N. Clark St., Chicago 40, Ill.—B,I
 Microtran Co., 84-11 Rockaway Beach Blvd., Rockaway Beach 93, N.Y.—A
 Miller Co., J. W., 5917 S. Main St., Los Angeles 3, Calif.—B,C,D,I
 Muter Co., 1255 So. Michigan Ave., Chicago 5, Ill.—D
 Peerless Electrical Products, Div. Altec Lansing Corp., 9356 Santa Monica Blvd., Beverly Hills, Calif.—A
 Perfection Electric Co., 2535 S. Wabash Ave., Chicago 16, Ill.—I
 Permoflux Corp., 4900 W. Grand Ave., Chicago 39, Ill.—A
 Photoircuits Corp., New St., Glen Cove, N.Y.
 Precision Electronics Inc., 9101 King Ave., Franklin Park, Ill.—C,I
 Pyramid Electric Co., 1445 Hudson Blvd., N. Bergen, N.J.
 Radio Corp. of America, Tube Div., 415 S. 5 St., Harrison, N.J.—A,B
 Radio Music Corp., 84 So. Water St., Port Chester, N.Y.—A,B
 Scott Inc., Herman Hosmer, 385 Putnam Ave., Cambridge 39, Mass.—D
 Sprague Products Co., N. Adams, Mass.—C,D
 Suporex Electronics Corp., 23 Atherton St., Yonkers, N.Y.—C
 Tele-Matic Industries, 1 Joralemon St., Brooklyn 1, N.Y.—C,I
 Texas Instruments Inc., 6000 Lemmon Ave., Dallas 9, Texas—A,B,C,D
 Triad Transformer Corp., 4055 Redwood Ave., Venice, Calif.—A,B
 United Technical Labs., Morristown, N.J.—B,C
 Vidair Electronics Mfg. Co., 576 W. Merrick Rd., Lynbrook, N.Y.—B,C,D,I
 Vokar Corp., Huron River Dr., Dexter, Mich.—C
 Waterproof Electric Co., 801 S. Main St., Burbank, Calif.—F
 Wheeler Insulated Wire Co., 150 E. Aurora St., Waterbury 20, Conn.—A
 Wilmar Mfg. Co., 2715 E. 14th St., Kansas City 27, Mo.—A,C

OMISSIONS

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.

10—FUSES & ACCESSORIES

Fuses A
 Fuse Clips B
 Fuse Holders C

Aerolite Electronics, 507 26th St., Union City, N.J.—A,B,C
 Alden Products Co., 117 No. Main St., Brockton 64, Mass.—A,B,C
 American Radio Hdwr., 152 MacQueston Pkwy., Mt. Vernon, N.Y.—A,B,C
 Arrow-Hart & Hegeman, 103 Hawthorn St., Hartford 6, Conn.—B
 Bel Fuse Inc., 311 Mountain Rd., Union City, N.J.
 Birnbach Radio Co., 145 Hudson St., New York 18, N.Y.—A,B,C
 Bogart Mfg. Corp., 315 Seigel St., Brooklyn 6, N.Y.—A,B,C
 Bussmann Mfg. Co., 2536 W. University, St. Louis 7, Mo.—A,B,C
 Chatham Electronics, 630 W. Mt. Pleasant Ave., Livingston, N.J.—A
 Cinch Mfg. Co., 1026 S. Homan Ave., Chicago 24, Ill.—B,C
 D & M Products, 13816 Hamilton Ave., Detroit 3, Mich.—A,B,C
 Federal Screw Products, 224 W. Huron St., Chicago 10, Ill.—B,C
 Gee-Lar Mfg. Co., 819 Elm St., Rockford, Ill.—A,B,C
 General Cement Mfg. Co., 919 Taylor Ave., Rockford, Ill.—A,B,C
 General Electric Co., Construction Material Div., 1285 Boston Ave., Bridgeport 2, Conn.—A
 General Fuse Co., 601 Main St., Matawan, N.J.—A,B,C
 Hi-Lo TV Antenna Corp., 3540 N. Ravenswood Ave., Chicago 13, Ill.—A,B,C
 Hubbell Inc., Harvey, State St. & Bostwick Ave., Bridgeport, Conn.—A
 I. E. Mfg. Co., 325 N. Hoyne Ave., Chicago 12, Ill.—B
 Insuline Corp. of America, 186 Granite St., Manchester, N.H.—B,C
 JFD Mfg. Co., 6101 16th Ave., Brooklyn 4, N.Y.—A,B,C
 Keystone Electronics, 423 Broome St., Des Plaines, Ill.—A,B,C
 Littlefuse, Inc., 1865 Miner St., Des Plaines, Ill.—A,B,C
 Philco Corp., Accessory Div., "A" & Allegheny Ave., Philadelphia 34, Pa.—A,B,C
 Raytheon Mfg. Co., Equip. Sales Div., Waltham, Mass.—B
 Sightmaster Corp., 111 Cedar St., New Rochelle, N.Y.—A
 Star Fuse Co., 235 Canal St., New York 13, N.Y.—A,B,C
 Stone City Machine & Tool Co., 1206 7th St., Bedford, Ind.—B,C
 Sylvania Electric Products Co., 1740 Broadway, New York 19, N.Y.—C
 Trico Fuse Mfg. Co., 2948 N. 5th St., Milwaukee 12, Wis.—A
 T-V Products Co., 145-68 228 St., Springfield Gardens 13, N.Y.—C
 Walsco Electronics, 3225 Exposition Pl., Los Angeles 16, Calif.—B
 Zierick Mfg. Corp., Beechwood & Rockdale Ave., New Rochelle, N.Y.—B

COLOR CODES

Power Transformer Leads:

Primary	Black
Common (tapped primary)	Black
Tap (tapped primary)	Black-Yellow
Finish (tapped primary)	Black-Red

Rectifier

Plate	Red
Plate center tap	Red-Yellow
Filament	Yellow
Filament center tap	Yellow-Blue

Amplifier

Filament No. 1	Green
Fil. No. 1 center tap	Green-Yellow
Filament No. 2	Brown
Fil. No. 2 center tap	Brown-Yellow
Filament No. 3	Slate
Fil. No. 3 center tap	Slate-Yellow

I-F Transformer Leads:

Primary plate	Blue
Primary B+	Red
Secondary grid	Green
Secondary grid return	White
Full-wave second diode	Violet

Audio Transformer Leads:

Primary plate	Blue
Primary B+	Red
Primary plate (push-pull)	Blue or Brown
Secondary grid	Green
Secondary return	Black
Secondary grid (push-pull)	Green or Yellow

**11—HARDWARE
ACCESSORIES &
MISCELLANEOUS PARTS**

Adapters A
Assemblies, magic eye B
Ballasts C
Bases, chassis D
Bearings, panel E
Brackets, mounting F
Bushings G
Caps, tube (grid & plate) H
Casters I
Circuit Breakers J
Cleaners K
Cloth, grille (see Sec. 21)
Connectors L
Cradles, chassis bases M
Decalcomanias N
Dials & Dial Accessories O
Escutcheons P
Feed-through Insulators Q
Flocking Material R
Grille, metal & screen T
Grommets U
Grounding Equipment V
Insulation, spaghetti sleeving W
Insulators & Insulating Materials X
Jacks Y
Kits, tool Z
Knobs AA
Lamps & Bulbs AB
Lubricants AC
Mounts AD
Padding AE
Pads, C & L AF
Paints, Lacquer & Varnish AG
Panels AH
Patch Cords AI
Plastic, polystyrene AJ
Plates, transformer AK
Plugs, hole AL
Plugs, power AM
Polishes AN
Printed Circuits AO
Pulleys, idler AP
Quartz Sheets AQ
Radio Hardware, misc. AR
Shafts, control AS
Shielding AT
Shields, tube & coil AU
Shims, speaker AV
Snaps & Studs AW
Sockets, connecting AX
Sockets, mounting AY
Screws, Nuts, Bolts, Washers AZ
Spray, plastic protective AAA
Standoffs, terminal AAB
Tape, friction & insulating AAC
Terminals AAD
Tubing, bakelite AAE
Windows, dial AAF

Abbott Plastics & Machine Co., 6322 N. Clark St., Chicago 22, Ill.—AJ
Acme Tool & Specialties Co., 224 N. Loomis St., Chicago 7, Ill.—FAR
Acro Tool & Die Works, 4554 Broadway, Chicago 40, Ill.—M
Aerolite Electronics, 507-26th St., Union City, N. J.—A,E,F,G,H,L,U,Y,AB,AD,AI,AL,AM,AR,AS,AT,AU,AW,AX,AY,AZ,AA
Alden Products Co., 117 N. Main St., Brockton, Mass.
Allied Engraving & Stamping Co., 161 Ellicott St., Buffalo 3, N.Y.—O,P,PAO
Allied Industries, 2500 Woodland Ave., Louisville 10, Ky.—A,L,Y,AL,AM
American Electronics Co., 1203 Bryant Ave., New York 59, N.Y.—AO
American Phenolic Corp., 1830 S. 54th St., Chicago 50, Ill.—H,L,P,Y,AJ,AM,AY,AA
American Radio Hardware Co., 152 MacQueston Pkwy So., Mt. Vernon, N.Y.—A,D,F,G,H,L,M,U,Y,Z,AA,AD,AI,AL,AM,AP,AR,AS,AU,AX,AY,AZ,AA
American Screw Co., 1670 W. Main St., William-antic, Conn.—AZ
Anchor Metal Co., 244 Boerum St., Brooklyn 6, N.Y.—CAT
Antenna Products, 3628 N. Lincoln Ave., Chicago 13, Ill.—FAJ,AA
AP Electric Lab., P. O. Box 862, Union, N.J.—K,R,X,AC,AG,AJ,AN,AAE
Argyle Electronics Co., 8 W. 18th St., New York 11, N.Y.—X
Audio Development Co., 2833 13th Ave. S., Minneapolis, Minn.—AI

Automatic Metal Products Corp., 315 Berry St., Brooklyn 11, N.Y.—L,AL,AM
Berger Communications, 109-01 72nd Rd., Forest Hills, N.Y.
Berkshire Laboratories, 692 Beaver Pond Rd., Lincoln, Mass.—AI
Bestcraft Products Co., 626 Broadway, New York 12, N.Y.—T
Birnbach Radio Co., 145 Hudson St., New York 13, N.Y.—Q,Y,Z,AA,AL,AM,AR,AS,AT,AZ,AA
Blaco Mfg. Co., 6541 Euclid Ave., Cleveland 3, Ohio—V
Browning Laboratories, Inc., 750 Main St., Winchester, Mass.—AO
Bud Radio Inc., 2118 E. 55 St., Cleveland 3, Ohio—Q,T
Calco Mfg. Co., Oakland Ave. & Penn R.R., Washington, Pa.—W,X,AJ
Cannon Electric Co., 3209 Humboldt St., Los Angeles 3, Calif.—L
Cardwell Electronics Productions, Allen D., 97 Whiting St., Plainville, Conn.—O
Carter Parts Co., 213 Institute Pl., Chicago 7, Ill.—Y
Cass Machine Co., 691 Antoinette St., Detroit 2, Mich.—A,D,F,G,X,AA,AD,AP,AR,AW,AZ
CBS-Hytron Div., Columbia Broadcasting Systems, 100 Endicott St., Danvers, Mass.—Z
Centralab Div., Globe Union Inc., 900 E. Keefe Ave., Milwaukee 1, Wisc.—F,G,O,Q,X,AA,AJ,AO,AS,AZ,AA
Chamrox Record Cleaner Co., Box 532, Rochester, N.Y.—K
Channel Master Corp., Ellenville, N.Y.—F,AD
Chemical Electronic Eng'g. Inc., 283 Main St., Matawan, N.J.—K
Cinch-Jones Div., Cinch Mfg. Corp., 1026 S. Homan Ave., Chicago 24, Ill.—L,AL,AM,AX,AY
Circon Component Co., 17544 Raymer St., Northridge, Calif.—L,AL,AM
Clarostat Mfg. Co., Washington St., Dover, N.H.—C,F,G,O,AA,AR,AS
Colortone Electronics Inc., 238 William St., New York 38, N.Y.—O
Commercial Products 417 Main St., Toledo 5, Ohio—AD
Conn-Cord, Inc., Progress Ave. & Monroe St., Union, N.J.—L,Y,AL,AM
Constad Laboratories, 214 W. 29 St., New York 1, N.Y.—F,AG
Creative Plastics Corp., Rt. 25-A, Stony Brook, N.Y.—G,U,X
Crowley & Co., Henry L., 1 Central Ave., W. Orange, N.J.—X
Cummins Portable Tools, Div. CBM Corp., 4720 Ravenswood Ave., Chicago 40, Ill.
Delco Radio Div., General Motors Corp., 1446 S. Home Ave., Kokomo, Ind.—G
Dialight Corp., 60 Stewart Ave., Brooklyn 37, N.Y.—L,O,AB
Digital Products, 7643 Fay Ave., LaJolla, Calif.—AO
D & M Products, 13316 Hamilton Ave., Detroit 3, Mich.—T



Dorn Equipment Corp., 88 Broad St., Boston 10, Mass.—A,L,O,Y,AI,AL,AM
Drake Mfg. Co., 1713 W. Hubbard St., Chicago 22, Ill.—O,ABAY
Dumont Labs. Inc., Allen B., Mobile Comm. Dept., 1500 Main St., Clifton, N.J.—AI,AL,AM
Elastic Stop Nut Corp. of America, 2830 Vauxhall Rd., Union, N.J.—AZ
Elco Corp., 190 W. Glenwood Ave., Philadelphia 19, Pa.—A,E,AI,AL,AM,AX,AY
Electronic Chemical Corp., 813 Communipaw Ave., Jersey City, N.J.
Erie Resistor Corp., 644 W. 12 St., Erie 6, Pa.—AO
Espy Mfg. Co., 528 E. 72 St., New York 21, N.Y.—D,F,G,M,O,Z,AH,AK
Federal Screw Products, Inc., 224 W. Huron St., Chicago 10, Ill.—U,AA,AB,AZ,AA
Fidelity Chemical Products, 470 Frelinghuysen Ave., Newark 5, N.J.—K
Gee-Lar Mfg. Co., 819 Elm St., Rockford, Ill.—A,L,U,V,Y,AA,AX,AY,AA
General Cement Mfg. Co., 919 Taylor Ave., Rockford, Ill.—F,G,H,I,K,L,M,O,Q,R,T,U,W,X,Y,Z,AA,AC,AD,AG,AI,AN,AR,AV,AZ,AAA,AAA,AA
General Products Corp., 107 Salem St., Union Springs, N.Y.—AA
Gonset Co., 801 S. Main St., Burbank, Calif.—D,F
Grant Pulley & Hdw. Corp., 31-85 Whitestone Pkwy., Flushing 54, N.Y.—AR
Hubbell Co., Harvey, State & Bostwick Ave., Bridgeport 2, Conn.—L,Y,Z
Hudson Lamp Co., 528 Elm St., Arlington, N.J.—O,AB
Ideal Industries, Inc., Sycamore, Ill.—K,AA
I.E. Mfg., 325 N. Hoyne Ave., Chicago 12, Ill.—F,V,X,AD

Imperial Radar & Wire Corp., 820 E. 233rd St., New York 66, N.Y.—P,V,X
Industrial Hardware Mfg. Co., 109 Prince St., New York 12, N.Y.—F,L,AR,AX,AY,AB,AA
Injection Molders Supply Co., 3514 Lee Rd., Cleveland, Ohio—AAA
Insuline Corp. America, 186 Granite St., Manchester, N.H.—A,D,E,F,G,H,L,R,T,U,W,Y,Z,AA,AP,AR,AZ
International Resistance Co., 401 N. Broad St., Philadelphia 8, Pa.—AAD
Irvington Varnish & Insulator, Div. Minn. Mining & Mfg. Co., 6 Argyle Terrace, Irvington 11, N.J.—X
Isolantite Mfg. Corp., Warren Ave., Stirling, N.J.—G,L,W,X,AA,AA
Jan Hardware Mfg. Co., 75 N. 11th St., Brooklyn 11, N.Y.—G,O,X,AA,AT,AA
Jerrod Electronics Corp., 26 & Dickinson Sts., Philadelphia 46, Pa.—A,L,AF
Jersey Specialty Co., Burgess Pl., Mountain View, N.J.—AAB
JFD Mfg. Co., 6101 16 Ave., Brooklyn 4, N.Y.—A,C,F,L,O,Q,U,V,Y,Z,AA,AC,AD,AL,AM,AR,AS,AX,AY,AA,AA
Johnson Co., E. F., Waseca, Minn.—E,G,O,P,Q,X,Y,Z,AU,AX,AY
Jontz Mfg. Co., 1101 McKinley, Mishawaka, Ind.—F,AD
Ken Miller Sales, 627 E. Maumee St., Adrian, Mich.
Kenwood Eng'g. Co., 265 Colfax Ave., Kenilworth, N.J.—F
Keystone Electronics Corp., 423 Broome St., New York 13, N.Y.—G,Q,X,Y,AH,AJ,AR,AA,AAE
Krylon, Inc., 2038 Washington Ave., Philadelphia 46, Pa.—AAA
Lee Electronic Labs., 233 Dudley St., Boston 19, Mass.—F,Y
Luxe Lamp Corp., 103 Columbus Ave., Tuckahoe, N.Y.—AB
Lynn Electronic Research, 9 W. Magnolia Blvd., Burbank, Calif.—L,AX,AA
Lytle Engineering & Mfg. Co., 105 W. Monroe St., Chicago 3, Ill.—D,G
Macson Co., 3260 Motor Ave., Los Angeles 34, Calif.—L,AI,AL,AM,AA
Magnavox Co., Ft. Wayne, Ind.—AO
Malco Tool & Mfg., 4025 W. Lake St., Chicago 24, Ill.—AAD
Mallory & Co., P. R., 3029 E. Washington St., Indianapolis 6, Ind.—O,Y,AA,AZ
Mandex Mfg. Co., 2608 W. 16th St., Chicago 8, Ill.—A,L,Y,AX,AY,AA
Master Mobile Mounts, 1306 Bond St., Los Angeles 15, Calif.—AU
Matchless Electric Co., 1700 Washington Blvd., Chicago 12, Ill.—AB
Merix Chemical Co., 1021 E. 55th St., Chicago 15, Ill.—K,AC,AN,AAA
Micro-Circuits Co., New Buffalo, Mich.—AG, AO
Millen Mfg. Co., James, 150 Exchange St., Malden 48, Mass.—E,H,O,Q,Y,ASA,UAU
Miller Radio & TV, 627 E. Maumee St., Adrian, Mich.—M
Minnesota Mining & Mfg. Co., 900 Fauquier Ave., St. Paul, Minn.—AAC
Mitchell Rand Insulation Co., 51 Murray St., New York 7, N.Y.—X
Modern-Aire Mfg. Corp., 4436 W. Roosevelt Rd., Chicago 24, Ill.—F,V,AD
Mole-Richardson Co., 937 No. Sycamore Ave., Hollywood 38, Calif.—AB
Moody Machine Products Co., 42 Dudley St., Providence 5, R.I.—Z
Mosley Electronics, 8622 St. Charles Rock Rd., St. Louis 14, Mo.—Q
Mueller Electric Co., 1583 E. 31 St., Cleveland 14, Ohio—X,V
Mycalex Corp. of America, 125 Clifton Blvd., Clifton, N.J.—Q,X,AY
Naer Corp., 11777 Santa Monica Blvd., Los Angeles 25, Calif.—X,Y,AA,AL,AM
Nagel-Chase Mfg. Co., 2811 N. Ashland Ave., Chicago 13, Ill.—I
National Carbon Co., Div. Union Carbide & Carbon Corp., 30 E. 42nd St., New York 17, N.Y.—AB
National Co., 61 Sherman St., Malden, Mass.—O,AA,AL,AM,AZ,AA
National Electric Products Corp., #2 Gateway Center, Pittsburgh 22, Pa.—F,AD
Nichols Products Co., 325 W. Main St., Moorestown, N.J.—L,O,AL,AM,AA
Norco Mfg. Co., 392 Blecker St., New York 14, N.Y.—AB
North American Model Products, Inc., 9802 Warwick Rd., Warwick, Va.—AO
Oxford Electric Corp., 3911 S. Michigan Ave., Chicago 15, Ill.—AB
Parker-Kalon Div., General American Transportation Corp., 200 Varick St., New York 14, N.Y.—AZ
Parker Metal Goods Co., 161-A Summer St., Worcester 8, Mass.—AD
Pentron Corp., 221 E. Cullerton Ave., Chicago 16, Ill.—AI
Permo Inc., 6415 Ravenswood Ave., Chicago 26, Ill.—K
Philo Corp., Accessory Div., "A" & Allegheny Ave., Philadelphia 34, Pa.—AA,AB,AC,AN
Philson Mfg. Co., 60 Sackett St., Brooklyn 31, N.Y.—AD
Photocircuits Corp., New St., Glen Cove, N.Y.—AO

Plasti-Kote, Inc., 425 Lakeside Ave., N.W., Cleveland 13, Ohio—AG,AAA
 Plymouth Electronics Corp., 50 Kingsbury St., Worcester 3, Mass.—D,F,AD,AH
 Polyken Products Dept., Kendall Co., 222 W. Adams St., Chicago 20, Ill.—AAC
 Pomona Electronics Co., 524 W. 5 Ave., Pomona, Calif.—A
 Q-Line Mfg. Corp., 1562-61 St., Brooklyn 19, N.Y.—F,V
 Quietrol Co., 395 St. John St., Spartanburg, S.C.—K,AC
 Radelco Mfg. Co., 7580 Garfield Blvd., Cleveland 25, Ohio—V
 Radio City Products Co., 101 W. 31 St., New York 1, N.Y.—F
 Radio Corp. of America, Tube Div., 415 S. 5 St., Harrison, N.J.—A
 Radio Merchandise Sales, Inc., 2016 Bronxdale Ave., New York 62, N.Y.—U,AAA
 Rare Earths, Inc., Box 488, Pompton Plains, N.J.—AN
 Reed & Prince Mfg. Co., 1 Duncan Ave., Worcester 1, Mass.—AZ
 Rhodes & Sons, 12 Porter St., Taunton, Mass.—AR
 Rite-Lite Mfg. Co., 3243 W. Lawrence Ave., Chicago 25, Ill.—AB
 Rohn Mfg. Co., 116 Limestone, Bellevue, Peoria Ill.—F,AD
 Romar Plastics Inc., 1311 E. Main St., St. Charles, Ill.—X,AA,AJ
 Sampson Chemical & Pigment Corp., 2830 W. Lake St., Chicago 12, Ill.—N,O,AB,AO
 Saxony Ceramics, Saxonyburg, Pa.—X
 Silicon Spray Products, 3514 Lee Rd., Cleveland 22, Ohio—AAA
 Smith Inc., Herman H., 2326 Nostrand Ave., Brooklyn 10, N.Y.—A,E,F,G,L,U,Y,AL,AL,AR,AZ,AA,BAAD
 South River Metal Prod. Co., 377 Turnpike, S. River, N.J.—A,F,V,X,AD,AR,AZ,AA,AB
 Standard Pressed Steel Co., Box 164, Jenkintown, Pa.—AZ
 Star Stainless Screw Co., 190 Union Ave., Paterson 1, N.J.—G,AL,AM,AZ
 Stevens Products Inc., 86 Main St., East Orange, N.J.—X
 Stone City Machine & Tool Co., 1206 7th St., Bedford, Ind.—A,F,AD
 Stratoseal Mfg. Co., 3039 W. Fullerton Ave., Chicago 47, Ill.—AAD
 Superex Electronics Corp., 23 Atherton St., Yonkers, N.Y.—AC
 Switchcraft, Inc., 1328 N. Halsted St., Chicago 22, Ill.—A,L,Y
 Technicraft Co., 1156 Commonwealth Ave., Boston 34, Mass.—O
 Tele Plastics Co., Div. 202 Broadway, Brooklyn 11, N.Y.—O,P,AH,AJ,AAF
 Telex, Inc., 1633 Eustis St., St. Paul 1, Minn.—A,IAO
 Thomas Associates, 4607 Alger St., Los Angeles 39, Calif.—F,AR
 Tinnerman Products, Inc., Dept. 16, P.O. Box 6888, Cleveland 1 Ohio—AR,AZ
 Trimm Inc., 400 W. Lake St., Libertyville, Ill.—Y,AL,AM
 Tru-Pine Co., 7638 Vincennes Ave., Chicago 20, Ill.—K,AG,AAA
 Tung-Sol Electric Inc., 95 8th Ave., Newark 4, N.J.—O,AB
 TV Development Corp., 2024 McDonald Ave., Brooklyn 23, N.Y.—AA
 United Screw & Bolt Corp., 2513 W. Cullerton St., Chicago 8, Ill.—AZ
 United Technical Labs., Morristown, N.J.—A,L
 United Transformer Co., 150 Varick St., New York, N.Y.—L
 Utica Drop Forge & Tool Corp., 2415 Whitesboro St., Utica 4, N.Y.—Z
 Van Cleef Bros., 7800 Woodlawn Ave., Chicago 19, Ill.—AAC
 Vector Electronic Co., 3352 San Fernando Rd., Los Angeles 65, Calif.—L,AX,AY,AAD
 Victor Insulators, Inc., Maple Ave., Victor, N.Y.—X
 Vidair Electronics Mfg. Co., 576 W. Merrick Rd., Lynbrook, N.Y.—F
 Vokar Corp., Huron River Dr., Dexter, Mich.—AO
 Waldom Electronics Inc., 4625 W. 53 St., Chicago 32, Ill.—E,G,O,P,Y,AA,AL,AU,AV,AAAD
 Walnut Machine Co., National Bank Bldg., South Bend, Ind.—AD
 Walsco Electronics Corp., 3225 Exposition Pl., Los Angeles 16, Calif.—G,Q,R,T,U,W,Z,AA,AC,AG,AL,AN,AR,AZ
 Ward Products Corp., Div. The Gabriel Co., 1148 Euclid Ave., Cleveland 15, Ohio—L
 Waterproof Electric Co., 801 S. Main St., Burbank, Calif.—D,F
 Wilmar Mfg. Co., 2715 E. 14th St., Kansas City 27, Mo.—AO
 Workman TV, Inc., 309 Queen Anne Rd., Teaneck, N.J.—K,AC,AR

12—KITS

Kits, audio & phonograph A
Kits, battery charger, eliminator B
Kits, TV booster C
Kits, electric eye equipment D
Kits, test equipment E
Kits, power supply F
Kits, radio control G

Kits, crystal set H
Kits, short-wave set I
Kits, AM, FM Tuner J
Kits, TV chassis & conversion K

Allied Radio Corp., 100 No. Western Ave., Chicago 80, Ill.—A,E,H,I
 Brooks Radio & Television Corp., 84 Vesey St., New York 7, N.Y.—J
 Colortone Electronics Inc., 238 William St., New York 38, N.Y.—E
 Electronic Instrument Co., 84 Withers St., Brooklyn 11, N.Y.—B,E
 Espey Mfg. Co., 528 E. 72 St., New York 21, N.Y.—A,E,J
 Federal Telephone & Radio Co., 100 Kingsland Rd., Clifton, N.J.—B,F
 Feiler Eng'g. & Mfg. Co., 8026 N. Monticello, Skokie, Ill.—E
 Heath Co., 305 Territorial, Benton Harbor, Mich.—A,B,E,F,I
 Hubbell Co., Harvey, State & Bostwick Ave., Bridgeport 2, Conn.—E
 Lee Electronic Labs., 233 Dudley St., Boston 19, Mass.—E,F
 Mallory & Co., P.R., 3029 E. Washington St., Indianapolis 6, Ind.—E,G
 Mattison Radio & Television Co., 10 W. 181st St., New York, N.Y.—K
 Merit Coil & Transformer Corp., 4427 N. Clark St., Chicago 40, Ill.—K
 Miller Co., J.W., 5917 S. Main St., Los Angeles 3, Calif.—H,J
 Pfanstiehl Chemical Co., 104 Lake View Ave., Waukegan, Ill.—A
 Philmore Mfg. Co., 113 University Pl., New York 3, N.Y.—G,H,K
 Precise Development Corp., 999 Long Beach Rd., Oceanside, N.Y.—E
 Radio Craftsmen Inc., 4401 N. Ravenswood Ave., Chicago, Ill.
 RAM Electronics Sales Co., S. Buckhout St., Irvington, N.Y.—K
 River Edge Industries, 5 River Edge Rd., River Edge, N.J.—A,J
 Tech-Master Corp., 443 Broadway, New York 13, N.Y.—K
 Thordarson-Meissner Mfg., Div., Maguire Industries, Inc., Mt. Carmel, Ill.—A
 Todd-Tran Corp., 156 Gramatan Ave., Mt. Vernon, N.Y.—K
 Triad Transformer Corp., 4055 Redwood Ave., Venice, Calif.—A
 United Technical Labs., Morristown, N.J.—E
 Videon Electronic Corp., 902 E. Michigan St., Indianapolis 2, Ind.—C,H,I,J
 Weathers Industries, Inc., 66 E. Gloucester Pike, Barrington 6, N.J.—A

13—MOTORS & TIMERS

Clocks, program A
Dynamotors E
Indicators, time C
Motors, antenna rotating D
Motors, phono recording F
Motors, power plant G
Motors, spring wound H
Motors, starting capacity I
Motors, phono turntable J
Timers, clock B

Alliance Mfg. Co., Lake Park Blvd., Alliance, Ohio—F
 Bendix Aviation Corp., Red Bank Div., Eatontown, N.J.—E
 Carter Motor Co., 2644 N. Maplewood Ave., Chicago 47, Ill.—E
 Crown Controls Co., Inc., 124 S. Washington St., New Bremen, Ohio—D
 DuMont Labs., Inc., Allen B., Mobile Comm. Dept., 1500 Main St., Clifton, N.J.—E
 Ecor, Inc., 1501 W. Congress St., Chicago 7, Ill.—E
 Electrical Service, 1271 Mission St., San Francisco 3, Calif.—B,C
 Electric Indicator Co., Camp Ave., Springdale, Conn.—J
 Electro Eng'g Products Co., 609 W. Lake St., Chicago 6, Ill.
 Electymex Motor Products Corp., Genoa, Ill.—B
 General Industries Co., Olive & Taylor Sts., Elyria, Ohio—D,F,J
 Good-All Elec. Mfg. Co., Ogallala, Nebr.—F,G
 Hansen Mfg. Co., R.R. #1, Princeton, Ind.—J
 International Register Co., 2620 W. Washington Blvd., Chicago 12, Ill.—B
 JFD Mfg. Co., 6101 16 Ave., Brooklyn 4, N.Y.—D
 Leader Electronics, 2925 E. 55 St., Cleveland 27, Ohio—D
 Mission-Western Engineers, 132 W. Colorado St., Pasadena, Calif.—E
 Pennwood Numechron Co., 7249 Frankstown Ave., Pittsburgh 8, Pa.—B
 Rek-O-Kut Co., 38-01 Queens Blvd., Long Island City 1, N.Y.—F,J
 Sessions Clock Co., Forestville, Conn.—B
 Wincharger Corp., E. 7th & Division Sts., Sioux City 2, Iowa—E

14—PHONOGRAPH EQUIPMENT & ACCESS.

Arms, pickup A
Bases, phonograph mounting B
Brushes, record C
Cabinets, phonograph D
Cable, phonograph (see Sec. 27)
Cartridges, ceramic, phono pickup E
Cases, phonograph carrying F
Cases, record G
Compensators, record H
Drives, phonograph I
Equalizers, phono preamp J
Gauges, needle pressure K
Inserts, 45 RPM L
Labels, recording M
Microscope, stylus N
Oscillators, phono O
Needles, playback P
Parts, phono, misc. Q
Phonographs, manual R
Players, transcription S
Record Changers, automatic T
Records, binaural U
Records, test, phono V
Turntables W

Aerolite Electronics, 507 26th St., Union City, N.J.—E
 Alliance Mfg. Co., Lake Park Blvd., Alliance, Ohio—W
 Amplifier Corp. of America, 398 Broadway, New York, N.Y.
 Ansley Co., Arthur, Doylestown, Pa.
 Argos Products, 310 Main St., Genoa, Ill.—F
 Astatic Corp., P.O. Box 120, Conneaut, Ohio—A
 Audak Co., 500 Fifth Ave., New York, N.Y.—E
 Autocrat Electronics Co., 5024 Elm St., Skokie 8, Ill.—A,S,T
 Bestcraft Products Co., 626 Broadway, New York 12, N.Y.—Q
 Bogen Co., David, 29 9th Ave., New York 14, N.Y.—B,F,H,J,R,S,W
 Brush Electronics Co., 3405 Perkins Ave., Cleveland 14, Ohio—E,M
 Califone Corp., 1041 N. Sycamore Ave., Hollywood 38, Calif.—A,W
 Centralab Div., Globe Union, Inc., 900 E. Keefe Ave., Milwaukee 1, Wisc.—Q
 Cook Laboratories, 114 Manhattan St., Stamford, Conn.—A,U,V
 Dubbings Co., 41-10 45th St., Long Island City 4, N.Y.—V
 Duotone Co., Louest St., Keyport, N.J.—C,L,N,P
 Ecor, Inc., 1501 W. Congress St., Chicago 7, Ill.—S,Q,AH
 Electronic Workshop, 26 W. 8 St., New York, N.Y.—A,E,J,P,R,W
 Electro-Voice, Inc., Buchanan, Mich.—A,D,E,J,P
 Electrovox Co., Inc., 60 Franklin St., E. Orange, N.J.—P
 Fairchild Recording Equipment Co., White-stone 57, N.Y.—E,J,W
 Fidelity Amplifier Co., 703 Willow St., Chicago 14, Ill.—R
 Gee-Lar Mfg. Co., 819 Elm St., Rockford, Ill.—M
 General Cement Mfg. Co., 919 Taylor Ave., Rockford, Ill.—I
 General Electric Co., Electronics Park, Syracuse, N.Y.—A,E,H,J,P
 General Industries Co., Olive & Taylor Sts., Elyria, Ohio—I,W
 G & H Wood Products Co., 75 N. 11 St., Brooklyn 11, N.Y.—B,D
 Hamilton Electronics Corp., 2726 Pratt Ave., Chicago 45, Ill.—S,W
 Hinners-Galanek Radio Corp., 25-14 Broadway, Long Island City 6, N.Y.—R
 Jensen Industries, Inc., 329 S. Wood St., Chicago, Ill.—N,P
 Kraft Bros., 1299 Jerome Ave., New York 52, N.Y.—D,F,R,T
 Lipps Eng'g, Edwin A., 5485 W. Washington Blvd., Los Angeles 16, Calif.—P
 Magnecord, Inc., 225 W. Ohio St., Chicago 10, Ill.—S
 Marine View Electronics, 744 E. 138 St., New York 54, N.Y.—J
 Michigan Electronics, 854 N. Rockwell St., Chicago 22, Ill.—A
 Midwest Radio & Television Corp., 909 Broadway, Cincinnati 2, Ohio—S,T
 Miller Mfg. Co., M. A., 4th & Church Sts., Libertyville, Ill.—P
 Newcomb Audio Products Co., 6824 Lexington Ave., Hollywood 38, Calif.—R,S
 Pacific Transducer Corp., 11921 W. Pico Blvd., Los Angeles 64, Calif.—A,E,J,K,N,P,Q,V
 Pentron Corp., 221 E. Cullerton Ave., Chicago, Ill.
 Permo, Inc., 6415 Ravenswood Ave., Chicago 26, Ill.—C,P

Pfanstiehl Chemical Co., 104 Lake View Ave., Waukegan, Ill.—A,E,H,J,P
 Philco Corp., Accessory Div., "A" & Allegheny Ave., Philadelphia 34, Pa.—A,T
 Pickering & Co., 309 Woods Ave., Oceanside, N.Y.—A,E,H,J
 Presto Recording Corp., P.O. Box 500, Paramus, N.J.—A,H,P,R,S,W
 Radio Corp. of America, Eng'g. Products Div., Camden, N.J.—W
 Radio Music Corp., 84 So. Water St., Port Chester, N.Y.—A,E,I,J,S,W
 Reoton Corp., 147 W. 22 St., New York 11, N.Y.—P
 Rek-O-Kut Co., 38-01 Queens Blvd., Long Island City 1, N.Y.—A,B,D,F,R,S,W
 River Edge Industries, 5 River Edge Rd., River Edge, N.J.—A,B,D,F,G,H,K
 Royal Diamond Tool Co., 172 Green St., Boston 3, Mass.—P
 Scott, Inc., Herman Hosmer, 385 Putnam Ave., Cambridge 89, Mass.—H,J
 Shura-Tone Products, Inc., 440 Adelphi St., Brooklyn, N.Y.—R
 Shure Bros., 225 W. Huron St., Chicago 10, Ill.—A,E
 Sonic Recording Products, Inc., 58 Mill Rd., Freeport, N.Y.—P
 Sonotone Corp., P.O. Box 200, Elmsford, N.Y.—E,F
 S.O.S. Cinema Supply Corp., 602 W. 52nd St., New York 19, N.Y.—S
 Televex Co., P.O. Box 101, Riverdale Station, New York 71, N.Y.—N,P
 Tetrad Co., 62 St. Mary St., Yonkers 2, N.Y.—P
 Toman & Co., E., 8700 W. 47 St., Lyons, Ill.—R
 Vanity Fair Electronics Corp., 50 S. 4th St., Brooklyn 11, N.Y.—R
 V-M Corp., Benton Harbor, Mich.—R,T
 Walsco Electronics Corp., 3225 Exposition Pl., Los Angeles 16, Calif.—I,V
 Weathers Industries, Inc., 66 E. Gloucester Pike, Barrington 6, N.J.—A,E,H,J,K,O,R,V
 Webster-Chicago Corp., 5610 W. Bloomingdale Ave., Chicago 39, Ill.—R,T
 Webster Electric Co., 1900 Clark St., Racine, Wisc.—A,E

15—PHOTOELECTRIC EQUIPMENT

Accessories, photoelectric A
 Cells, photoelectric B

Bradley Laboratories, Inc., 168 Columbus Ave., New Haven, Conn.—B
 DuMont Lab., Inc., Instrument Div., 760 Bloomfield Ave., Clifton, N.J.—B
 International Rectifier Corp., 1521 E. Grand Ave., El Segundo, Calif.—B
 Michigan Electronics, 854 N. Rockwell St., Chicago 22, Ill.—B
 Multi-Tron Lab., 4624 W. Wash. Blvd., Chicago 44, Ill.—A,E
 S.O.S. Cinema Supply Corp., 602 W. 52nd St., New York 19, N.Y.—A
 Tabet Mfg. Co., 1336 Ballentine Blvd., Norfolk 1, Va.—B
 U. M. & F. Mfg. Corp., 10929 Van Owne St., N. Hollywood, Calif.—A

16—POWER SUPPLIES & ACCESSORIES, COMPONENTS & PARTS

Battery Chargers A
 Battery Eliminators D
 Converters & Inverters, DC to AC . . . B
 Dividers, voltage C
 Dynamotors (see Sec. 13)
 Generators, power E
 Power Plants & Supplies F
 Regulators, voltage G
 Selenium Rectifiers (see Sec. 19)
 Vibrators, auto radio H

Acme Electronics Inc., Sub. Aerovox Corp., 2724 Peck Rd., Monrovia, Calif.—G
 Alco Electronics Mfg. Co., 3 Wolcott Ave., Lawrence, Mass.—B
 American Television & Radio Co., 300 E. 4th St., St. Paul 1, Minn.—A,B,D,H
 Applegate & Co., C. J., 1816 Grove St., Boulder, Colo.—G
 Barker & Williamson, 235 Fairfield Ave., Upper Darby, Pa.—F
 Beta Electric Corp., 333 E. 103 St., New York 29, N.Y.—F
 Bradley Laboratories, Inc., 168 Columbus Ave., New Haven, Conn.—B
 Carter Motor Co., 2644 N. Maplewood Ave., Chicago 47, Ill.—B,E
 C B C Electronics Co., 1310 Callowhill St., Philadelphia 23, Pa.—G
 Chatham Electronics Corp., 630 W. Mt. Pleasant Ave., Livingston, N.J.—G

Clarostat Mfg. Co., Washington St., Dover, N.H.—C,G
 Cornell-Dubilier Elec. Corp., South Plainfield, N.J.—A,B,H
 Delco-Remy Div., General Motors Corp., Anderson, Ind.
 Drake Co., R. L., 18 E. Central Ave., Miamisburg, Ohio—D
 Eicor, Inc., 1501 W. Congress St., Chicago 7, Ill.—B,F
 Electric Indicator Co., Camp Ave., Springdale, Conn.—B,G
 Electro Products Labs., Inc., 4501 N. Ravenswood Ave., Chicago 40, Ill.—D
 Federal Telephone and Radio Co., Division of IT&T, 100 Kingsland Rd., Clifton, N.J.—A
 Freed Transformer Co., 1718 Weirfield St., Brooklyn 27, N.Y.
 Gaskins & Co., 1005 Auroraway, Wheaton, Ill.
 Gates Electric Co., 65 W. Broadway, New York, N.Y.—G
 General Electric Co., Electronics Park, Syracuse, N.Y.
 G. & M. Equipment Co., 7315 Varna Ave., N. Hollywood, Calif.—B
 H & H Products Mfg., P. O. Box 2333, Terminal Annex, Los Angeles 54, Calif.—A
 International Rectifier Corp., 1521 E. Grand Ave., El Segundo, Calif.—A,H
 James Vibrapow Co., 4036 N. Rockwell St., Chicago 18, Ill.—B,H
 JFD Mfg. Co., 6101 16 Ave., Brooklyn 4, N.Y.—G
 Kato Eng'g Co., 1415 1st Ave., Mankato, Minn.—A,E
 Kearfott Co., 1378 Main Ave., Clifton, N.J.
 Kellogg Switchboard & Supply Co., 79 W. Monroe St., Chicago 8, Ill.
 Kepco Laboratories, 131-38 Sanford Ave., Flushing 55, N.Y.
 Kurman Electric Co., Inc., 35-18 37th St., Long Island City 1, N.Y.—H
 Lee Electronic Labs., 233 Dudley St., Boston 19, Mass.—F
 Leland Electric Co., P. O. Box 1060, Dayton, Ohio
 Mallory & Co., P. R., 3029 E. Washington St., Indianapolis 6, Ind.—A,F,H
 Marine View Electronics, 744 E. 138 St., New York 54, N.Y.—A,C,E
 McCoolpin-Christie Corp., 8410 W. 67 St., Los Angeles 43, Calif.
 Miller Co., Sanford, 691 Bedford Ave., Brooklyn 6, N.Y.—D
 Miller Instruments, Inc., Wm., 325 N. Halstead Ave., Pasadena 8, Calif.—B,G
 Mission-Western Engineers, 132 W. Colorado St., Pasadena, Calif.—B
 Multi-Tron Lab., 4624 W. Wash. Blvd., Chicago 44, Ill.—G
 Onan & Sons, D. W., 25 & University, S.E., Minneapolis 14, Minn.—A
 Opad-Green Co., 71-24 Warren St., New York 7, N.Y.—A



Peschel Electronics, Inc., 13 Garden St., New Rochelle, N.Y.—G
 Plastic Capacitors, Inc., 2511 W. Moffat St., Chicago 47, Ill.—G
 Power Transformer Co., 532 Mulberry St., Newark 5, N.J.—A,B,G
 Precise Measurements Co., 942 Kings Hwy., Brooklyn 23, N.Y.—G
 Radiart Corp., 3455 Vega Ave., Cleveland 13, Ohio—A,H
 Rapid Electric Co., 2881 Middletown Rd., New York 51, N.Y.—A,B,N
 Schauer Mfg. Corp., 4500 Alpine Ave., Cincinnati 36, Ohio—A,D
 Signalite Inc., 37-41 Neptune Hwy., Neptune, N.J.—G
 Summit Eng'g Co., 3324 Main St., Hartford, Conn.—A
 Terado Co., 1068 Raymond Ave., St. Paul 14, Minn.—B
 Tung-Sol Electric, Inc., 95 8th Ave., Newark 4, N.J.—G
 Universal Motor Co., 465 Universal Dr., Oshkosh, Wisc.—A
 Vokar Corp., Huron River Dr., Dexter, Mich.—D,G
 Welch Mfg. Co., W. M., 1515 Sedgwick St., Chicago 10, Ill.—A
 Wincharger Corp., E. 7th & Division Sts., Sioux City 2, Iowa—B,E

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17—RELAYS

Relays, coaxial A
 Relays, thermal B
 Relays, time delay C

Adams & Westlake, 1025 N. Michigan Ave., Elkhart, Ind.
 Advance Electric & Relay Co., 2435 N. Naomi St., Burbank, Calif.—A,C,AE
 Allied Control Co., 2 East End Ave., New York 21, N.Y.
 Amperite Co., 561 Broadway, New York, N.Y.
 Blonder-Tongue Labs., 526 North Ave., Westfield, N.J.—B
 Durakool Inc., 1010 N. Main St., Elkhart, Ind.—C
 Edison Inc., Thomas A., W. Orange, N.J.
 Electrical Service Co., 1271 Mission St., San Francisco 3, Calif.—C
 Federal Telephone & Radio Co., A Division of IT&T, 100 Kingsland Rd., Clifton, N.J.—C
 Guardian Electric Mfg. Co., 1621 W. Walnut, Chicago 40, Ill.—C
 Kurman Electric Co., Inc., 35-18 37th St., Long Island City 1, N.Y.—A,W
 Leach Relay Co., 5915 Avalon Blvd., Los Angeles 3, Calif.
 Potter & Brumfield, Princeton, Ind.—C
 Radio Corp. of America, Tube Div., 415 S. 5th St., Harrison, N.J.
 Thompson Products Inc., 2196 Clarkwood Rd., Cleveland 3, Ohio
 Ward, Leonard Electric Co., 115 MacQueen Pkwy., S., Mt. Vernon, N.Y.—B,C
 Weston Electrical Instrument Corp., 614 Frelinghuysen Ave., Newark 5, N.J.

18—RESISTORS & RESISTIVE CONTROLS

Attenuators A
 Controls, loudness, volume, tone, etc. B
 Line Cords, resistor C
 Pads, H, T, etc. D
 Potentiometers E
 Resistors, adjustable tap F
 Resistors, ballast G
 Resistors, carbon H
 Resistors, fixed composition I
 Resistors, fixed wire wound J
 Resistors, flexible K
 Resistors, molded L
 Resistors, power M
 Resistors, precision N
 Resistors, variable carbon O
 Resistors, variable wirewound P
 Resistors, vitreous Q
 Rheostats R
 Step-down Cords S
 Suppressors, auto ignition (see Sec. 9)

Acme Electric Heating Co., 1217 Washington St., Boston 18, Mass.—J
 Aerovox Corp., 740 Belleville Ave., New Bedford, Mass.—F,H,I,J,L,N,Q
 Allen-Bradley Co., 1326 S. 2nd St., Milwaukee, Wisc.—B,I
 Anchor Electronics, Inc., 717 Sip St., Union City, N.J.—J,N
 Applegate Co., C. J., 1816 Grove St., Boulder, Colo.—I
 Arnhold Ceramics, 1 E. 57 St., New York 22, N.Y.
 Atlas Resistor Co., 24 E. Coulter St., Philadelphia, Pa.—J,P
 Blonder-Tongue Labs., 526 North Ave., Westfield, N.J.—A
 Campbell Industries, Inc., 3806 St. Elmo Ave., Chattanooga 9, Tenn.—N
 Carter Parts Co., 213 Institute Pl., Chicago 7, Ill.—A,B,D,E,J,P,R
 Centralab Div., Globe Union, Inc., 900 E. Keefe Ave., Milwaukee 1, Wisc.—B,D,E,F,H,I,Q
 Chicago Industrial Instrument Co., 536 W. Elm St., Chicago 10, Ill.—E
 Chicago Telephone Supply Corp., 1142 W. Bardsley Ave., Elkhart, Ind.—N
 Cima Corp., 119 Braintree St., Allston, Mass.—J,N,O,P
 Clarostat Mfg. Co., Washington St., Dover, N.H.—A,B,D,E,F,G,H,J,K,M,N,O,P,R
 Columbia Resistors, Inc., 23 W. Washington Ave., Pearl River, N.Y.—J
 Continental Carbon, Inc., 13900 Lorain Ave., Cleveland 11, Ohio—H,I,J,L,N
 Corning Glass Co., Electronic Div., Corning, N.Y.
 Dale Products, 1350 28th Ave., Columbus, Nebr.—C,J,N
 DeJure Amco Corp., 45-01 Northern Blvd., Long Island City 1, N.Y.—E,M
 DuMont Labs., Inc., Allen B., Mobile Comm. Dept., 1500 Main St., Clifton, N.J.—A

Electra Mfg. Co., 2537 Madison Ave. Kansas City 8, Mo.
 Erie Resistor Corp., 644 W. 12 St., Erie 6, Pa.—N
 General Electric Co., Apparatus Div., 1 River Rd., Schenectady, N.Y.—J,N,O
 Hardwick, Hindle, Inc., 40 Hermon St., Newark 5, N.J.—E,F,J,M,P,Q,R
 Helipot Corp., 916 S. Meridian Ave., S. Pasadena, Calif.
 I. E. Mfg., 325 N. Hoyne Ave., Chicago 12, Ill.—H,J,O
 Instrument Resistors Co., 1036 Commerce Ave., Union, N.J.—J,N
 International Resistance Co., 401 N. Broad St., Philadelphia 8, Pa.—B,E,F,H,I,J,L,M,N,O,P,R
 I-T-E Circuit Breaker Co., 19th & Hamilton Sts., Philadelphia, Pa.
 Jarvis Electronics Corp., 6058 W. Fullerton Ave., Chicago 9, Ill.—E
 Jerrold Electronics Corp., 26 & Dickinson Sts., Philadelphia 46, Pa.—A,D
 JFD Mfg. Co., 6101 16th Ave., Brooklyn 4, N.Y.—C,G,I,P,S
 Kalbrell Labs., 1090 Moreno Blvd., San Diego 10, Calif.
 Mallory & Co., P.R., 3029 E. Washington St., Indianapolis 6, Ind.—A,B,D,E,F,H,I,J,K,O,P,Q,R
 Micro-Circuits Co., New Buffalo, Mich.—I
 Miller Electro-Research Labs., 5529 S. 5th St., Milwaukee 7, Wisc.—N
 Milwaukee Resistor Co., 700 W. Virginia St., Milwaukee 4, Wisc.—F,J,M,P,Q
 Muter Co., 1255 S. Michigan Ave., Chicago 5, Ill.—E,F,J,M,P
 Ohmite Mfg. Co., 3601 Howard St., Skokie, Ill.—A,B,D,E,F,H,I,J,L,M,N,O,P,Q,R
 Penn Television Products Co., Allegheny & Trenton Aves., Philadelphia 34, Pa.—A
 Philco Corp., Accessory Div., "A" & Allegheny Ave., Philadelphia 34, Pa.—A,B,F,H,I,J,K,O,P,Q,R
 Reon Resistor Corp., 117 Stanley Ave., Yonkers, N.Y.—J,M,N,Q
 Resistance Products Co., 714 Race St., Harrisburg, Pa.—N
 Resistors, Inc., 5226 W. 26 St., Chicago 50, Ill.—J,F
 Shallcross Mfg. Co., 520 Pusey Ave., Collingdale, Pa.—A,D,E,H,I,J,L,M,N,P,Q,R
 Sprague Products Co., N. Adams, Mass.—J,M,N
 Tech-OHM Resistor Corp., 200-15 32nd Ave., Bayside, L.I., N.Y.—J
 Tele-Matic Industries, 1 Joramon St., Brooklyn 1, N.Y.—A
 Tru-Ohm Products Division, Model Engineering & Mfg., Inc., 2800 N. Milwaukee Ave., Chicago 18, Ill.—J,P
 U. M. & F. Mfg. Corp., 10929 Van Owen St., N. Hollywood, Calif.—E,N
 Vokar Corp., Huron River Dr., Dexter, Mich.—J
 Ward Leonard Electric Co., 115 MacQueen Parkway, So. Mt. Vernon, N.Y.—F,J,M,Q,R
 Wirt Co., 5221 Greene St., Philadelphia 44, Pa.—B,E,J,O,P
 Workman TV, Inc., 309 Queen Anne Rd., Teaneck, N.J.—H
 Yonkers Industries Inc., 28 School St., Yonkers, N.Y.—N

19—SEMICONDUCTORS

Detectors, crystal A
Diodes, crystal B
Diodes, germanium C
Diodes, silicon D
Rectifiers, crystal E
Rectifiers, copper F
Rectifiers, diode G
Rectifiers, germanium power H
Rectifiers, selenium I
Transistors J

Amperex Electronic Corp., 230 Duffy Ave., Hicksville, L.I., N.Y.—B,C
 Astatic Corp., P.O. Box 120, Conneaut, Ohio—A
 Berkshire Laboratories, 692 Beaver Pond Rd., Lincoln, Mass.—A,B,C,E,G,I
 Bradley Laboratories, Inc., 168 Columbus Ave., New Haven, Conn.—C
 CBS-Hytron, Div., Columbia Broadcasting System, 100 Endicott St., Danvers, Mass.—B,C,D,J
 Clark Electronic Labs., Box 165, Palm Springs, Calif.—I
 Conant Laboratories, 6500 "O" St., Lincoln, Nebr.—F,I
 Electronic Devices, Inc., 429 12th St., Brooklyn 15, N.Y.—I
 Federal Telephone & Radio Co., 100 Kingsland Rd., Clifton, N.J.—C,I
 Fretco, Inc., 406 N. Craig St., Pittsburgh 13, Pa.—A,B,C
 Gahagan Inc., 6 E. 3rd St., Bethlehem, Pa.—A,C
 Gates Electric Co., 65 W. Broadway, New York, N.Y.—D,I
 General Electric Co., Electronics Park, Syracuse, N.Y.—J
 Germanium Products Sub., Radio Devel. & Research, 26 Cornelson Ave., Jersey City 4, N.J.—J

Hughes Aircraft Corp., Culver City, Calif.—C
 Hydro-Aire Sub Crane Co., 3060 Winona St., Burbank, Calif.
 International Rectifier Corp., 1521 E. Grand Ave., El Segundo, Calif.—C,G,H,I
 International Resistance Co., 401 N. Broad St., Philadelphia 8, Pa.—C,I
 Kemtron Electronic Products, Salem, Mass.—C,J
 National Union Radio Corp., 237 Jacksonville Rd., Hatboro, Pa.—C,E,G
 Opad-Garbo Co., 71-24 Warren St., New York 7, N.Y.—I
 Philco Corp., Accessory Div., "A" & Allegheny Ave., Philadelphia 34, Pa.—A,B,C,D,E,G,I
 Radio Corp. of America, Tube Div., 415 S. 5 St., Harrison, N.J.—C,J
 Radio Receptor Co., 251 W. 19th St., New York 11, N.Y.—A,B,C,E,G,H,I,J
 Raytheon Mfg. Co., 55 Chapel St., Newton, Mass.—J
 Sylvania Electric Products, Inc., 1740 Broadway, New York 19, N.Y.—A,B,C,D,I,J
 Tarzian, Inc., Sarkes, E. Hillside, Bloomington, Ind.—I
 Texas Instruments, Inc., 6000 Lemmon Ave., Dallas 9, Tex.—B,J
 Transistor Products, Inc., Snow & Union Sts., Boston 35, Mass.—C,J
 Tung-Sol Electric, Inc., 95 8th Ave., Newark 4, N.J.—C,J
 Webster Electric Co., 1900 Clark St., Racine, Wisc.—A
 Westinghouse Electric Corp., Electronic Tube Div., P.O. Box 284, Elmira, N.Y.—C,D,J
 Witelrad Electrical Mfg., 76 Pulaski St., Stamford, Conn.—D

20—SOLDERING IRONS & ACCESSORIES

Flux A
Paste, solder B
Solder C
Solder Guns D
Solder Irons E
Stands, soldering F
Tools, soldering G
Tips, soldering H

Acme Electric Heating Co., 1217 Washington St., Boston 18, Mass.—E
 Alpha Metals, Inc., 56 Water St., Jersey City 4, N.J.—A,B,C
 American Electrical Heater Co., 6110 Cass Ave., Detroit 2, Mich.—E,F,G,H
 American Mercantile Co., 33 W. 42nd St., New York 36, N.Y.—E
 Anchor Metal Co., 244 Boerum St., Brooklyn 6, N.Y.—A,B,C
 CBS-Hytron, Div., Columbia Broadcasting System, 100 Endicott St., Danvers, Mass.—G
 Cook Laboratories, 114 Manhattan St., Stamford, Conn.—C
 Drake Electric Works, 3656 Lincoln Ave., Chicago 13, Ill.—E
 Electric Soldering Iron Co., Deep River, Conn.—E
 Eltran Corp., 113 W. Station St., St. Anne, Ill.—B,L,U,V,AI,AK
 Gee-Lar Mfg. Co., 819 Elm St., Rockford, Ill.—H
 General Cement Mfg. Co., 919 Taylor Ave., Rockford, Ill.—A,B,H
 Handy & Harman, 82 Fulton St., New York 38, N.Y.—C
 Ideal Industries, Inc., Sycamore, Ill.—G
 Insuline Corp., America, 186 Granite St., Manchester, N.H.—E,H
 Kester Solder Co., 4201 Wrightwood Ave., Chicago 39, Ill.—A,B,C,F
 Kwikheat Mfg. Co., Div. Sound Equipment Corp., 3732 San Fernando Rd., Glendale 4, Calif.—E,F,H
 Lenk Mfg. Co., 30 Cummington St., Boston 15, Mass.—A,B,C,D,E,F,G,H
 Mallory & Co., P. R., 3029 E. Washington St., Indianapolis 6, Ind.—H
 Mico Instrument Co., 80 Trowbridge St., Cambridge 38, Mass.—A,B
 Mitchell Industries, Inc., Mineral Wells, Texas—E
 Modern Wire Co., 39-30 Review Ave., Long Island City 1, N.Y.—C
 Multicore Sales Corp., 164 Duane St., New York 13, N.Y.—A,C
 Ney Co., J. M., Hartford 1, Conn.—C
 Pfanstiehl Chemical Co., 104 Lake View Ave., Waukegan, Ill.—A
 Phillips Mfg. Co., 2816 Aldrich Ave., S., Minneapolis 8, Minn.—A,D,E,F,G,H
 Snap-On Tools Corp., 8104 28th Ave., Kenosha, Wisc.—D,E,H
 Technicraft Co., 1156 Commonwealth Ave., Boston 34, Mass.—E
 Ungar Electric Tools, 4101 Redwood Ave., Venice, Calif.—E,H
 Vernaline Products Co., P.O. Box 222, Hawthorne 1, N.J.—E,F,H
 Vulcan Electric Co., 88 Holten St., Danvers, Mass.—E,F,H
 Wall Mfg. Co., P., Grove City, Pa.—A,B,C,D,E,F,G,H
 Walsco Electronics Corp., 3225 Exposition Pl., Los Angeles 16, Calif.—A

Wassco Electric Products Corp., 126 W. Cass St., Joliet, Ill.—E,G,H
 Weller Electric Corp., 808 Packer St., Easton, Pa.—D
 Wen Products Co., 5806 Northwest Hwy., Chicago 31, Ill.—D

21—SOUND & RECORDING EQUIPMENT

Amplifiers A
Attenuators (see Sec. 18) B
Baffles & Enclosures, speaker B
Binaural Equipment C
Cable, microphone (see Sec. 27) D
Cloth, speaker grille D
Cones, loudspeaker E
Connectors, audio F
Control Boxes, hearing aid G
Cross-over Networks H
Custom Components I
Disc Recorders J
Discs, recording blanks K
Drivers, speaker L
Equalizers, tone M
Handsets, phone N
Headphones & Headphone Access O
Heads, recording magnetic P
Heads, recording disc Q
Horns, speaker R
Intercommunication Systems S
Kits, TV Headphone T
Loudspeakers U
Loudspeaker Parts & Access V
Megaphones W
Microphones & Accessories X
Mixers, audio Y
Pickups, telephone Z
Preamplifiers AA
Public Address Systems AB
Reels, tape AC
Repeaters, tape recording AD
Sound Systems, complete AG
Splicers, tape AE
Spools, wire AF
Tape Recorders AL
Tape, recording AH
Tuners (see Sec. 7) AI
Tweeters AI
Wire Recorders AM
Wire, recording magnetic AJ
Woofers AK

Acoustical Products Mfg. Co., Dorsa Ave., Livingston, N.J.—E
 Aerolite Electronics, 507 26th St., Union City, N.J.—F,I
 Aero-Tone Mfg. Co., 4836 Joy Rd., Detroit 4, Mich.—U
 Alamo Electronics Corp., 1415 N. Brazos St., San Antonio, Texas—A
 Allied Eng'g. Div., Allied Int'l Inc., 230 Park Ave., New York 17, N.Y.—A
 Allied Mfg. Corp., 605 61st St., W. New York, N.J.—A
 Allied Radio Corp., 100 N. Western Ave., Chicago 80, Ill.—A,AB
 Altec Lansing Corp., 9356 Santa Monica Blvd., Beverly Hills, Calif.—A,B,L,R,U,X,AA,AB,AG,AK
 American Elite, Inc., 1775 Broadway, New York 19, N.Y.—X
 American Microphone Co., 370 S. Fair Oaks Ave., Pasadena 2, Calif.—X
 American Phenolic Corp., 1830 S. 54th St., Chicago 50, Ill.—F
 Amperite Co., 561 Broadway, New York 12, N.Y.—X
 Ampex Corp., 934 Charter St., Redwood City, Calif.—A
 Amplifier Corp. of America, 398 Broadway, New York, N.Y.—AL
 Amuro Corp., 2835 N. Western Ave., Chicago 18, Ill.—AL
 Applegate Co., C. J., 1816 Grove St., Boulder, Colo.—A
 Approved Electronic Instruments Corp., 928 Broadway, New York 10, N.Y.—A,C,AA
 Astatic Corp., P.O. Box 120, Conneaut, Ohio—P,X
 Atlas Coil Inc., Cottage St., Derby, Conn.—AA
 Atlas Sound Corp., 1449 39th St., Brooklyn 18, N.Y.—B,H,L,R,U,W,X
 Audio Devices, Inc., 444 Madison Ave., New York, N.Y.—AH
 Beam Instruments Corp., 350 5th Ave., New York 1, N.Y.—A
 Becker Electronics Mfg. Corp., 1091 Rockaway Ave., Valley Stream, N.Y.—U
 Bell Sound Systems, Sub. Thompson Products, Inc., 555 Marion Rd., Columbus 7, Ohio—A,B,C,J,S,AB,AG,AL
 Bennett Laboratories, Inc., 2700 Bay Rd., Redwood City, Calif.—S

Berger Communications, 109-01 72nd Rd., Forest Hills, N.Y.
 Berlant Associates, 4917 W. Jefferson Blvd., Los Angeles 16, Calif.—A,P,Q,AH,AL
 Bogen Co., David, 29 9th Ave., New York 14, N.Y.—A,B,I,M,R,S,U,X,Y,AA,AB,AG,AH,AL,AK
 Bohn Sound Eng'g. Co., Lincoln Highway East, Ft. Wayne, Ind.—A
 Bozak Co., R. T., 114 Manhattan St., Stamford, Conn.—U,AI,AK
 British Electronic Sales Co., 23-03 45th Rd., Long Island City 1, N.Y.—AL
 Brociner Electronics Lab., 344 E. 32nd St., New York 16, N.Y.—A,M,U,AA
 Brook Electronics Inc., 34 DeHart Pl., Elizabeth 2, N.J.—A
 Browne Electronics, 12450 W. Washington Blvd., Venice Calif.—A
 Brush Electronics Co., 3405 Perkins Ave., Cleveland 14, Ohio—A,C,O,P,X,AA,AC,AH,AL
 Bud Radio Inc., 2118 E. 55 St., Cleveland 3, Ohio—B
 Calbest Eng'g. & Electronics Co., 828 N. Highland Ave., Hollywood 38, Calif.—A,S,AA,AB,AG
 Califone Corp., 1041 N. Sycamore Ave., Hollywood 38, Calif.—A,B,AB,AG
 Cannon Electric Co., 3209 Humboldt St., Los Angeles 3, Calif.—F,O
 Carbonneau Industries, 100 Lexington S.W., Grand Rapids 4, Mich.—U
 Centralab Div., Globe Union Inc., 900 E. Keefe Ave., Milwaukee 1, Wisc.—A,I
 Century Electronics Co., 211-04 99 Ave., Queens Village, N.Y.—O,S
 Cinaudagraph Corp., 7224 N. Clark St., Chicago 26, Ill.—U,AI
 Cleveland Electronics Inc., 6611 Euclid Ave., Cleveland 3, Ohio—H,S,U,V,AB,AG
 Codetypor Laboratories, 550 5th Ave., New York 19, N.Y.—S
 Collins Audio Products Co., P.O. Box 368, Westfield, N.J.—A
 Connecticut Telephone & Electric Corp., Meriden, Conn.—O
 Consolidated Radio Products Co., 350 W. Erie St., Chicago 10, Ill.—U
 Cooper Electronic Products, 4500 Melrose St., Philadelphia 24, Pa.—S
 Crescent Industries, 5900 Touhy Ave., Niles, Ill.—U,AL
 Dalmotron Co., 534 Laurel St., San Carlos, Calif.—S,AG
 Daystrom Electric Corp., 753 Main St., Poughkeepsie, N.Y.—AL
 Delco Radio Div., General Motors Corp., 1446 S. Home Ave., Kokomo, Ind.—U
 DeWald Radio & TV Corp., 35-15 37 Ave., Long Island City 1, N.Y.—J
 D & M Products, 13816 Hamilton Ave., Detroit 3, Mich.—B
 Dubbings Co., 41-10 45th St., Long Island City 4, N.Y.—AH
 DuKane Corp., St. Charles, Ill.—AL
 DuMont Labs. Inc., Allen B., Mobile Comm. Dept., 1500 Main St., Clifton, N.J.—A
 Duotone Co., Locust St., Keyport, N.J.—A,B,K,P,Q
 DX Radio Products Co., 2300 Armitage Ave., Chicago 47, Ill.—U,AI
 Eagle Speaker Co., 4056 W. Roosevelt Rd., Chicago 24, Ill.—U
 Eicor, Inc., Tape Recording Div., 1501 W. Congress St., Chicago 7, Ill.—AL
 Electronic Workshop, 26 W. 8 St., New York 11, N.Y.—A,B,H,L,U,AA,AB,AG,AL
 Electro-Voice, Inc., Buchanan, Mich.—A,B,H,I,L,R,U,V,X,AA,AL,AK
 Epcor Electronics, Inc., 140 Liberty St., New York 6, N.Y.—AA
 Espey Mfg. Co., 528 E. 72nd St., New York 21, N.Y.—A,C,H,I,M,S,Y,AA,AG
 Fairchild Recording Equipment Co., White-stone 57, N.Y.—A,AA,AH
 Federal Telephone and Radio Co., A Division of IT&T, 100 Kingsland Rd., Clifton, N.J.—S
 Feiler Eng'g. & Mfg. Co., 8026 N. Monticello, Skokie, Ill.—S
 Fidelitytone, Inc., 1616 Devon Ave., Chicago 26, Ill.—AH
 Fisher Radio Corp., 21-21 44th Dr., Long Island City 1, N.Y.—A,B,L,AA
 Fonotalk Corp., 11 S. LaSalle St., Chicago, Ill.—S
 Gee-Lar Mfg. Co., 819 Elm St., Rockford, Ill.—B
 General Cement Mfg. Co., 919 Taylor Ave., Rockford, Ill.—D,AH,AJ
 General Electric Co., Electronics Park, Syracuse, N.Y.—A,B,I,U,AA
 G & H Wood Products Co., 75 N. 11th St., Brooklyn 11, N.Y.—B,R
 G & M Equipment Co., 7815 Varna Ave., North Hollywood, Calif.—A,O
 Gonset Co., 801 S. Main St., Burbank, Calif.—A
 Gotham Television Corp., 123 W. 64th St., New York 23, N.Y.—A
 Graybar Electric Co., 420 Lexington Ave., New York 17, N.Y.—A,U,X,AA,AB,AH,AL,AK
 Grayline Eng'g. Co., 12243 Ave "O", Chicago 33, Ill.—A
 Hamilton Electronics Corp., 2726 Pratt Ave., Chicago 45, Ill.—A,S,X,Y,AA,AB,AG
 Heath Co., 305 Territorial, Benton Harbor, Mich.—A

Heppner Mfg. Co., P.O. Box 612, Round Lake, Ill.—U
 Industrial Television, Inc., 369 Lexington Ave., Clifton, N.J.—A
 Industrial Test Equipment Co., 55 E. 11th St., New York 3, N.Y.—A
 Jensen Industries, Inc., 329 S. Wood St., Chicago, Ill.—AC,AH
 Jensen Mfg. Co., 6601 S. Laramie Ave., Chicago 38, Ill.—B,E,H,L,R,V,U,AL,AK
 JFD Mfg. Co., 6101 16th Ave., Brooklyn 4, N.Y.—D
 Kaplan Products & Textiles, Inc., 180 W. Randolph St., Chicago 1, Ill.—D
 Keystone Electronics Corp., 423 Broome St., New York 13, N.Y.—I
 Klipsch & Associates, P.O. Box 64, Hope, Ark.—H,R
 Lansing Sound Inc., James B., 2439 Fletcher Dr., Los Angeles 39, Calif.—U,AG
 Lear, Inc., 11916 W. Pico Blvd., Los Angeles 64, Calif.—A,O,U
 Lipps Eng'g., Edwin A., 5485 W. Washington Blvd., Los Angeles 16, Calif.—P,Q
 Loez Sound Engrs., J. M., 2171 W. Washington Blvd., Los Angeles 18, Calif.—A,S,AB,AG
 Lowell Mfg. Co., 3030 Laclede Sta. Rd., St. Louis 17, Mo.—B
 Magnavox Corp., Ft. Wayne 4, Ind.—A,U,AI,AJ
 Magnecord Inc., 225 W. Ohio St., Chicago 10, Ill.—A,B,P,Y,AA,AH,AL
 Marine View Electronics, 744 E. 188th St., New York 54, N.Y.—A,C,H,M,S,Y,AA,AB
 Martin & Co., H. S., 1916 Greenleaf St., Evanston, Ill.—A,AA
 McIntosh Lab. Inc., 320 Water St., Binghamton, N.Y.—A,AA
 Michigan Electronics, 854 N. Rockwell St., Chicago 22, Ill.—W,AB,AC,AE,AH,AL,AM
 Miller Instruments, Inc., Wm., 325 No. Halstead Ave., Pasadena 8, Calif.—A
 Minnesota Mining & Mfg. Co., 900 Fauquier Ave., St. Paul 1, Minn.—AC,AH
 Morrow Radio Mfg. Co., 2794 Market St., Salem, Ore.—AG
 Motorola Inc., 4545 Augusta Blvd., Chicago 51, Ill.
 National Co., Inc., 61 Sherman St., Malden 48, Mass.—A
 Newcomb Audio Products Co., 6824 Lexington Ave., Hollywood 38, Calif.—A,C,Y,AA,AB
 Northern Products Co., 2210 N. Clark St., Chicago 14, Ill.—U
 ORRadio Industries, Inc., T-120 Marvyn Rd., Opelika, Ala.—AH
 Oxford Electric Corp., 3911 S. Michigan Ave., Chicago 15, Ill.—U,AI,AK
 Pathfinder Electronics, 6836 Lexington Ave., Los Angeles 38, Calif.—A,Y,AB
 Peirce Wire Recorder Corp., 5900 N. Northwest Hwy., Chicago 31, Ill.—P,Q,AH
 Pentron Corp., 221 E. Cullerton Ave., Chicago 16, Ill.—B,P,X,Y,Z,AA,AC,AD,AH,AL

**TECHNICIAN
 BUYERS DIRECTORY**

Perfection Electric Co., 2535 S. Wabash Ave., Chicago 16, Ill.—U
 Permo, Inc., 6415 Ravenswood Ave., Chicago 26, Ill.—A,H,AJ
 Permoflux Corp., 4900 W. Grand Ave., Chicago 39, Ill.—B,C,G,H,I,N,O,T,U,V,X,Z,AH
 Pfanstiel Chemical Co., 104 Lake View Ave., Waukegan, Ill.—AA
 Philmore Mfg. Co., 113 University Pl., New York 3, N.Y.—O,T,X
 Physical Research Assoc., 1 Azurelle Dr., Malibu, Calif.—A,B,U,AI,AK
 Pickering & Co., 309 Woods Ave., Oceanside, N.Y.—M,AA
 Pilot Radio Corp., 37-06 36th St., Long Island City 1, N.Y.—A,I,AA
 Plymouth Electronics Corp., 50 Kingsbury St., Worcester 3, Mass.—H
 Precision Electronics Inc., 9101 King Ave., Franklin Park, Ill.—A,C,M,AA,AB,AG
 Presto Recording Corp., P.O. Box 500, Paramus, N.J.—A,J,K,M,P,Q,AA,AH
 Quam Nichols Co., Marquette Rd. & Prairie Ave., Chicago 87, Ill.—U
 Quincy Speaker Mfg. Corp., 221 Oak St., Quincy, Ill.—U,AI,AK
 Racon Elec. Co., 52 E. 19th St., New York 3, N.Y.—H,R,U,V
 Radio Corp. of America, Eng'g. Products Div., Camden, N.J.—A,B,J,P,S,U,X,AA,AB,AG,AH,AI,AK,AL
 Radio Corp. of America, Tube Div., 415 S. 5 St., Harrison, N.J.—V
 Radio Craftsmen, Inc., 4401 N. Ravenswood Ave., Chicago, Ill.
 Radio Music Corp., 84 S. Water St., Port Chester, N.Y.—A,M,Y,AA
 Rangertone Inc., 73 Winthrop St., Newark 4, N.J.—AH
 Recordisco Corp., 395 Broadway, New York 13, N.Y.—K

Reeves Soundcraft Corp., 10 E. 52nd St., New York 22, N.Y.—K,AC,AH
 Regency Div., I.D.E.A. Inc., 7900 Pendleton Pike, Indianapolis 26, Ind.—A
 Rek-O-Kut Co., 38-01 Queens Blvd., Long Island City 1, N.Y.—A,U,AB
 Revere Camera Co., 320 E. 21 St., 16, Ill.—AL
 R. J. Audio Products, 164 Duane St., New York 13, N.Y.—B
 Roanwell Corp., 662 Pacific St., Brooklyn 17, N.Y.—N,O,X
 Rowe Industries, 1702 Wayne St., Toledo 9, Ohio—A,H,L,R,U
 Russell Speaker Co., 6158 S. Kedzie Ave., Chicago, Ill.—U
 Sargent-Raymont Co., 1401 Middle Harbor Rd., Oakland 20, Calif.—A
 Scott Inc., Herman Hosmer, 385 Putnam Ave., Cambridge 39, Mass.—H,AA
 Setchell Carlson Inc., 330 5th Ave., N. New Brighton 12, Minn.—AB,AG
 Shure Bros., 225 W. Huron St., Chicago 10, Ill.—N,P,X
 Simpson Mfg. Co., Mark, 32-28 49th St., Long Island City 3, N.Y.—A,J,S,Y,AA,AB,AG,AL
 Smith-Meeker Eng'g. Co., 157 Chambers St., New York 7, N.Y.—AB
 Sonic Recording Products Inc., 58 Mill Rd., Freeport, N.Y.—K
 Sonotone Corp., Elmsford, N.Y.—A
 Soroban Eng'g., Box 117, Melbourne, Fla.—P,Q
 S.O.S. Cinema Supply Corp., 602 W. 52nd St., New York 19, N.Y.—A,B,H,M,O,AC,AE,AH
 Speak-O-Phone Recording & Equip. Co., 28 W. 60th St., New York 23, N.Y.—J,AL
 Stancil-Hoffman Corp., 921 N. Highland Ave., Hollywood 38, Calif.—AH
 Stephens Mfg. Corp., 8538 Warner Dr., Culver City, Calif.—A,B,E,H,L,R,U,X,AG,AI,AK
 Stevens Products Inc., 86 Main St., East Orange, N.J.—E
 Stromberg-Carlson Co., Sound Equip. Div., 1225 Clifford Ave., Rochester 21, N.Y.—A,B,I,L,N,U,X,AA,AB,AG,AI,AK
 Talk-A-Phone Co., 1512 S. Pulaski Rd., Chicago 23, Ill.—S
 Telectrosonic Corp., 35-18 37 St., Long Island City 1, N.Y.—AL
 Thordarson-Meissner Mfg. Div., Maguire Industries, Inc., 7th & Belmont Sts., Mt. Carmel, Ill.—A
 Tibbetts Industries, Colcord Ave., Camden, Me.—X
 Trimm, Inc., 400 Lake St., Libertyville Ill.—O
 Turner Co., 909 17th St., N.E., Cedar Rapids, Iowa—X
 U. S. Recording Co., 1121 Vermont Ave., N.W., Washington 5, D.C.—AH
 Universal Microphone Co., 424 Warren Lane, Inglewood, Calif.—X
 University Loudspeakers, Inc., 80 S. Kensico Ave., White Plains, N.Y.—H,L,U,AI,AK
 Univox Corp., 102 Warren St., New York 7, N.Y.—A
 Utah Radio Products Co., 1123 E. Franklin St., Huntington, Ind.—B,U,V
 Valentino, Inc., Thomas Jr., 150 W. 46th St., New York 36, N.Y.—J,AH
 Valley Industries, P. O. Box 362, Algonquin, Ill.—AL
 Vidair Electronics Mfg. Co., 576 W. Merrick Rd., Lynbrook, N.Y.—A
 V-M Corp., Benton Harbor, Mich.—AB
 Vocaline Co. of America Inc., Coulter St., Old Saybrook, Conn.—S
 Waldom Electronics Inc., 4625 W. 53rd St., Chicago 32, Ill.—E,V
 Walsco Electronics Corp., 3225 Exposition Pl., Los Angeles 16, Calif.—D
 Warren Corp., 21 Hanse Ave., Freeport, N.Y.—AL
 Waterproof Electric Co., 801 S. Main St., Burbank, Calif.—A
 Webster-Chicago Corp., 5610 W. Bloomingdale Ave., Chicago 39, Ill.—AH,AJ,AL,AM
 Webster Electric Co., 1900 Clark St., Racine, Wisc.—A,P,S,Y,AB,AH,AL
 Wheeler Insulated Wire Co., 150 E. Aurora St., Waterbury 20, Conn.—N,S
 Wilcox-Gay Corp., Charlotte, Mich.—A,J,K,AH,AL
 Wilmar Mfg. Co., 2715 E. 14th St., Kansas City 27, Mo.—A,S
 Wright, Inc., 2235 University Ave., St. Paul, Minn.—U
 Wright-Zimmerman, Inc., 330 5th Ave., New Brighton, Minn.—U
 Wunderlich Radio Co., 2 5th Ave., New York 11, N.Y.—A

22—SWITCHES

Switches, anti-capacity	..... A
Switches, coaxial	..... B
Switches, foot	..... C
Switches, gang	..... D
Switches, knife	..... E
Switches, lever	..... F
Switches, mercury	..... G
Switches, micro	..... H
Switches, push	..... I
Switches, push-button	..... J

Switches, rotary K
 Switches, slide L
 Switches, snap-action M
 Switches, thermal N
 Switches, time O
 Switches, toggle P
 Switches, trigger Q
 Switches, volume control R

Bridges C
 Calibrators, frequency D
 Calibrators, voltage E
 Checkers, condenser F
 Checkers, transformer G
 Checkers, vibrator H
 Clippers, sine-wave I
 Decades, capacitance J
 Decades, resistance K
 Frequency Standards L
 Galvanometers M
 Generators, audio N
 Generators, color signal AK
 Generators, marker O
 Generators, pattern P
 Generators, signal RF, IF Q
 Generators, sweep R
 Meters, audio S
 Meters, coin AL
 Meters, field-strength T
 Meters, frequency U
 Meters, grid-dip V
 Meters, time W
 Meters, watt Y
 Multimeters Z
 Ohmmeters AA
 Oscillators, VFO AB
 Oscilloscopes, cathode-ray AC
 Stroboscopes AD
 Testers, battery AE
 Testers, continuity AF
 Testers, tube & set combination AG
 Thermocouples AH
 Tracers, signal AI
 Voltmeters X
 Voltmeters, vacuum tube AJ

Gates Electric Co., 65 W. Broadway, New York, N.Y.—AE
 General Electric Co., Electronics Park, Syracuse, N.Y.
 General Test Equipment Co., 38 Argyle Pk., Buffalo 22, N.Y.—Q
 G. & M. Equipment Co., 7315 Varna Ave., N. Hollywood, Calif.—L,Q,R
 Granco Products, Inc., 36-17 20th Ave., Long Island City 5, N.Y.—Q
 Haydon Mfg. Co., 245 E. Elm St., Torrington, Conn.—W
 Heath Co., 305 Territorial, Benton Harbor, Mich.—A,C,E,F,H,J,K,N,O,P,Q,R,S,U,V,X,Y,Z,AA,AB,AC,AE,AG,AI,AJ
 Hickok Electrical Instrument Co., 10514 Dupont Ave., Cleveland 8, Ohio—A,L,N,O,P,Q,R,U,X,Y,Z,AA,AB,AC,AE,AG,AJ
 Hoyt Electrical Instrument Works, 42 Carleton St., Cambridge, Mass.—A,X
 Hycon Mfg. Co., 2961 E. Colorado St., Pasadena 8, Calif.—Q,R,Z,AD,AF,AJ
 Ideal Industries, Inc., Sycamore, Ill.—AF
 Industrial Television Inc., 359 Lexington Ave., Clifton, N.J.
 Industrial Test Equipment Co., 55 E. 11th St., New York 3, N.Y.—C,Y,AJ
 Instrument Labs., 315 W. Walton Pl., Chicago 10, Ill.—Z
 International Register Co., 2620 W. Washington Blvd., Chicago 12, Ill.—AL
 Jackson Electrical Instrument Co., 18 S. Patterson Blvd., Dayton 2, Ohio—F,N,O,Q,R,AC,AF,AG,AJ
 Jerrold Electronics Corp., 26 & Dickinson Sts., Philadelphia 46, Pa.—T
 Kato Engineering Co., 1415 First Ave., W. Mankato, Minn.
 Kay Electric Co., 14 Maple Ave., Pine Brook, N.J.—O,P,Q,R
 Keystone Electronics Corp., 423 Broome St., New York 13, N.Y.—AF
 Kirby Products Co., 20 E. Herman St., Philadelphia 44, Pa.—G,O,Z,AE
 Lampkin Laboratories, Bradenton, Fla.—U
 Lear, Inc., 11916 W. Pico Blvd., Los Angeles 64, Calif.—T
 Lee Electronic Labs., 233 Dudley St., Boston 19, Mass.—F,AE,AF,AG,AI
 Linear Equipment Labs., Brightwater Place, Massapequa, N.Y.—V,AC
 Marion Electrical Instrument Co., Manchester, N.H.—A,M,S,U,W,X,Z,AA
 Meters, Inc., 6353 N. Keystone Ave., Indianapolis 20, Ind.—A,M,S,X,AA
 Millen Mfg. Co., James, 150 Exchange St., Malden 48, Mass.—U,V
 Miller Instruments, Inc., Wm., 325 N. Hallstead Ave., Pasadena 8, Calif.—M
 Mitchell Rand Insulation Co., 51 Murray St., New York 7, N.Y.—H
 Moss Electronic Distrib. Co., 3849 10th Ave., N.Y., N.Y.—AG
 Nichols Products Co., 325 W. Main St., Moorestown, N.J.—C
 Ohmite Mfg. Co., 3601 Howard St., Skokie, Ill.—K
 Opad-Green Co., 71-24 Warren St., New York 7, N.Y.—AE
 Pacific Transducer TB Corp., 11921 W. Pico Blvd., Los Angeles 64, Calif.—N,R,AD
 Philco Corp., Accessory Div., "A" & Allegheny Ave., Philadelphia 34, Pa.—O,P,Q,R,T,X,Y,Z,AC,AG,AH,AI,AJ
 Precise Development Corp., 999 Long Beach Rd., Oceanside, N.Y.—C,F,J,K,N,O,Q,R,X,AB,AC,AG,AJ
 Precise Measurements Co., 942 Kings Hwy., Brooklyn 23, N.Y.—C
 Precision Apparatus Co., 92-27 H. Harding Blvd., Elmhurst, L.I., N.Y.—A,N,O,Q,R,X,Z,AA,AC,AG,AJ
 Precision Electronics, Inc., 9101 King Ave., Franklin Park, Ill.—AI
 Pres Probe Co., 4034 N. 6th St., Milwaukee 2, Wisc.—F
 Pyramid Electric Co., 1445 Hudson Blvd., N. Bergen, N.J.
 Pyrometer Instrument Co., Bergenfield, N.J.—AH
 Radio City Products Co., 101 W 31 St., New York 1, N.Y.—A,C,F,G,N,O,P,Q,R,U,X,Z,AA,AC,AE,AG,AJ
 Radio Corp. of America, Tube Div., 415 S. 5th St., Harrison, N.J.—A,D,E,N,Q,R,Z,AA,AB,AE,AJ,AK
 Radio Merchandise Sales, Inc., 2016 Bronxdale Ave., New York 62, N.Y.—AG
 Radion Corp., 1130 W. Wisconsin Ave., Chicago 14, Ill.—T
 Reverse Corp. of America, 845 N. Colony Rd., Wallingford, Conn.—AH
 Rowe Industries, 1702 Wayne St., Toledo 9, Ohio—AE
 Shallerross Mfg. Co., 520 Pusey Ave., Collingdale, Pa.—C,J,K,M,S,X,AA,AF,AJ
 Simpson Electric Co., 5216 Kinzie St., Chicago 44, Ill.
 Sittler Corp., 180 N. Ada St., Chicago 7, Ill.—AF
 Smithguld, Inc., 360 W. 8th St., Erie 2, Pa.—AF
 Special Instruments Lab., Inc., 312 W. Vine St., Knoxville, Tenn.—C,W
 Sterling Mfg. Co., 7201 Wentworth Ave., Cleveland 2, Ohio—A,X
 Summit Eng'g Co., 3324 Main St., Hartford, Conn.—C,T,AF
 Superex Electronics Corp., 23 Atherton St., Yonkers, N.Y.—AG

Aerolite Electronics, 507 26th St., Union City, N.J.—E,L,M,P
 American Radio Hardware Co., 152 MacQuesten Pkwy. So., Mt. Vernon, N.Y.—A,L,P
 Arrow-Hart and Hegeman Electric Co., 103 Hawthorn St., Hartford 6, Conn.—J,K,M,P
 Birnbach Radio Co., 145 Hudson St., New York 13, N.Y.—E,I,J,K,L,M,P,R
 Cardwell Electronics Productions, Allen D., 97 Whiting St., Plainville, Conn.—K
 Carling Electric, Inc., 505 New Park Ave., West Hartford 10, Conn.—J,L,M,P
 Carter Parts Co., 213 Institute Pl., Chicago 7, Ill.—F,J,K,P,R
 Centralab Div., Globe Union, Inc., 900 E. Keefe Ave., Milwaukee 1, Wisc.—D,F,H,I,K,L,M,N,P,R
 Clorostat Mfg. Co., Washington St., Dover, N.H.—I,K,M,R
 Dow-Key Co., Warren, Minn.—B
 Ebert Electronics Corp., 212-26 Jamaica Ave., Queens Village 28, N.Y.—G
 Erie Resistor Corp., 644 W. 12th St., Erie 6, Pa.—D,F,K
 Espey Mfg. Co., 528 E. 72nd St., New York 21, N.Y.—P
 Federal Anti Capacity Switch Corp., 72 Kingsley St., Buffalo 8, N.Y.—A
 Federal Telephone & Radio Co., 100 Kingsland Rd., Clifton, N.J.—A
 Fenwal, Inc., Pleasant St., Ashland, Mass.—N
 Gaskins Co., 1005 Auroraway, Wheaton, Ill.
 Gee-Lar Mfg. Co., 819 Elm St., Rockford, Ill.—F,I,J,K,L,P
 General Cement Mfg. Co., 919 Taylor Ave., Rockford, Ill.—J,L,P
 Grayhill, 561 Hillgrove, LaGrange, Ill.—J,K,M
 Guardian Electric Mfg. Co., 1621 W. Walnut St., Chicago 40, Ill.
 Haydon Switch, Inc., 232 N. Elm St., Waterbury, Conn.—K,M,P
 Insuline Corp., America, 186 Granite St., Manchester, N.H.—E,L,P
 International Register Co., 2620 W. Washington Blvd., Chicago 12, Ill.—O
 JFD Mfg. Co., 6101 16th Ave., Brooklyn 4, N.Y.—B,E,P
 Kellogg Switchboard & Supply Co., 79 W. Monroe St., Chicago 3, Ill.
 Leader Electronics, Inc., 2925 E. 55th St., Cleveland 2, Ohio—K
 Mallory & Co., P. R., 3029 E. Washington St., Indianapolis 6, Ind.—F,J,K,L,O,R
 Micro Switch Div., Minneapolis-Honeywell Regulator Co., Freeport, Ill.—C,D,G,H,I,J,K,L,M,P
 Muter Co., 1255 S. Michigan Ave., Chicago 5, Ill.—E,J,L,M
 Mycalex Corp. of America, 125 Clifton Blvd., Clifton, N.J.—K
 Naer Corp., 11777 Santa Monica Blvd., Los Angeles 25, Calif.—K
 Network Mfg. Corp., 213 W. 5th St., Bayonne, N.J.—J,K,L,P
 Ohmite Mfg. Co., 3601 Howard St., Skokie, Ill.—I,K
 Philco Corp., Accessory Div., "A" & Allegheny Ave., Philadelphia 34, Pa.—D,E,J,K,L,P,R
 Philmore Mfg. Co., 113 Union Pl., New York 3, N.Y.—E,K,L,P
 Radio Merchandise Sales, Inc., 2016 Bronxdale Ave., New York 62, N.Y.—E,N
 Recora Co., 56 W. 103rd St., Chicago 28, Ill.—C,Y
 Reverse Corp. of America, 845 N. Colony Rd., Wallingford, Conn.—P
 Roanwell Corp., 662 Pacific St., Brooklyn 17, N.Y.—J,M
 Sessions Clock Co., Forestville, Conn.—M
 Shallerross Mfg. Co., 520 Pusey Ave., Collingdale, Pa.—D,J,K
 Smith, Inc., Herman H., 2326 Nostrand Ave., Brooklyn 10, N.Y.—E,I,J,K,L,M,P
 Sutton Electronic Co., 426 W. Short St., Lexington, Ky.—P
 Switchcraft, Inc., 1328 N. Halsted St., Chicago 22, Ill.—F,J,K,P
 Thompson Products Inc., 2196 Clarkwood Rd., Cleveland 3, Ohio
 Tung-Sol Electric, Inc., 95 8th Ave., Newark 4, N.J.—N
 United Electric Controls Co., 85 School St., Watertown 72, Mass.—M,N
 Walsco Electronics Corp., 3225 Exposition Pl., Los Angeles 16, Calif.—K,P
 Ward Leonard Electric Co., 115 MacQuesten Pkwy., S., Mt. Vernon, N.Y.—I,J,K
 Wirt Co., 5221 Greene St., Philadelphia 44, Pa.—L

A.B.T. Mfg. Co., 715 N. Kedzie Ave., Chicago 12, Ill.—AL
 Aerovox Corp., 740 Belleville Ave., New Bedford, Mass.—C,F
 American Electronic Mfg., 9503 W. Jefferson Blvd., Culver City, Calif.—R
 American Thermo-Electric Co., 198-11 Hollis Ave., Hollis, N.Y.—AH
 Approved Electronic Instrument Corp., 928 Broadway, New York 10, N.Y.—P,Q,R,T
 Atlas Coil, Inc., Cottage St., Derby, Conn.—AH
 Barker & Williamson, 235 Fairfield Ave., Upper Darby, Pa.—C
 Barrett Electronics, 22319 Kathryn Ave., Torrance, Calif.—F,X,Z,AF
 Beam Instruments Corp., 350 5th Ave., New York, N.Y.—AC
 Berkshire Laboratories, 692 Beaver Pond Rd., Lincoln, Mass.—I,O,AD
 Browning Laboratories, Inc., 750 Main St., Winchester, Mass.—U,AC
 Brush Electronics Co., 8405 Perkins Ave., Cleveland 14, Ohio—C
 Burlington Instrument Corp., 1102 4th St., Burlington, Iowa
 Century Electronics Co., 8509 21st Ave., Brooklyn 14, N.Y.—F,AF,AG,AI
 Chatham Electronics Corp., 630 W. Mt. Pleasant Ave., Livingston, N.J.—AG
 Chicago Industrial Instrument Co., 536 W. Elm St., Chicago 10, Ill.—A,C,E,F,X,Z,AA,AE,AF,AH,AI,AJ
 Clarostat Mfg. Co., Washington St., Dover, N.H.—K
 Colortone Electronics, Inc., 238 William St., New York 38, N.Y.—D,E,L,N,U,X,AC,AJ
 Cornell-Dubilier Elec. Corp., S. Plainfield, N.J.—C,F,J
 Crest Laboratories, Inc., 84-11 Rockaway Beach Blvd., Rockaway Beach 93, N.Y.—P,Q
 Dubbings Co., 41-10 45th St., Long Island City 4, N.Y.—D
 DuMont Laboratories, Inc., Allen B., 760 Bloomfield Ave., Clifton, N.J.—AC
 Electronic Instrument Co., 84 Withers St., Brooklyn 11, N.Y.—C,E,F,J,K,N,O,P,Q,R,X,Z,AA,AC,AG,AI,AJ
 Electronic Measurements Corp., 280 Lafayette St., New York 12, N.Y.—N,O,P,Q,Z,AA,AE,AG,AJ
 Epo Electronics, Inc., 140 Liberty St., New York 6, N.Y.—B,X,Z,AA
 Epsco, Inc., 126 Mass. Ave., Boston 15, Mass.—B
 Erwood, Inc., 1770 Berteau St., Chicago, Ill.—T
 Esco Mfg. Co., Box 344, Summit, Ill.—AD
 Espey Mfg. Co., 528 E. 72nd St., New York 21, N.Y.—C,G,N,Q,T,U,V,X,Y,AA,AC,AG,AJ
 Feiler Eng'g & Mfg. Co., 8026 N. Monticello, Skokie, Ill.—Z,AA,AC,AF,AI,AJ
 Fenwal, Inc., Pelasant St., Ashland, Mass.—AH
 Ferris Instrument Co., 110 Cornelia St., Boonton, N.J.—E,Q
 Fidelity Amplifier Co., 703 Willow St., Chicago 14, Ill.—K
 Freed Transformer Co., 1718 Weirfield St., Brooklyn 27, N.Y.—C
 Frequency Standards, Box 504, Asbury Park, N.J.—L,U

23—TEST EQUIPMENT

Ammeters, milli, micro A
 Analyzers, interference B

Superior Instrument Co., 227 Fulton St., New York, N.Y.—PAG
 Supreme, Inc., Greenwood, Miss.—A,N,P,X,Z
 Sylvania Electric Products, Inc., 1740 Broadway, New York 19, N.Y.—O,R,AC,AG,AJ
 Tektronix, Inc., P.O. Box 831, Portland 7, Ore.—AC
 Telechrome Mfg. Corp., 88 Merrick Rd., Amityville, N.Y.
 Tele-Matic Industries, 1 Joralemon St., Brooklyn 1, N.Y.—B
 Telonic Industries, 444 S. Rural St., Indianapolis 1, Ind.—O,Q,R
 Texas Instruments, Inc., 6000 Lemmon Ave., Dallas 9, Texas—V
 Triplett Electrical Instrument Co., Harmon Rd., Bluffton, Ohio—A,O,Q,R,X,Y,Z,AA,AC,AE,AG,AJ
 Trojan Electronics, 3706 N. Halsted St., Chicago 13, Ill.—AG
 Vidair Electronics Mfg. Co., 576 W. Merrick Rd., Lynbrook, N.Y.—BAG
 Videon Electronic Corp., 902 E. Michigan St., Indianapolis 2, Ind.—AA
 Visulite Co., 423 Broome St., New York 13, N.Y.—AF
 Waterman Products Co., 2445 Emerald St., Philadelphia 25, Pa.—AC
 Welch Mfg. Co., W. H., 1515 Sedgwick St., Chicago 10, Ill.—M,X,Y,Z,AH
 Weston Labs., Harvard, Mass.
 Wunderlich Radio Co., 2 5th Ave., New York 11, N.Y.—N,O,S,U,AB,AD

24—TOOLS FOR SERVICING

- Benches, work A
- Benders, tubing B
- Bits, drill C
- Blowers D
- Blow Torches E
- Caddy, tube F
- Carts, servicemen's G
- Chemicals, Radio & TV H
- Cleaner, TV lens I
- Clips, alligator, test, etc. J
- Coil Winders K
- Cradles, chassis L
- Cutters M
- Drills, electric N
- Drills, hand O
- Drivers, nut, screw P
- Ejectors, fuse Q
- Hammers R
- Leads, test S
- Micrometers T
- Oilers U
- Pliers V
- Probes, prods W
- Punches, Reamers, Taps, Dies ... X
- Reactivator, TV picture tube ... Y
- Saws Z
- Soldering Equipment (see Sec. 20)
- Splicers, line AA
- Spray Guns AB
- Staplers AC
- Strippers, wire AD
- Timers (see Sec. 13)
- Tools, alignment AE
- Tools, electric AF
- Tools, hand AG
- Torches AH
- Tube Pin Straighteners AI
- Tube Pullers AJ
- Vises AK
- Wrenches AL

Ace Electric Mfg. Co., 1458 Shakespeare Ave., New York 52, N.Y.—H
 Acro Tool & Die Works, 4554 Broadway, Chicago 40, Ill.—Z
 Aerolite Electronics, 507 26th St., Union City, N.J.—J,S,W
 Alco Electronics Mfg. Co., 3 Wolcott Ave., Lawrence, Mass.—AI
 Allied Electronics Enterprises, 4212 Lanker-shim Blvd., N. Hollywood, Calif.—F
 Allied Mfg. & Sales Co., 201 N. Wells St., Chicago 6, Ill.—G
 American Radio Hardware Co., 152 Macques-ton Pkwy. So., Mt. Vernon, N.Y.—J,P,S,W,AE,AG,AL
 AP Electro Lab., P. O. Box 862, Union, N.J.—H,I,U
 Argos Products, 310 Main St., Genoa, Ill.—F
 Assoc. Production Co., 162 N. Clinton St., Chicago 6, Ill.—K
 Cass Machine Co., 691 Antoinette St., Detroit 2, Mich.—P
 CBS-Hytron, Div. Columbia Broadcasting Sys-tem, 100 Endicott St., Danvers, Mass.—F,AG,AI,AJ
 Century Electronics Co., 211-04 99 Ave., Queens Village, N.Y.—L

Coil Winding Equipment Co., 19 Maxwell Ave., Oyster Bay, N.Y.—K
 Constad Laboratories, 214 W. 29th St., New York 1, N.Y.—H
 Cooper Industries, 4953 W. Fullerton Ave., Chicago 39, Ill.—A
 Cosa Corp., 405 Lexington Ave., New York 17, N.Y.—K
 Cummins-Chicago Corp., 4740 N. Ravenswood Ave., Chicago 40, Ill.—N,O,Z
 Duro Specialty Co., 8 Bennett St., Lynn, Mass.—AI
 Ed-Berl Products, 7 Garden Pl., Baldwin, L.I., N.Y.—C,F,P,V,AD,AE,AG,AL
 Enco Mfg. Co., 4522 W. Fullerton Ave., Chi-cago 39, Ill.—AG,AK
 Equipto Div., Aurora Equip. Co., 422 Cleve-land St., Aurora, Ill.—AG
 Escro Mfg. Co., Box 344, Summit, Ill.—G
 Fidelity Chemical Products, 470 Frelinghuysen Ave., Newark 5, N.J.—AD
 Forsborg Mfg. Co., 125 Seaview Ave., Bridge-port 1, Conn.—N,O,P
 General Cement Mfg. Co., 919 Taylor Ave., Rockford, Ill.—F,H,I,J,L,W,AD,AE,AI,AJ
 Greenlee Tool Co., 1887 Columbia Ave., Rock-ford, Ill.—X
 Heller Co., 2185 Superior Ave., Cleveland 14, Ohio—AC
 Holub Industries, 413 DeKalb Ave., Sycamore, Ill.—AD
 Ideal Industries, Inc., Sycamore, Ill.—D,R,AD
 I. E. Mfg., 325 N. Hoyne Ave., Chicago 12, Ill.—AJ
 Insuline Corp. America, 186 Granite St., Man-chester, N.H.—J,M,P,S,W,X,AE,AJ
 JFD Mfg. Co., 6101 16th Ave., Brooklyn 4, N.Y.—J,S,AD,AI
 Kedman Co., 233 So. 5 West, Salt Lake City 1, Utah—P



Keystone Electronics Corp., 423 Broome St., New York 13, N.Y.—S,W,AE
 Klein & Sons, Mathias, 3200 Belmont Ave., Chicago 18, Ill.—M,V,AD,AG
 Lenk Mfg. Co., 30 Cummington St., Boston 15, Mass.—E
 Merix Chemical Co., 1021 E. 55th St., Chicago 15, Ill.—H,I
 Mico Instrument Co., 80 Trowbridge St., Cam-bridge 38, Mass.—K
 Micro-Circuits Co., New Buffalo, Mich.—H
 Miller Television Co., 2840 Naomi St., Bur-bank, Calif.—Y
 Moody Machine Products Co., 42 Dudley St., Providence 5, R.I.—C,O,P
 Mueller Electric Co., 1583 E. 31 St., Cleveland 14, Ohio—J,W
 Nichols Products Co., 325 W. Main St., Moores-town, N.J.—W
 Norco Mfg. Co., 392 Bleecker St., New York 14, N.Y.—H
 Perma-Power Co., 4727 N. Damen St., Chi-cago 25, Ill.—Y
 Precise Measurements Co., 942 Kings Hwy., Brooklyn 23, N.Y.—H,M
 Precision Apparatus Co., 92-27 Horace Harding Blvd., Elmhurst, L.I., N.Y.—S,W
 Radio Corp. of America, Tube Div., 415 S. 5th St., Harrison, N.J.—W
 Radio Merchandise Sales, Inc., 2016 Bronxdale Ave., New York 62, N.Y.—F
 Rohm Mfg. Co., 116 Limestone Bellevue, Pe-oria, Ill.—G
 Sampson Chemical & Pigment Corp., 2830 W. Lake St., Chicago 12, Ill.—H
 Scala Radio Co., 2814 19th St., San Francisco 10, Calif.—W
 Self-Lifting Piano Truck Co., Findlay, Ohio—G
 Service Instruments Co., 422 S. Dearborn St., Chicago 5, Ill.
 Smith Heat Treating Co., 5865 Wilmington Ave., Los Angeles 1, Calif.—AL
 Smith, Inc., Herman H., 2326 Nostrand Ave., Brooklyn 10, N.Y.—J,S,AE,AI,AJ
 Snap-On Tools Corp., 8104 23rd Ave., Kenosha, Wisc.—A,C,N,P,R,T,V,X,Z,AD,AG,AL
 Standard Pressed Steel Co., Box 164, Jenkin-town, Pa.—A
 Star Expansion Products Co., 147 Cedar St., New York 6, N.Y.—AI
 Stevens Walden, Inc., 300 Shrewsbury St., Worcester 4, Mass.—A,B,G,P,V,X,AE,AG,AI,AL
 Stone City Machine & Tool Co., 1206 7th St., Bedford, Ind.—H
 Technicraft Co., 1156 Commonwealth Ave., Boston 34, Mass.—H
 Tempil Corp., 11 W. 25 St., New York 11, N.Y.—H
 U. S. Products, Inc., 1549 Hutchins St., Co-lumbus, Ind.—A,G
 United Technical Labs., Morristown, N.J.—W
 Utica Drop Forge & Tool Corp., 2415 Whites-boro St., Utica 4, N.Y.—M,P,V,X,AD,AG,AL
 Vaco Products Co., 317 E. Ontario, Chicago 11, Ill.—P,V,AD,AG

Van Cleef Bros., 7800 Woodlawn Ave., Chi-cago 19, Ill.—H
 Visulite Co., 423 Broome St., New York 13, N.Y.—S,W,AE
 Wall Mfg. Co., P., Grove City, Pa.—E,U,AH
 Walco Electronics Corp., 3225 Exposition Pl., Los Angeles 16, Calif.—AE,AI,AL
 Xcelite, Thorne Ave. & Bank St., Orchard Park, N. Y.—P,V,X,AE,AL

25—TUBES

- Bulbs, tungar A
- Detectors, diode B
- Rectifiers, tube C
- Tubes, ballast D
- Tubes, cathode-ray (oscillograph) .. E
- Tubes, cathode-ray (television) ... F
- Tubes, electron-ray (indicator-eye) G
- Tubes, hearing aid H
- Tubes, receiving I

American Elite, Inc., 1775 Broadway, New York 19, N.Y.—I
 American Vacuum Products, 11779 Santa Mon-ica Blvd., W. Los Angeles 25, Calif.—E,F
 Amperex Electronic Corp., 230 Duffy Ave., Hicksville, L.I., N.Y.—A,B,C,H
 Atlantic Electronics Corp., 91 Jefferson St., Passaic, N.J.—F
 Beam Instruments Corp., 850 5th Ave., New York 1, N.Y.—E,F
 Bendix Aviation Corp., Red Bank Div., Eaton-town, N.J.—I
 CBS-Hytron, Div. Columbia Broadcasting Sys-tem, 100 Endicott St., Danvers, Mass.—B,C,F,I
 Chatham Electronics Corp., 630 W. Mt. Pleas-ant Ave., Livingston, N.J.—D,I
 Chromatic Television Labs., 703 37th Ave., Oakland, Calif.—F
 Claremont Tube Corp., N. Y. Ave. & Main St., Westbury, N.Y.—F
 Clarostat Mfg. Co., Washington St., Dover, N.H.—D
 Continental Electric Co., 715 Hamilton St., Geneva, Ill.
 Continental Electronics Corp., 5320 Lancaster Ave., Philadelphia, Pa.—F
 DuMont Labs., Allen B., 750 Bloomfield Ave., Clifton, N.J.—F
 DuMont Laboratories, Inc., Allen B., 2 Main St., Passaic, N.J.—F
 Eitel-McCullough, Inc., 798 San Mateo Ave., San Bruno, Calif.—F
 Electronic Beam Corp., 923 Old Nepperhan Ave., Yonkers, N.Y.—F
 Electrons, Inc., 127 Sussex Ave., Newark 3, N.J.—C
 Eureka Television & Tube Corp., 69 5th Ave., Hawthorne, N.Y.—F
 General Electric Co., Electronics Park, Syra-cuse, N.Y.
 General Vacuum Tube Corp., Ardsley, N.Y.—F
 Graybar Electric Co., 420 Lexington Ave., New York 17, N.Y.—C,I
 Haydu Bros., Box 1226, Plainfield, N.J.—F
 JFD Mfg. Co., 6101 16th Ave., Brooklyn 4, N.Y.—D
 Multi-Tron Labs., 4624 W. Wash. Blvd., Chi-cago 44, Ill.—E,F,G
 Naer Corp., 11777 Santa Monica Blvd., Los Angeles 25, Calif.—E,F
 National Union Radio Corp., 237 Jacksonville Rd., Hatboro, Pa.—C,E,F,I
 National Video Corp., 4300 W. 47th St., Chi-cago 32, Ill.—F
 Philco Corp., Accessory Div., "A" & Allegheny Ave., Philadelphia 34, Pa.—B,C,D,E,F,G,H,I
 Radio Corp. of America, Tube Div., 415 S. 5th St., Harrison, N.J.—A,B,C,D,E,F,G,H,I
 Rauland Corp., 4245 N. Knox Ave., Chicago 41, Ill.—F
 Raytheon Mfg. Co., 55 Chapel St., Newton 58, Mass.—C,E,F,G,H,I
 Raytheon Mfg. Co., 453 Pleasant St., Water-town, Mass.—F,I
 RCA Victor Division, Radio Corp. of America, Harrison, N.J.—F,I
 Sheldon Electric Co., 68-98 Coit St., Irving-ton, N.J.—F
 Signalite Inc., 37-41 Neptune H'wy., Neptune, N.J.—D
 Sonotone Corp., Elmsford, N.Y.
 Sylvania Electric Products, Inc., 1740 Broad-way, New York 19, N.Y.—B,C,E,F,I
 Tarzian Inc., Sarkes E., Hillside Dr., Bloom-ington, Ind.
 Taylor Tubes, Inc., 2312 Wabansia Ave., Chi-cago 47, Ill.—C
 Tel-O-Tube Corp. of America, 180 Van Riper Ave., E. Paterson, N.J.—F
 Texas Instruments, Inc., 6000 Lemmon Ave., Dallas 9, Tex.—C
 Thomas Electronics, Inc., 118 9th St., Passaic, N.J.—F
 Tung-Sol Electric, Inc., 95 8th Ave., Newark 4, N.J.—D,E,F,I
 Westinghouse Electric Corp., Electronic Tube Div., P.O. Box 284, Elmira, N.Y.—B,C,F,I

26—TUBE ACCESSORIES, CATHODE-RAY

Connectors, 2nd anode B
 Kits, TV picture tube ext. harness . . . C
 Magnets, TV beam centering D
 Magnets, TV focus E
 Magnets, TV ion trap F
 Masks G
 Mounting Brackets H
 Sleeves, picture tube I

Aerolite Electronics, 507 26th St., Union City, N.J.—B,C
 Anchor Plastics Co., 36-36 36th St., Long Island City 6, N.Y.—I
 C B C Electronics Co., 1310 Callowhill St., Philadelphia 23, Pa.—C
 Clarostat Mfg. Co., Washington St., Dover, N.H.—F
 I. E. Mfg., 325 N. Hoyne Ave., Chicago 12, Ill.—H
 Industrial Hardware Mfg. Co., 109 Prince St., New York 12, N.Y.—B
 JFD Mfg. Co., 6101 16th Ave., Brooklyn 4, N.Y.—B,G,H
 Perma-Power Co., 4727 N. Damen St., Chicago 25, Ill.—C
 Philco Corp., Accessory Div., "A" & Allegheny Ave., Philadelphia 34, Pa.—A,C,D,E,F,G
 Radio Corp. of America, Tube Div., 415 S. 5 St., Harrison, N.J.

27—WIRE & CABLE

Braid, copper A
 Cable, auto radio control B
 Cable, coaxial C
 Cable, intercom D
 Cable, microphone E
 Cable, phonograph F
 Cable, shielded G
 Cable, telephone H
 Cable, wire I
 Cords, extension J
 Cords, lacing K
 Cords, line L
 Gauges, wire M
 Tubing N
 Wire, antenna O
 Wire, bus P
 Wire, grid Q
 Wire, grounding R
 Wire, guy S
 Wire, high-voltage T
 Wire, hook-up U
 Wire, litz V
 Wire, magnet W
 Wire, phonograph X
 Wire, POSJ Y
 Wire, SRIR Z
 Wire, test-lead AA
 Wire, TV transmission line AB

Accurate Insulated Wire Corp., 25 Fox St., New Haven 13, Conn.—C,D,E,G,H,I,J,T,U,Y,Z,AA,AB
 Admiral Corp., 3800 Cortland St., Chicago 47, Ill.—R,S,AB
 Aerolite Electronics, 507 26th St., Union City, N.J.—J,AA
 All Channel Antenna Corp., 47-39 49th St., Woodside 77, N.Y.—O
 Alpha Wire Corp., 430 Broadway, New York 13, N.Y.—A,C,D,E,F,G,H,I,J,L,N,O,P,Q,R,S,T,U,X,Y,Z,AA,AB
 American Mercantile Co., 33 W. 42nd St., New York 36, N.Y.—V,W
 American Phenolic Corp., 1830 S. 54th St., Chicago 50, Ill.—C,E,G,AB
 Ames Mfg. Corp., 2750 Park Ave., New York 51, N.Y.—D,O,R,S,U,Y,AB
 Anaconda Copper Mining Co., 25 Broadway, New York, N.Y.—AB
 Anchor Wire Corp., 183-16 Jamaica Ave., Jamaica 3, N.Y.—S
 Argyle Electronics Co., 8 W. 18th St., New York 11, N.Y.—AB
 Atlantic Wire & Cable Corp., 119-14 14th Rd., College Point, N.Y.—C,D,E,G,H,I,J,Z,AA,AB
 Belden Mfg. Co., 4647 W. Van Buren St., Chicago 44, Ill.—A thru AB
 Birnbach Radio Co., 145 Hudson St., New York 13, N.Y.—A,C,D,E,F,G,H,I,J,L,M,N,O,P,Q,R,S,T,U,W,X,Y,Z,AA,AB
 B. & M. Elec. Co., 838 4th Ave., Brooklyn 32, N.Y.—J,K,L,Y
 Bogen Co., David, 29 9th Ave., New York 14, N.Y.—D,E,G,AB
 Buchen Co., R. J., P.O. Box 9, Bricelyn, Minn.—AB

Calco Mfg. Co., Oakland Ave. & Penn R.R., Washington, Pa.—B,C,D,E,G,H,I,O,S,U,Z,AA,AB
 Campbell X-Ray Corp., 110 Cummington St., Boston 15, Mass.—T
 Cass Machine Co., 691 Antoinette St., Detroit 2, Mich.—O,S,AB
 Chester Cable Corp., Highview St., Chester, N.Y.—A,C,D,E,F,G,H,I,J,O,R,T,U,V,X,Y,Z,AA,AB
 Coleman & Sons, D., 4515 Addison St., Chicago 41, Ill.—A,B,C,D,E,F,G,H,I,R,U,V,W,X,AB
 Colortone Electronics, Inc., 238 William St., New York 38, N.Y.—D
 Columbia Technical Corp., 5 E. 57th St., New York 22, N.Y.—C
 Columbia Wire & Supply Co., 2850 Irving Park Rd., Chicago 18, Ill.—A,C,D,E,F,G,H,I,J,L,M,O,P,Q,R,S,T,U,W,X,Y,Z,AA,AB
 Commercial Products, 417 Main St., Toledo 5, Ohio—I,S
 Consolidated Wire & Associated Cos., 1635 S. Clinton St., Chicago 16, Ill.—A thru AB
 Co-Operative Industries, Inc., Chester, N.J.—G
 Copperwell Steel Co., Wire & Cable Div., 9th & Allegheny Ave., Glassport, Pa.—I,O,R,S
 Cornish Wire Co., 50 Church St., New York 7, N.Y.—D,E,G,J,L,U,Y,AA,AB
 DuMont Labs Inc., Allen B., Mobile Comm. Dept., 1500 Main St., Clifton, N.J.—C,AB
 Eby Co., Hugh H. 4700 Stenton Ave., Philadelphia 44, Pa.
 Electric-Cord Mfg. Co., 2554 E. 18th St., Brooklyn 35, N.Y.—J,L,Y
 Federal Telephone & Radio Co., 100 Kingsland Rd., Clifton, N.J.—C,D,E,H,AB
 Fenton Co., 15 Moore St., New York 4, N.Y.—C,E,G,R,S,AB
 Gee-Lar Mfg. Co., 819 Elm St., Rockford, Ill.—J,R,S
 General Electric Co., Electronics Park, Syracuse, N.Y.
 General Cable Corp., 420 Lexington Ave., New York 17, N.Y.
 Good, Inc., Don, 1014 Fair Oaks Ave., S. Pasadena, Calif.—AB
 Graybar Electric Co., 420 Lexington Ave., New York 17, N.Y.—C,E,AB
 Hi-Lo TV Antenna Corp., 3540 N. Ravenswood Ave., Chicago 13, Ill.—O,AB
 Hudson Wire Co., Ossining, N.Y.
 Ideal Industries, Inc., Sycamore, Ill.—M
 I. E. Mfg., 325 N. Hoyne Ave., Chicago 12, Ill.—I,N,O,R,S
 Imperial Radar & Wire Corp., 820 E. 233rd St., New York 66, N.Y.—A,B,I,O,R,S,AB
 Insuline Corp. of America, 186 Granite St., Manchester, N.H.—O,AA
 Jerrold Electronics Corp., 26th & Dickinson Sts., Philadelphia 46, Pa.—C
 Jersey Specialty Co., Burgess Place, Mountain View, N.J.—A,I,O,U,W,AB
 JFD Mfg. Co., 6101 16th Ave., Brooklyn 4, N.Y.—B,C,J,L,O,R,S,X,AA,AB
 Kellogg Switchboard & Supply Co., 79 W. Monroe St., Chicago 3, Ill.
 Keystone Electronics Corp., 423 Broome St., New York 13, N.Y.—AA
 Lenz Electric Co., 1751 N. Western Ave., Chicago 47, Ill.
 Lieco, Inc., 147 Ocean Ave., Lynbrook, N.Y.—C,AB
 Miller Electric Co., 120 Main St., Pawtucket, R.I.—J
 Modern-Aire Mfg. Corp., 4436 W. Roosevelt Rd., Chicago 24, Ill.—R,S
 Modern Wire Co., 39-30 Review Ave., Long Island City 1, N.Y.—O,R,S
 Mohawk Plastic Corp., 320 River St., Fitchburgh, Mass.—D,H,I,U,Z,AB
 Nichols Wire & Aluminum Co., 1725 Rockingham Rd., Davenport, Iowa—R,S
 Parkside Wire Co., Francisco & Irving Park Rd., Chicago, Ill.—I,L,O,AA,AB
 Pentron Corp., 221 E. Cullerton Ave., Chicago 16, Ill.—J
 Phalo Plastics Corp., 25 Foster St., Worcester 8, Mass.—B,C,D,E,F,G,H,J,L,N,O,T,U,X,Y,Z,AA,AB
 Phelps Dodge Copper Products Corp., 40 Wall St., New York 5, N.Y.—C,G,T,W,AB
 Philco Corp., Accessory Div., "A" & Allegheny Ave., Philadelphia 34, Pa.—O,AA,AB
 Plastic Wire & Cable Co., Jewett City, Conn.
 Plastoid Corp., 42-61 24th St., Long Island City 1, N.Y.—C,D,E,F,G,H,I,U,X,Y,Z,AB
 Plymouth Electronics Corp., 50 Kingsbury St., Worcester 3, Mass.—S
 Radiophone Co., 600 E. Evergreen Ave., Monrovia, Calif.—J
 Radio Merchandise Sales, Inc., 2016 Bronxdale Ave., New York 62, N.Y.—R
 Rego Insulated Wire Co., 830 Monroe St., Hoboken, N.J.—AB
 Revere Corp. of America, 845 N. Colony Rd., Wallingford, Conn.—G,U
 Runzel Cord & Wire Co., 4727 Montrose Ave., Chicago 41, Ill.—G,U
 Saxton Products, Inc., 2101 Grand Concourse, Bronx 53, N.Y.—O,R,AB
 Sequoia Process Corp., 371 Willow St., Redwood City, Calif.—G,T,U
 Sittler Corp., 18 No. Ada St., Chicago 7, Ill.—AA
 South River Metal Prod. Co., 377 Turnpike, S. River, N.J.—R,S
 Sprague Electric Co., N. Adams, Mass.
 Thomas & Betts, 36 Butler St., Elizabeth 1, N.J.

United Transformer Co., 150 Varick St., New York, N.Y.—E
 U. S. Wire & Cable Corp., Progress & Monroe Sts., Union, N.J.—C,E,G,J,T,AA
 Univox Corp., 102 Warren St., New York 7, N.Y.—C,O
 Victor Electric Wire & Cable Corp., 64 Ackerman Ave., Clifton, N.J.—E,J,U,AB
 Visulite Co., 423 Broome St., New York 13, N.Y.—AA
 Waldom Electronics Inc., 4625 W. 53rd St., Chicago 32, Ill.—L
 Walsco Electronics Corp., 3225 Exposition Pl., Los Angeles 18, Calif.—U
 Wheeler Insulated Wire Co., 150 E. Aurora St., Waterbury 20, Conn.—V,W
 Whitaker Cable Corp., 1301 Burlington Ave., N. Kansas City 16, Mo.—G,J,U
 Whitney Blake Co., 1565 Dixwell Ave., New Haven 14, Conn.—C,E,G,J,AA,AB
 Wright Steel & Wire Co., G. F., 243 Stafford St., Worcester 3, Mass.—S



we've done our best

but 99.44% is not
good enough for
the Buyers Directory

In the compilation of this 1954 Buyers Directory, we have questioned the field three times with excellent results. Any omissions are unintentional—due to failure of manufacturers to return our questionnaire.

In directory publishing we try to be perfectionists so we suggest that it is not too soon to think about the next Buyers Directory.

In the very few cases where there may be an omission or an error in this edition, let us know NOW. With your cooperation, the next Buyers Directory will be 100% complete and accurate.

CALDWELL-CLEMENTS, INC.

480 Lexington Ave.
New York 17

1954 TECHNICIAN BUYERS DIRECTORY

Brand & Trade Name Index

The brand names of service and replacement products, component parts, equipment, instruments, and materials in the radio-TV-electronic service industry are listed alphabetically, with the name of the manufacturer. The address of

the manufacturer whose brand or trade name is listed may be obtained by referring to the Alphabetical Listing of Manufacturers, beginning on page 128.

- ACCWIRE**
Accurate Insulated Wire Corp.
- ACME**
Aerovox Corp.
- ACME**
Trimm, Inc.
- ACOUSTALLOY**
Electro-Voice, Inc.
- ACROUSOUND**
Acro Products Co.
- ACROVISION**
Acro Products Co.
- ACTO-tenna**
Acme Tool & Specialties Co.
- ADAPEAC**
Centralab Div., Globe Union, Inc.
- ADAPHONE**
Fenton Co.
- ADASHAFT**
Centralab Div., Globe Union, Inc.
- AD-A-SWITCH**
Claro-stat Mfg. Co.
- ADCO ELECTRONICS**
Advance Electronics Co.
- ADCOLA**
British Electronic Sales Co.
- ADDITIVE DRIVE**
Electro-Voice Inc.
- ADELCO**
Advance Electronics Co.
- ADJUST-A-V**
Radio Merchandise Sales, Inc.
- ADJUST-A-VOLT**
Standard Electrical Products Co.
- ADLAKE**
Adams & Westlake
- AEROCON**
Aerovox Corp.
- AERODYNAMIC**
Radio Corp. of America
- AEROFILM**
Aerovox Corp.
- AEROFLEX**
Anchor Plastics Co.
- AEROLENE**
Aerovox Corp.
- AEROLITE**
Aerovox Corp.
- AEROSENSOR**
Roanwell Corp.
- AIRBOY**
Mitchell Industries Inc.
- AIR-COOLED**
JFD Mfg. Co.
- AIR-CORE**
American Phenolic Corp.
- AIRLEAD**
Don Good, Inc.
- AKRA**
Shallcross Mfg. Co.
- ALLIED**
Scranton Aluminum Mfg. Co.
- ALLIEDINTER**
Allied Eng'g., Allied Int'l Inc.
- AMBERYL**
Voco Products Co.
- AMCON**
American Condenser Co.
- AMECO**
American Electronics Co.
- AMERCO**
American Mercantile Co.
- AMERICAN BEAUTY**
American Electrical Heater Company
- AMPEC**
Centralab Div., Globe Union, Inc.
- AMPHENOL**
American Phenolic Corp.
- ANGELUS**
Don Good, Inc.
- ANTENAPLEX**
Radio Corp. of America
- ANTENSIFIER**
Blonder-Tongue Labs.
- ANTI-STATIC '79'**
Merix Chemical Co.
- ARCOLETRIC**
British Electronic Sales Co.
- ARGYLINE**
Argyle Electronics Co.
- ARHCO**
American Radio Hardware Co.
- ARISTOCRAT**
Electro-Voice Inc.
- ARISTOCRAT**
Turner Co.
- ATLANTICABLE**
Atlantic Wire & Cable Corp.
- ATOM**
Sprague Electric Co.
- ATR**
American Television & Radio Co.
- AUDAX**
Audak Co.
- AUDET**
Centralab Div., Globe Union, Inc.
- AUDIODISCS**
Audio Devices, Inc.
- AUDIOFILM**
Audio Devices, Inc.
- AUDIO POINTS**
Audio Devices, Inc.
- AUTOBOOSTER**
Industrial Television Inc.
- AUTOPOSITIONER**
Collins Radio Co.
- AUTOTUNE**
Collins Radio Co.
- AVIGATOR**
Mitchell Industries Inc.
- AXIOMH**
Ward Leonard Electric
- BALAC**
Conant Laboratories
- BALINE**
JFD Mfg. Co.
- BANTAM**
Aerovox Corp.
- BARONET**
Electro-Voice, Inc.
- BATRYPOWER**
Radiart Corp.
- BEAMED POWER**
ROTARIES
- BEE LINE**
Telrex Inc.
- BEE LINE**
Radio Merchandise Sales, Inc.
- BELAB**
Browne Electronics
- BELFONE**
Bell Sound Systems, Inc.
- BESTENNA**
Bestcraft Products Co.
- BIG DAN**
Danforth Mfg. Co.
- BIG INCH**
JFD Mfg. Co.
- BIG JACK**
Kay-Townes Antenna Co.
- BIRACO**
Bimbach Radio Co.
- BIRMINGHAM SOUND**
British Electronic Sales Co.
- BLACK BEAUTY**
Sprague Electric Co.
- BLACK & WHITE**
Tru-Pine Co.
- BLUE JACKET**
Sprague Electric Co.
- BLUEPOINT**
Astron Corp.
- BLUE SHAFT**
Centralab Div., Globe Union, Inc.
- BOOST-A-VOLT**
Workman TV, Inc.
- BOROFILM**
Aerovox Corp.
- BORON X**
Technicraft Co.
- BOW**
Radio Merchandise Sales
- BOY-MAR**
Electrical-Service Co.
- BRADLEYOMETER**
Allen-Bradley Co.
- BRADLEYUNITS**
Allen-Bradley Co.
- BRANDES**
Cannon Co., C. F.
- BRENKERT**
Radio Corp. of America
- BRIDGAMATIC**
S.O.S. Cinema Supply Corp.
- BRONZIDITE**
JFD Mfg. Co.
- BROWN DEVIL**
Ohmite Mfg. Co.
- BT**
Illinois Condenser Co.
- BULPLATE**
Sprague Electric Co.
- BUSS**
Bussmann Mfg. Co.
- BUTTON**
Erie Resistor Corp.
- CABINIST**
G & H Wood Products Co.
- CADET**
Raytheon Mfg. Co.
- CAMCO**
Camburn, Inc.
- CANDOHM**
Muter Co.
- CANNON-BALL**
Cannon Co., C. F.
- CAPALIPROBE**
Epsco, Inc.
- CAP-EX**
Vidair Electronics Mfg. Co.
- CARBOFILM**
Aerovox Corp.
- CARBOMITE**
Continental Carbon Inc.
- CARBOIT**
A P Electro Lab.
- CARDAX**
Electro-Voice Inc.
- CARDYNE**
Electro-Voice Inc.
- CARLTON**
Hudson Lamp Co.
- CARRILON DYNAMIC**
Miller Mfg. Co., M. A.
- CARTRN-DRY**
Pyramid Electric Co.
- CARTWHEEL**
Aerovox Corp.
- CASCADE**
Industrial Television Inc.
- CASCADE YAGI**
JFD Mfg. Co.
- CASTOHM**
Shallcross Mfg. Co.
- CAVALIER RADIO**
Hinners-Galanek Radio Corp.
- CDP**
Electro-Voice Inc.
- CEEC**
Calbest Eng'g & Electronics Co.
- CEE-CORS**
Permoflux Corp.
- CELAB**
Clark Electronic Labs.
- CENTILATOR**
Kay Electric Co.
- CENTRATHENE**
Centralab Div., Globe Union, Inc.
- CEN-TRI-CORE**
Alpha Metals, Inc.
- CENTURY**
Electro-Voice Inc.
- CERAMELEX**
Erie Resistor Corp.
- CERAMICAPS**
Muter Co.
- CERAMICON**
Erie Resistor Corp.
- CERA-MITE**
Sprague Electric Co.
- CEROC**
Sprague Electric Co.
- CETRON**
Continental Electric Co.
- CHALLENGER**
Bogen Co., David
- CHALLENGER**
Turner Co.
- CHALLENGER**
Welco Mfg. Co.
- CHALLENGER DELUXE**
Rek-O-Kut Co.
- CHALLENGER RECORDER**
Rek-O-Kut Co.
- CHANALYST**
Radio Corp. of America
- CHANGE-A-CYCLE**
Carter Motor Co.
- CHANGE-A-VOLT**
Carter Motor Co.
- CHANNEL AUTOBOOSTER**
Industrial Television Inc.
- CHANNEL KING**
Armac Co.
- CHARGICATORS**
Hickok Electrical Instrument Co.
- CHARGOMATIC 88**
Electric Cord Co.
- CHEMIFLEX**
Technicraft Co.
- CHEMIGLAS**
Technicraft Co.
- CHEMIPREG**
Technicraft Co.
- CHITRAN**
Chicago Standard Transformer Corp.
- CHROMATRON**
Chromatic Television Labs.
- CIMALOHM**
Cima Corp.
- CINELITE**
Mole-Richardson Co.
- CINEMA**
Aerovox Corp.
- CINEMAPHONE**
S.O.S. Cinema Supply Corp.
- CINEVISION**
Calbest Eng'g & Electronics Co.
- CIRCLE "B"**
Vocaline Co. of America
- CIRCLE-VANE**
Ward Products Corp., Div. The Gabriel Co.
- CIR-Q-LINE**
Atlantic Wire & Cable Corp.
- CLAMPIPE GROUND CLAMP**
Mueller Electric Co.
- CLARKSTAN**
Pacific Transducer TT Corp.
- CLAROSTAT**
Claro-stat Mfg. Co.
- CLEAR-PIX**
Superex Electronics Corp.
- CLEAR VUE**
A P Electro Lab
- CLETRON**
Cleveland Electronics Inc.
- CLEVITE**
Transistor Products Inc.
- CLIPPER**
Winegard Co.
- CLIX**
British Electronic Sales Co.
- COLLINS 37M**
Collins Radio Co.
- COBREFLEX-2**
University Loudspeakers Inc.
- COMMANDAIR**
JFD Mfg. Co.
- COMMERCIAL**
Trimm, Inc.
- COMMUNO-PHONE**
Bogen Co., David
- COMPENTROL**
Centralab Div., Globe Union, Inc.
- COMPETITOR**
Turner Co.
- COMPOUND DIFFRACTION PROJECTOR**
Electro-Voice, Inc.
- CONCERT-LINE**
Shure Bros.
- CONCERTONE**
Berlant Associates
- CONFIDENCER**
Roanwell Corp.
- CONICAL-V-BEAM**
Telrex Inc.
- CONQUEROR**
Neal Electronic Co.
- CONTENNA**
Conn. Telephone & Electric Corp.
- CON-YAGI**
Tennalab
- COPPERCLAD**
American Phenolic Corp.
- COPPEROXIDE**
Bradley Laboratories Inc.
- COPROX**
Bradley Laboratories Inc.
- CORONET**
Camburn, Inc.
- CORONAL WIRE AND CABLE**
General Electric Co.
- CORRIB**
Ohmite Mfg. Co.
- CORSAIR**
JFD Mfg. Co.
- COUPLATE**
Centralab Div., Globe Union, Inc.
- CRAFTSMEN**
Radio Craftsmen Corp.
- CRESTWOOD**
Daystrom Electric Corp.
- CRL**
Centralab Div., Globe Union, Inc.
- CROLITE**
Crowley & Co., Henry L.
- CROLOY**
Crowley & Co., Henry L.
- CRONAME**
Waldom Electronics Inc.
- CUE TAPE**
Rangertone Inc.
- CUNNINGHAM**
Radio Corp. of America
- CUSTOM FOUR HUNDRED**
Stromberg-Carlson Co., Sound Equip. Div.,
- DALOHM**
Dale Products, Inc.
- DANDEE**
Aerovox Corp.
- DAVIS SUPER-VISION**
Davis Electronics
- DeARMOND**
Rowe Industries
- DECOR-TENNA**
Midwest Naturlite Co.
- DEFENSE LIGHT**
Electric Cord Co.
- DeFOREST**
Radio Corp. of America
- DELPEC**
Centralab Div., Globe Union, Inc.
- DELTA BEAM**
K-G Electronics Corp.
- DELTA GLO**
K-G Electronics Corp.
- DENSICHRON**
DENSITOMETERS
- Welch Mfg. Co., W. M.**
- DEPENDABLE**
Trimm, Inc.
- DETECT-A-FIRE**
Fenwal, Inc.
- DETERMOMH**
Ohmite Mfg. Co.
- DFS**
Valpey Crystal Corp.
- DIACONE**
Altec Lansing Corp.
- DIALCO**
Dialight Corp.
- DIAMOND PHONO STYLII**
Royal Diamond Tool Co.
- DIAMOND WEAVE**
F. W. Sickles Div., Telrex Inc.
- DIFFERENTIAL**
Electro-Voice Inc.
- DIFFUSICONE-8**
University Loudspeakers, Inc.
- DIFFUSICONE-12**
University Loudspeaker, Inc.
- DIMINUETTE**
Permoflux Corp.
- DIOMITE**
Transistor Products Inc.
- DIRECT-DRIVE**
Shure Bros.
- DIRECTRON**
Miller Co., Sanford
- DIRECTRONIC**
Snyder Mfg. Co.
- DIRON**
Fink Electronics Inc.
- DISCOHM**
Ward Leonard Electric
- DIVIDOHM**
Ohmite Mfg. Co.
- DREADNAUGHT**
Wall Mfg. Co., P.
- DROP-LOCK**
South River Metal Prod. Co.
- DUAL-A**
Duala Company
- DUAL-MATCH**
Mosley Electronics
- DUARC**
Mole-Richardson Co.
- DUETTE**
Jensen Mfg. Co.
- DUO-BAND**
Telrex Inc.
- DUO-MOUNT**
South River Metal Prod. Co.
- DUO SEAL**
Welch Mfg. Co., W. M.
- DUO-VOLT**
Carter Motor Co.

DUPLEX
 Altec Lansing Corp.
DURAFLEX
 Co-Operative Industries, Inc.
DURAMEG
 Sprague Electric Co.
DURAMIC
 Aerovox Corp.
DURAMOULD
 Dumont-Airplane & Marine
DURANITE
 Aerovox Corp.
DURAVIN
 Whitaker Cable Corp.
DURO D-200
 Duro Specialty Co.
DURO D-279-S
 Duro Specialty Co.
DUTCH
 VanClef Bros.
DYKANOL
 Cornell-Dubilier Electric Corp.
DYMON-VANE
 Ward Products Corp., Div. The Gabriel Co.
DYNAMIC
 Jackson Electrical Instrument Co.
DYNASCOPE
 Century Electronics Co.
DYNASET
 Telux Inc.
DYNATRACER
 Century Electronics Co.
DYNATROL
 North America Model Products, Inc.
DYNAURAL
 Scott Inc., Herman Hosmer
EARSET
 Telux, Inc.
EASY-FLO
 Handy & Harman
EBCO
 Electronic Beam Corp.
ECHOPHONE
 Hallicrafters Co.
ECONO-SWITCH
 Centralab Div., Globe Union, Inc.
EDI
 Electronic Devices Inc.
EDISWAN
 British Electronic Sales Co.
EICO
 Electronic Instrument Co.
8-BALL
 Ward Products Corp., Div. The Gabriel Co.
EIMAC
 Eitel-McCullough, Inc.
EKOTAPE
 Webster Electric Co.
EL
 Electrons, Inc.
ELECTRO
 Electro Products Laboratories
ELECTRONAMIC
 Precision Apparatus Co.
ELECTROX
 Schauer Mfg. Corp.
ELECTROWRITER
 Pioneer Electric and Research Corp.
ELEKTRAN
 Ward Products Corp., Div. The Gabriel Co.
ELINCO
 Electric Indicator Co.
ELITE
 Camburn Inc.
ELIM-A-TRACE
 Vidair Electronics Mfg. Co.
EMC
 Electronic Measurements Corp.
E-THERM
 Sangamo Electric Co.
EVER-QUIET
 Chemical Electronic Eng'g. Inc.
EVEREADY
 National Carbon Co., Div. Union Carbide and Carbon Corp.
EVER-KLEER
 Chemical Electronic Eng'g. Inc.
EXPANDIT
 Tele-Ex-Pand Corp.
EXPRESS CONTROLS
 Centralab Div., Globe Union, Inc.
EYE WITNESS
 Radio Corp. of America
E-Z
 Ideal Industries, Inc.
E-Z-BEE
 Spiraling Products Co.
EZC
 Kleer-Vue Mfg. Co.

E-Z WIRE STRIPPERS
 Ideal Industries, Inc.
FASTATCH
 Centralab Div., Globe Union, Inc.
FATHOMETERS
 Raytheon Mfg. Co.
FB-7
 National Co.
FEATHERIDE
 Webster Electric Co.
FEATHERWEIGHT
 Trimm, Inc.
FEN-TONE
 Fenton Co.
FENTUBE-AIRSPACED
 Fenton Co.
FENWIRE
 Fenton Co.
FERRI-CHOKES
 Superex Electronics Corp.
FERRI-LOOPSTICK
 Superex Electronics Corp.
FIBRON PLASTIC TAPE
 Irvington Varnish & Insulator Co.
FIDELITONE
 Permo, Inc.
FIDELITY X-UAR STRIPPER
 Fidelity Chemical Products
50 LINE
 Walsco Electronics Corp.
FILMITE
 Sprague Electric Co.
FILPEP
 Centralab Div., Globe Union, Inc.
FILPLATE
 Centralab Div., Globe Union, Inc.
FILTEROL
 Sprague Electric Co.
FIL-TEST
 Vidair Electronics Mfg. Co.
FIL-TRAN
 Vidair Electronics Mfg. Co.
FINCO
 Finney Co.
FINNIFLEX
 Finn & Co., T. R.
FIXED VITROHM
 Ward Leonard Electric
FIXTOHM
 Campbell Industries Inc.
FLAMENOL WIRE AND CABLE
 General Electric Co.
FLASH
 A P Electro Lab.
FLASH
 Phillips Mfg. Co.
FLATOHM
 Centralab Div., Globe Union, Inc.
FLEETWAY
 Conn. Telephone & Electric Corp.
FLEXOHM
 Clarostat Mfg. Co.
FLEXITUBE
 Walsco Electronics Corp.
FLEXLOC
 Standard Pressed Steel Co.
FLUSHLITES
 Drake Mfg. Co.
FOCALIZER
 Quam Nichols Co.
FORMEX WIRE AND CABLE
 General Electric Co.
FORMULA 50
 Constad Laboratories
FORMVAR
 Phelps Dodge Copper Products
FORTISSIMO
 Permaflux Corp.
FRETARAY
 Fretco Inc.
FRINGE BEAM
 Neal Electronic Co.
FRINGELEADER
 Radio Merchandise Sales
FSK
 National Co.
FSL
 National Co.
FSR
 National Co.
5TV4
 Workman TV, Inc.
FUSE-LITE
 Alden Products Co.
FUZ-LOX
 D & M Products
FUSETRON
 Bussmann Mfg. Co.
FUSE-O-LET
 Hilo TV Antenna Corp.

G-C
 General Cement Mfg. Co.
GEMCO
 Great Eastern Mfg. Co.
GENE-MITE
 Allied Eng'g Div., Allied Int'l Inc.
GENEMOTOR
 Carter Motor Co.
GEORGIAN
 Electro-Voice, Inc.
GI
 General Industries Company
GLASOHM
 Clarostat Mfg. Co.
GLASSEAL
 Pyramid Electric Co.
GLOBE TROTTER
 Radio Corp. of America
GLO-MELT
 Wassa Electric Products Corp.
GOLD CUP
 Carboneau Industries
GOLDEN RIG
 JFD Mfg. Co.
GOLDEN THROAT
 Radio Corp. of America
GOLDEN WAND
 Peerless Products Industries
GOLD SHIELD
 JFD Mfg. Co.
GOODLINE
 Don Good, Inc.
GP
 Erie Resistor Corp.
GRADIANT
 Shure Bros.
GREEN BAND
 Todd-Iran Corp.
GREENOHMS
 Clarostat Mfg. Co.
GRIP
 A P Electro Lab.
GRIP-SPINTITE
 Stevens Walden Inc.
GROMMES
 Precision Electronics Inc.
HABIRSHAW
 Phelps Dodge Copper Products
HALLOWELL
 Standard Pressed Steel Co.
HALOLIGHT
 Sylvania Electric Products
HAMTENNA
 TennaLab
HAN-D-OHM
 Cima Corp.
HARMIC
 Wall Mfg. Co., P.
HD-A SWITCH
 Clarostat Mfg. Co.
HEARD EVERYWHERE
 Lowell Mfg. Co.
HEATHKIT
 Heath Co.
HFS
 National Co.
HI
 Holub Industries, Inc.
HI-BALL
 Radiart Corp.
HI-FARAD
 Aerovox Corp.
HI-KAPS
 Centralab Div., Globe Union, Inc.
HIK
 Erie Resistor Corp.
HI-K CERAMICON
 Erie Resistor Corp.
HI-LO
 Radiart Corp.
HIPOWER
 Radiart Corp.
HI-Q
 Aerovox Corp.
HI-Q
 Johnson Co., E. F.
HIS MASTER'S VOICE
 Radio Corp. of America
HI-STAB
 Erie Resistor Corp.
HI-TEMP
 Consolidated Wire & Associated Companies
HI-TOP
 Tele-Ex-Pand Corp.
HI-VO-KAPS
 Centralab Div., Globe Union, Inc.
HOBBY-TIME
 Western Coil & Electrical Co.
HOLO
 Don Good, Inc.
HONEYWELL MERCURY
 Micro Switch Div., Minn.-Honeywell Regulator Co.

HORTON SPEAKERS
 Becker Electronics Mfg. Corp.
HOUSE OF RESISTORS
 Clarostat Mfg. Co.
HOWDY DOODY
 Shura-Tone Products
HP CERAMICS
 Aerovox Corp.
HQ
 Hammarlund Mfg. Co.
HRO
 National Co.
HUBBELLOCK
 Hubbell Inc., Harvey
HUDSON
 Oxford Electric Corp.
HUMDINGER
 Clarostat Mfg. Co.
HUMIDITITE
 Sangamo Electric Co.
HUSH
 Chemical Electronic Eng'g Inc.
HY/LOW
 Stevens Products Inc.
HY-MET
 Astron Corp.
HYPASS
 Sprague Electric Co.
HYPEX
 Jensen Mfg. Co.
HYVOL
 Aerovox Corp.
ICA
 Insuline Corp. of America
ICONIC
 Altec Lansing Corp.
IHC
 Illinois Condenser Co.
IHT
 Illinois Condenser Co.
IMP
 Carter Parts Co.
IMP
 Pyramid Electric Co.
IMPERIAL
 Jensen Mfg. Co.
IMPERIAL
 Walsco Electronics Corp.
IMS RECORD SPRAY
 Silicone Spray Products
INDCO OIL
 Industrial Condenser Corp.
INDOOR TENNA
 Spiraling Products Co.
INDUCTRONICS
 Edwin I. Guthman & Co.
INDUCTUBE
 Drake Co., R. L.
INDUSTRAVOX
 Electronic Eng. Co.
INLINE
 American Phenolic Corp.
IN-STA-COM
 Marine View Electronics
INTELIN
 Federal Telephone and Radio Co., Div. of IT&T
INTERCO
 Intercontinental Industries, Inc.
INTERLOCK
 Hubbell Co., Harvey
INTER-MATIC TIME SWITCHES
 International Register Co.
IRC
 Int'l Resistance Co.
IRISH
 ORRadio Industries Inc.
IRV-O-VOLT
 Irvington Varnish & Insulator Co.
IT'S THE CATS WHISKERS
 T-V Products Co.
JACKNIFE
 Radio Merchandise Sales
JACKSON
 Vulcan Electric Co.
JECO
 Jarvis Electronics Div., Speer Carbon Co.
JEFFERSON
 Atlantic Electronics Corp.
JETENNA
 JFD Mfg. Co.
JETOMIC
 JFD Mfg. Co.
JETROL
 Allied Eng'g Div., Allied Int'l Inc.
JK PRODUCTS
 James Knights Co.
J-S-C
 Jersey Specialty Co.

KEI
 Kurman Electric Co. Inc.
KENCO
 Kenwood Eng'g Co.
KILO
 Kay Electric Co.
KINE-LITE
 Vidair Electronics Mfg. Co.
KINE-TEST
 Vidair Electronics Mfg. Co.
KIN-EX
 Vidair Electronics Mfg. Co.
KLEER-IT
 Superex Electronics Corp.
KLIP
 South River Metal Prod. Co.
KLIPSCHORN
 Klipsch & Associates
KLIPZON
 United Technical Labs.
K-LOK
 Erie Resistor Corp.
KNIGHT
 Allied Radio Corp.
KNIGHT
 Espey Mfg. Co.
KOOLOHM
 Sprague Electric Co.
KRAFTONE
 Kraft Bros.
KRANK-UP MASTS
 Jontz Mfg. Co.
KRYLON ACRYLIC COATINGS
 Krylon, Inc.
KURMELEC
 Kurman Electric Co. Inc.
KWIK
 South River Metal Prod. Co.
KWICK CLIMB TOWERS
 Jontz Mfg. Co.
KWIK-KALL JR.
 Loge Sound Engrs., J. M.
KWIK KLIP
 South River Metal Prod. Co.
KWICK-UP TELESCOPING MASTS
 Jontz Mfg. Co.
LABCASE
 Berkshire Laboratories
LABCHECK
 Berkshire Laboratories
LABMARKER
 Berkshire Laboratories
LABOHM
 Berkshire Laboratories
LABSTROBE
 Berkshire Laboratories
LABTRANS
 Berkshire Laboratories
LABVOLT
 Berkshire Laboratories
LAFAYETTE
 Espey Mfg. Co.
LANSING
 Altec Lansing Corp.
LAZY-X
 Radiart Corp.
LC CHECKER
 Aerovox Corp.
LECTERN
 Loge Sound Engrs., J. M.
LECTROHM
 Lectrohm Inc.
LEMCO
 Lytle Eng'g. & Mfg.
LERCO
 Lynn Electronic Research Co.
LEVER-TYPE
 Shure Bros.
LEV-R SWITCHES
 Switchcraft, Inc.
LF-JAX
 Switchcraft, Inc.
LIFETIME
 Reeves Soundcraft Corp.
LIGHTNING
 JFD Mfg. Co.
LIGHTNING
 Vaco Products Co.
LINE-O-LIFE
 Carter Motor Co.
LITTEL JAX
 Switchcraft, Inc.
LITTEL PLUGS
 Switchcraft, Inc.
LITTEL SWITCHES
 Switchcraft, Inc.
LITTLE DEVIL
 Ohmite Mfg. Co.
LITTLE GEM
 Equip to Div., Aurora Equip.
LITTLE JEWEL
 Danforth Mfg. Co.

LITTLE NIPPER
 Radio Corp. of America
LL300
 Buchen Co., R. J.
LL450
 Buchen Co., R. J.
L.M.B. BOX CHASSIS
 Heeger Inc.
LN
 Illinois Condenser Co.
LOADED-X
 Radiart Corp.
LOCK-TITE
 Thomas & Betts
LO-C OSCILLOSCOPE
 Linear Equipment Labs.
LUXTRON
 Bradley Laboratories Inc.
LYNN
 Vaco Products Co.
LYTICAP
 Planet Mfg. Co.
LYT-TUNER
 Lytle Engineering & Mfg.
McMITE
 McCoy Electronics Co.
MACSON
 Macson Co.
MAGIC EYE
 Radio Corp. of America
MAGIC MONITOR
 Radio Corp. of America
MAGIC-TEE
 Plymouth Electronics Corp.
MAGMOTOR
 Carter Motor Co.
MAGNA-TORC
 Hansen Mfg. Co.
MAGNECORDER
 Magnecord Inc.
MAGNECORDETTTE
 Magnecord Inc.
MAGNEPAINT
 Micro-Circuits Co.
MAJOR
 Allied Eng'g Div., Allied Int'l Inc.
MAJOR RECORDS
 Valentin Inc., Thomas J.
MANDEX
 Mandex Mfg. Co.
MARATHON BATTERIES
 Marathon Battery Co.
MARINERS PATHFINDER
 Raytheon Mfg. Co.
MARKA
 Kay Electric Co.
MARK TWAIN
 Raytheon Mfg. Co.
MARMA
 Fidelity Amplifier Co.
MARTIN MELODY
 Fidelity Amplifier Co.
MARVELLITE
 CBS Electronics Co.
MASCO
 Simpson Mfg. Co., Mark
MASTER-TENNA
 Radio Corp. of America
MAST-LOK
 Argyle Electronics Co.
MECHANOPHASE
 Electro-Voice Inc.
MEGA
 Kay Electric Co.
MEG-O-MAX
 Sprague Electric Co.
MEISSNER
 Thordarson-Meissner Mfg. Div., Maguire Industries, Inc.
MELCO
 McCoy Electronics Co.
MERCURY
 Electro-Voice, Inc.
MERCURY
 Vulcan Electric Co.
MERITONE
 Autocrat Electronics Co.
MERL
 Miller Electro-Research Labs.
METALITE
 Astron Corp.
METALLIZED
 International Resistance Co.
METEOR
 Astron Corp.
METER-MATIC COIN METERS
 International Register Co.
METROPOLITAN
 Radiart Corp.
MICAPIL
 Cosa Corp.
MICRO
 Kay Electric Co.
MICROLATOR
 Kay Electric Co.
MICRO-METER
 Lampkin Labs, Inc.

MICROPAINT
Micro-Circuits Co.
MICROTHERM
Raytheon Mfg. Co.
MICROTRAN
Crest Laboratories Inc.
MIDDLESEX
Bogen Co., David
MIDGET
Sprague Electric Co.
MIGHTY MIDGET
JFD Mfg. Co.
MILCAPS
Dumont-Airplane &
Marine
MILLIMAG
Transistor Products, Inc.
MINI-COR
JFD Mfg. Co.
MINI-MAX
National Carbon Co.,
Div. Union Carbide &
Carbon Corp.
MINIMITE
Astron Corp.
MINI-MIX
Switchcraft, Inc.
MINISEL
Electronic Devices Inc.
MIN-KAPS
Centralab Div.,
Globe Union, Inc.
MISSION-WESTERN
Mission-Western
Engineers
MI-TEE-RAY
Fretco Inc.
M-JAX
Switchcraft, Inc.
MOBIL-MIKES
Electro-Voice Inc.
MOLARC
Mole-Richardson Co.
MOLD-EASE PER
Merix Chemical Co.
MOLDTITE
United Condenser Corp.
MOLD-X
American Radionic Co.
MONARCH
British Electronic
Sales Co.
MONOSET
Telex, Inc.
MORRICE
Jordan Mfg. Co.
MOUNTIE
Danforth Mfg. Co.
MOVIE-CLEAR
Sylvania Electric
Products
MT
Illinois Condenser Co.
MUGWUMP
Radio Merchandise
Sales
MULTIBOOSTER
Industrial Television
Inc.
MULTI-GATE
Hammarlund Mfg. Co.
MULTI-MODE
Tele-Beam Industries
MULTITESTER
Barrett Electronics
MULTIVOLT
Ohmite Mfg. Co.
MULTI-Z
Halliderson Transformer
Co.
MU-NET
F. W. Sickles Div.
MUTED SYLUS
Shure Bros.
MYKAPLAST
United Condenser Corp.
NA-ALD
Alden Products Co.
NATCO
National Co.
NAVARE
Videon Electronic Corp.
NECK BAND
Loge Sound Engrs.,
J. M.
NEPCO
National Electric
Products Corp.
NEPCOLINE
National Electric
Products Corp.
NEVATIP
Radio Merchandise
Sales Inc.
NEVER-STAIN
Nichols Wire &
Aluminum Co.
NEW LIFE
A P Electro Lab
NEY-ORO
Ney Co., J. M.
NINE LIVES
National Carbon Co.,
Div. Union Carbide &
Carbon Corp.
99
Blonder-Tongue Labs.
99 LINE
Walsco Electronics Corp.

NIPPER
Radio Corp. of America
NOBLELOY
Continental Carbon,
Inc.
NO-OX
Walsco Electronics Corp.
NO-STRIP
JFD Mfg. Co.
NVC
National Video Corp.
NYCO
New York Coil Co.,
Inc.
OACO
Ohio Aerial Co.
OHM
Shallcross Mfg. Co.
OLSON
Lipps Eng'g., Edwin A.
OMNITENNA
Tennalab
102 BALANCE
Self-Lifting Plano
Truck Co.
ORTHOGONAL TORQUE-
DRIVE
Electro-Voice, Inc.
OSCIL-O-PEN
General Test
Equipment Co.
OV-O-LINE
Atlantic Wire &
Cable Corp.
P. A.
Aerovox Corp.
PACE
Precision Apparatus
Co.
PACE-SETTER
JFD Mfg. Co.
PACIFIC-WESTERN
Mission-Western
Engineers
PAD HACKSAW
American Mercantile
Co.
PAINTON
British Electronic
Sales Co.
PAL
JFD Mfg. Co.
PALINEY #7
Nev. Co., J. M.,
PANCOSTIC
U. S. Recording Co.
PANDUX
Pacific Transducer
TB Corp.
PAN-I-LITE
Alden Products Co.
PANORAMA
JFD Mfg. Co.
PANORAMIC
Radio Merchandise
Sales
PARABORAY
Neal Electronic Co.
PARA-BOW
JFD Mfg. Co.
PARA-FLUX
Radio Music Corp.
PATRICIAN
Electro-Voice, Inc.
PE
Illinois Condenser Co.
P.E.C.
Centralab Div.,
Globe Union, Inc.
PECO
Pomona Electronics Co.
PEERAGE
Electro-Voice Inc.
PEERLESS
Aitec Lansing Corp.
PEE-WEE
Mueller Electric Co.
PELLETS
Tempil Corp.
PENDET
Centralab Div.,
Globe Union, Inc.
PEN-OSCIL-LITE
General Test Equipment
Co.
PEPCO
Aitec Lansing Corp.
PERCO
Linell Eng'g Corp.,
C. S.
PERMASEAL
Sprague Electric Co.
PERMO
Fidelitone, Inc.
PERMO-SWITCH
Centralab Div.,
Globe Union, Inc.
PFAN-TONE
Pfanstiehl Chemical
Company
PHANTOM PLASTICS
Tele-Beam Industries
PHAZOR
Industrial Test Equip.
PHOENIX SPEED-TENNAS
Phoenix Electronics, Inc.
PHONO-DOODLE
Shura-Tone Products

PHONOSTROBE
Berkshire Laboratories
PHOTRON
Thomas Electronics, Inc.
PICBOOST
CBC Electronics Co.,
Inc.
PICK-A-SHAFT
ClaroStat Mfg. Co.
PIC-SYNC TAPE
Fairchild Recording
Equip. Co.
PILOT
Pilot Radio Corp.
PILOTONE
Pilot Radio Corp.
PILOTUNER
Pilot Radio Corp.
PINHEAD
Sprague Electric Co.
PISTOGRIP
Wall Mfg. Co., P.
P-K
Parker-Kalon Div.
PLAQOHM
Ward Leonard Electric
PLASTICON
Condenser Products Co.
PLASTICORD
Chester Cable Corp.
PLASTICOTE
Chester Cable Corp.
PLASTIC-707
United Technical Labs.
PLASTISEL
Electronic Devices Inc.
PLEXICON
Erie Resistor Corp.
POCKETSCOPES
Waterman Products Co.
POLICALARM
Radio Apparatus Corp.
POLYTHENE EXTRUSIONS
Anchor Plastics Co.

QUIK-RIG
Radiart Corp.
QUICK-WEDGE
Kedman Co.
QUIK-RIG
JFD Mfg. Co.
QWIK
American Phenolic Corp.
R & A
British Electronic
Sales Co.
RADA
Kay Electric Co.
RADALIGNER
Kay Electric Co.
RADAMETER
Raytheon Mfg. Co.
RADARANGE
Raytheon Mfg. Co.
RADAR-TENNA
Brach Mfg. Corp.
RADAX
Electro-Voice, Inc.
RADIOCRAFTER
Technicraft Co.
RADIOZYNE
Western Coil &
Electrical Co.
RADIOHM
Centralab Div.,
Globe Union, Inc.
RADIOLA
Radio Corp. of America
RADIOTRON
Radio Corp. of America
RAKSCOPES
Waterman Products Co.
RAREOX
Rare Earths, Inc.
RAZOFLEX
Walsco Electronics
Corp.
RCA VICTOR
Radio Corp. of America

RICHOMATIC
Television Remote
Control Co.
RIFLEX
Ward Leonard Electric
RITEOHM
Ohmite Mfg. Co.
RMS
Radio Merchandise
Sales, Inc.
ROHCO
Hull & Co., R. O.,
ROLLOCON
Circon Component Co.
ROLLPIN (R)
Elastic Stop Nut Corp.
ROOF-THRU
Masley Electronics
ROSCO
Ed-Berl Products
ROTALYZER
Kay Electric Co.
ROTENNA
JFD Mfg. Co.
ROTOMATIC
Johnson Co., E. F.
RPC
Resistance Products Co.
SAFETVISION
Bennett Laboratories,
Inc.
SAFETY MARGIN
Astron Corp.
SALON
Videon Electronic Corp.
SAMPSON-GLO
Sampson Chemical &
Pigment Corp.
SAND SCOTT
Holub Industries, Inc.
SAV-A-BATTERY
Electronic Devices Inc.
SAVOY
Videon Electronic Corp.
SAXI
Tensitron, Inc.
SCAPCO
Sampson Chemical &
Pigment Corp.
SCHMATCO
Stone City Machine &
Co.
SCOTCH
Minnesota Mining &
Mfg. Co.
SCREWBALL
Fretco Inc.
SCRIBE
Permoflux Corp.
SELECTOHM
Chicago Industrial
Instrument Co.
SELETRON
Radio Receptor Co.
SELFOCUS
DuMont Labs, Allen B.
SEL-LOK
Standard Pressed Steel
Co.
SENTRY
JFD Mfg. Co.
SERRASOID
Radio Engineering Labs.
SERV-A-UNIT
Alden Products Co.
SERVICE ENGINEERED
Jackson Electrical
Instrument Co.
SERVOTRON
Raytheon Mfg. Co.
707
Anchor Electronics, Inc.
7 STAR
Tele-Ex-Pand Corp.
SF-JAX
Switchcraft, Inc.
SHEATH-LEED
Don Good, Inc.
SHURFLO ROSIN CORE
Anchor Metal Co.
SIGNALETTE
Lytle Eng'g. & Mfg.
SIGNA-MATCHER
Centralab Div.,
Globe Union, Inc.
SIGNATURE
Lansing Sound Inc.,
James B.
SILERTEX
Erie Resistor Corp.
SIL-FOS
Handy & Harman
SILVER CAP
F. W. Sickles Div.
SILVERLINE
General Instrument
SK
Skottie Electronics Inc.
SKYCHIEF
Comburn Inc.
SKY-HI
Thomas Mold & Die
Co.
SKY-LITE
Hy-Lite Antennas, Inc.
SKY-LOK
JFD Mfg. Co.

SKY-MASTER
Jewell Inc., A. W.
SLAKOUT
Ohio Aerial Co.
SLIDEOHM
Aerovox Corp.
SLIMAIR
Electro-Voice, Inc.
SMA
Lytle Eng'g. & Mfg. Co.
SMART SET
Calbest Eng'g &
Electronics Co.
SMATCO
Stone City Machine
SMT
Illinois Condenser Co.
SNAPPER CLIP
Mueller Electric Co.
SNUPEC
Centralab Div.,
Globe Union, Inc.
SNYDERMATIC
Snyder Mfg. Co.
SODEREZE
Phelps Dodge Copper
SOLARSPTS
Mole-Richardson Co.
SOLDER MICROFORMS
Anchor Metal Co.
SOLDERWHIZ
Wassco Electric
Products Corp.
SOLID-ROD
JFD Mfg. Co.
SOLVALL
A P Electro Lab
SONA
Kay Electric Co.
SONARMETER
Raytheon Mfg. Co.
SONAX
Electro-Voice, Inc.
SONODYNE
Shure Bros.
SOUNDCRAFT
Reeves Soundcraft Corp.
SOUNDMIRROR
Brush Electronics Co.
SPEECH MASTER
Jensen Mfg. Co.
SPEED-CESSORIES
Phoenix Electronics, Inc.
SPEED CLAMP
Tinnerman Products,
Inc. Dept 16
SPEED CLIP
Tinnerman Products,
Inc. Dept 16
SPEED-DEE
Radiart Corp.
SPEEDEX
General Cement Mfg.
Co.
SPEED GRIP
Tinnerman Products
SPEED-MOUNTS
Phoenix Electronics,
Inc.
SPEED NUT
Tinnerman Products
SPEED-X
Johnson Co., E. F.
SPHEREX
Electro-Voice, Inc.
SPICO SUPER PHANTOM
Spirling Products Co.
SPINLAB
Special Instruments
Lab., Inc.
SPINRITE
Stevens Walden Inc.
SPIRAL-TENNA
Hilo TV Antenna Corp.
SPIRASHIELD
Muter Co.
SPONGEE
Imperial Radar &
Wire Corp.
SPRAYWAY
Tru-Pine Co.
SPRING-ACTION
Sheldon Electric Co.
SP SYSTEMS
Service Parts Systems
SRX
Pioneer Electric &
Research Corp.
STABLEX CAPACITORS
Industrial Condenser
Corp.
STACO
Standard Electrical
Products Co.
STA-KON
Thomas & Betts Co.
STANCOR
Chicago Standard
Transformer Corp.
STANDEE
ClaroStat Mfg. Co.
STA-PUT
Consolidated Wire &
Associated Cos.
STAR'S
Star Stainless Screw Co.



BRAND & TRADE NAME INDEX

PORTA-KALL
Loge Sound Engrs.,
J. M.
PORT-A-PHONE
Feiler Eng'g &
Mfg. Co.
PORTROLA
Bell Sound Systems
POSTLITES
Drake Mfg. Co.
POWERSEL
Electronic Devices Inc.
POWRMIKE
University Loudspeakers,
Inc.
POWR-RIB
Ohmite Mfg. Co.
PRECEDENT
Radio Engineering Labs.
PREFAB
Radio Merchandise
Sales
PRINTED WIRING
Aerovox Corp.
PRIVATE LINE
Conn. Telephone &
Electric Corp.
PROFESSIONAL
Trimm, Inc.
PROKAR
Sprague Electric Co.
PRO-LOAD
S.O.S. Cinema Supply
Corp.
PULSESCOPES
Waterman Products Co.
"P" WEE CHOKES
Suprex Electronics
Corp.
PYRO
Pyrometer Instrument
PYROHM JR.
Aerovox Corp.
PYROMARK
Tempil Corp.
PYROUAC
Elite-McClough, Inc.
Q LACE
Edwin I. Guthman &
Co.
QUADRILINE
Radio Engineering Labs.
QUAM ADJUST-A-CONE
Lowell Mfg. Co.

RCP
Radio City Products Co.
REACTRON
United Condenser Corp.
REBEL
Klipach & Associates
RECITALIST
Rek-O-Kut Co.
RECORDIO
Wilcox-Gay Corp.
RE-CORD-O-PONE
Bell Sound Systems, Inc.
RECTIChARGER
Raytheon Mfg. Co.
RECTIFIER
Raytheon Mfg. Co.
RECTISEL
Electronic Devices Inc.
RED BALL
Columbia Resistors Inc.
REDI-RIG
Radio Merchandise
Sales, Inc.
RED LINE
Rhodes & Sons
RED SEAL
Radiart Corp.
RED SEAL
Radio Corp. of America
REDSKIN
Sangamo Electric Co.
REGENCY
Electro-Voice, Inc.
REGENCY
IDEA, Inc.
REG-O-MATIC
CBC Electronics Co.
REL
Radio Engineering Labs.
RELIATRON
Westinghouse Electric
Corp.
RESINEX
Sangamo Electric Co.
REVCOTHENE
Revere Corp. of America
REXETTE
Rex Electronics Corp.
RHYTHMASTER
Rek-O-Kut Co.
RICHMOND
Lowell Mfg. Co.

SUBSCRIPTION PROGRESS REPORT

Gross Distribution—50,000

Verified by Post Office receipts or sworn statements pending official association audit.

Paid Subscriptions—43,000

An all-time record for a trade publication eight months old.

Source of Subscription Sales:

Direct to publisher
(No premium)
21,000

Sold through subscription
salesmen (No premium)
22,000

Sold by manufacturer
(Premium offer)
71

All subscriptions from every source verified by business letter head or card.

TECHNICIAN is the preferred publication of the service trade. Still in effect is Caldwell-Clements' "prove it yourself" offer to reimburse manufacturers who make their own verification surveys. Full details on application.

The use of classified telephone directories as the source of names for a survey is a fair and equitable one for all publishers. These lists represent 100% of the TV service business locally, excluding experimenters and consumers. Most important of all, these directories are available to all publishers who are sincere in their effort to build a publication for the trade only.

Is this not significant, too? No other service publication (only TECHNICIAN) has published an offer to underwrite a manufacturer's own poll of servicemen's preference.

The industry is plagued with a rash of hit-and-run trade paper surveys. A survey flashed on an advertising buyer by space salesman without giving the facts on the list used may be a "ringer" whose purpose is to deceive or confuse. Remember, it's fun to be fooled, but don't charge it to your advertising budget.

TECHNICIAN
& Circuit Digests

480 Lexington Avenue,
New York 17, N. Y.

- STENO
Crescent Industries
- STOP ARK
A P Electro Lab
- STRATE-LINE
Radiart Corp.
- STRATO
Spiraling Products Co.
- STRAT-O-FLITE
Stratosol Mfg. Co.
- STRAT-O-LITE
Stratosol Mfg. Co.
- STRATO RAY
Fretco Inc.
- STRATO TOWERS
Pipestone Sales Co.
- STRIPMASTER
Ideal Industries, Inc.
- STRIPOHM
Ward Leonard Electric
- STYROFLEX
Phelps Dodge Copper
- SUBURBAN
Radiart Corp.
- SUPERBULLSEYE
Radiart Corp.
- SUPER CAP
United Electronic Mfg.
- SUPERIOR
Brach Mfg. Corp.
- SUPERIOR
Radiart Corp.
- SUPERIOR
Wall Mfg. Co., P.
- SUPERJET
JFD Mfg. Co.
- SUPER KATY
Kay-Townes Antenna Co.
- SUPER KWICK CLIMB TOWERS
Jontz Mfg. Co.
- SUPER MARKER INJECTOR
Scala Radio Co.
- SUPEROTOR
Leader Electronics
- SUPER PHANTOM
Spiraling Products Co.
- SUPER-PRO
Hammerlund Mfg. Co.
- SUPER Q
Edwin I. Guthman & Co.
- SUPER REC-U-VOLTS
Gramer Transformer Co.
- SUPER-STRUCTURE
Radiart Corp.
- SUPERTENNA
Tennalab
- SUPER-VEE
Radiart Corp.
- SUPER-X
Camburn, Inc.
- SWITCHMAT
Recora Co.
- SWIVELBEAM
Radio Merchandise Sales, Inc.
- SWIVLTOP
Moody Machine Products Co.
- SYNCHRON
Hansen Mfg. Co.
- SYNCROLL DRIVE
Fairchild Recording Equip. Co.
- SYNKOTE
Plastoid Corp.
- SYNTHINOL
Consolidated Wire & Associated Cos.
- TACO
Technical Appliance Corp.
- TACOPLEX
Technical Appliance Corp.
- T & B
Thomas & Betts Co.
- TEL-AIR
Tele-Beam Industries
- TEL-ATTEN
Vidaire Electronics Mfg. Co.
- TELCO
General Cement Mfg. Co.
- TELECOA
Television Co. of America
- TELEAD
Don Good, Inc.
- TELECAP
Sprague Electric Co.
- TELECHIEF
Sangamo Electric Co.
- TELECORD
Whitney Blake Co.
- TELE-COUPLER
Vidaire Electronics Mfg. Co.
- TELEDUCT
Whitney Blake Co.
- TELEFUNKEN
American Elite, Inc.
- TELE-MATCH
Vidaire Electronics Mfg. Co.
- TELE-MOBILE
Tele-Ex-Pand Corp.
- TELE-PLEX
JFD Mfg. Co.
- TELEPRENE
Whitney Blake Co.
- TELERING
Telkor Inc.
- TELETALK
Webster Electric Co.
- TELETRON
DuMont Labs., Allen B.
- TELE-VANES
Ward Products Corp., Div. The Gabriel Co.
- TELEVER SWITCHES
Switchcraft, Inc.
- TELEVOLTER
Jackson Electrical Instrument Co.
- TEL-OHMIKE
Sprague Electric Co.
- TEMP-ALARM
Tempil Corp.
- TEMPILAQ
Tempil Corp.
- TEMPILSTIK
Tempil Corp.
- TENNA-CLAMP
Mueller Electric Co.
- TENNA-CLIP
Industrial Television, Inc.
- TENNA-MASTER
Spiraling Products Co.
- TENNA-MATCH
Vidaire Electronics Mfg. Co.
- TENNA ROTOR
Alliance Mfg. Co.
- TENNA SCOPE
Alliance Mfg. Co.
- TENNA-SWITCH
Leader Electronics
- TENNA-TEK
Radio Merchandise Sales
- TENNA-TOP
Electro-Voice, Inc.
- TENNATUBE
National Electric Products Corp.
- TEN SPOT
Fenton Co.
- TESCON
T-V Products Co.
- TEST-GLO
Ideal Industries
- TEST MASTER
Precision Apparatus Co.
- TEST-O-LITE
Brach Mfg. Corp.
- TETRAD DIAMOND NEEDLE
Tetrad Co.
- THERMINDEX
Tempil Corp.
- THERMO
Ideal Industries, Inc.
- THERMOCUBE
Radio Engineering Labs.
- THERMO-GRIP
Ideal Industries
- THERMOSWITCH
Fenwal, Inc.
- THERMO-TIP
Ideal Industries, Inc.
- THESAURUS
Radio Corp. of America
- THOMMSOPRENE
Whitney Blake Co.
- 3-IN-ONE
JFD Mfg. Co.
- THRUPASS
Sprague Electric Co.
- TI-MATCH
Camburn, Inc.
- TIMES RECORDS
Cook Laboratories, Inc.
- TIOGA
Sheldon Electric Co.
- TIPWRENCH
Smith Heat Treating Co.
- TITE
A P Electro Lab
- TITONE
Sonotone Corp.
- T-JAX
Switchcraft, Inc.
- TOBE
Deutschmann Corp., Tobe
- TOMAHAWK
Stevens Walden Inc.
- TOM THUMB
Spiraling Products Co.
- TOMETEX
Electro-Voice Inc.
- TOPPER
Camburn, Inc.
- TORQUE-DRIVE
Electro-Voice, Inc.
- TRACOMETER
Hickok Electrical Instrument Co.
- TRANSALYZER
Kay Electric Co.
- TRAV-ELECTRIC
Terado Co.
- TRIAXIAL
Jensen Mfg. Co.
- TRIG-R-HEAT
Wall Mfg. Co., P.
- TRI-PLEX
Jensen Mfg. Co.
- TRI-TRAN
Triwec Transformer Co.
- TROMBONE
Ward Products Corp., Div. The Gabriel Co.
- TRUECRAFT
Ed-Berl Products
- TRU-MATCH
Quam Nichols Co.
- TRU-RIP
Whitney Blake Co.
- TRU-SONIC
Stephens Mfg. Corp.
- TRYLON
Wind Turbine Co.
- TUBE-MASTER
Precision Apparatus Co.
- TUF-GUY
Fenton Co.
- TUNE-A-SCOPE
JFD Mfg. Co.
- TUNE-O-MATIC
Electro-Voice, Inc.
- TUNERASER
Superelex Electronics Corp.
- TV SERVISSET
Lee Electronic Labs.
- TV TELE-CLEAR
Merix Chemical Co.
- 23-CLIPPER
Centralab Div., Globe Union, Inc.
- TWILT
Electro-Voice Inc.
- TWINSET
Telex Inc.
- TWIN-TILT
Electro-Voice Inc.
- TWISTLOCK
Hubbell Inc., Harvey
- TWIST-LOK
Sprague Electric Co.
- TWIST-MOUNT
Pyramid Electric Co.
- TWISTUBE
Fenton Co.
- TWO-TIMER
Vocaline Co. of America Inc.
- TYNEE-DRY
Pyramid Electric Co.
- TYNISWITCH
Sessions Clock Co.
- U-ASK-IT
Electronic Eng. Co.
- UEE-D-X
LaPointe Electronics Inc.
- ULTRA
Kay Electric Co.
- ULTRA-BEAM
Camburn Inc.
- ULTRADAPT
Radio Merchandise Sales
- ULTRA-LINEAR
Acro Products Co.
- ULTRA-MATIC
Radiart Corp.
- ULTRAVERTER
Blonder-Tongue Labs.
- UMC
Illinois Condenser Co.
- UMP
Illinois Condenser Co.
- UMS
Illinois Condenser Co.
- UMT
Illinois Condenser Co.
- UNBRAKO
Standard Pressed Steel Co.
- UNECAP
United Electronic Mfg.
- UNICON
United Condenser Corp.
- UNI-CORE
Alpha Metals, Inc.
- UNIDYNE
Shure Bros.
- UNIMATIC
Calbest Eng'g & Electronics Co.
- UNIPOINT
Shure Bros.
- UNI-RACK
Alden Products Co.
- UNIVERSAL
Mueller Electric Co.
- URBANETTE
Videon Electronic Corp.
- UTC
United Transformer Co.
- UTONE
Utah Radio Products Co.
- VAM
Video Accessory Mfg. Co.
- VARICON
Elco Corp.
- VARI-LOOPSTICK
Superelex Electronics Corp.
- VARI-TENNA
Superelex Electronics Corp.
- VARIVOLT
Halladson Transformer Co.
- VASCO
Mitchell Industries Inc.
- VEE-D-X
LaPointe Electronics Inc.
- VENTISEL
Electronic Devices Inc.
- VERSACONE
Radio Merchandise Sales
- VERSA-TOOL
Phillips Mfg. Co.
- VERSI-MOUNT
Radio Merchandise Sales
- VIBRALYZER
Kay Electric Co.
- VICO
Video Industries Co.
- VICTOR
Radio Corp. of America
- VIDEO-BEAM
Camburn, Inc.
- VIDEOMETER
Hickok Electrical Instrument Co.
- VIDEOTRON
National Union Radio Corp.
- VIKING
Johnson Co., E. F.
- VIPOWER
Radiart Corp.
- VISITRON
Rauland Corp.
- VISULITE
Keystone Electronics Corp.
- VITAMIN Q
Sprague Electric Co.
- V-M, THE VOICE OF MUSIC
V-M Corp.
- VOCATRON
Vocaline Co. of America
- VOLTAGE
Sittler Corp.
- VOLT-A-TEST
Sittler Corp.
- VOLTOHYMST
Radio Corp. of America, RCA Tube Dept.
- VOYAGER
Fidelity Amplifier Co.
- V-2
Fretco Inc.
- VYCOR
Corning Glass Works
- WALDEN
Stevens Walden Inc.
- WALL-THRU
Mosley Electronics, Inc.
- WALLY
Wall Mfg. Co., P.
- WEATHER MASTER
Jensen Mfg. Co.
- WECOR
Webster-Chicago Corp.
- WEE-PEE-WEE CLIP
Mueller Electric Co.
- WELDPower
Raytheon Mfg. Co.
- WESTERN PACIFIC TRANSFORMERS
Birdsell Mfg. Co.
- WHETHA-TUBE
Wheatland Tube Co.
- WILKOR RESISTORS
Aerovox Corp.
- WINCO
Wincharger Corp.
- WIPE
Merix Chemical Co.
- WIRE LUBE
Ideal Industries
- WISSH
Workman TV, Inc.
- XCEL
Xcelite, Inc.
- XTALATOR
Kay Electric Co.
- X-VAR
Fidelity Chemical Products
- YOK-EX
Vidaire Electronics Mfg. Co.
- ZAK
U.M.&F. Mfg. Corp.
- ZIG-ZAG
Trlo Mfg. Co.
- ZINKTRON
Constad Laboratories
- ZIPPER CAPACITORS
Centralab Div., Globe Union, Inc.
- ZOOM-UP
Camburn, Inc.

"UNITED WE STAND"

Great Progress Made by Technicians in Organizing for High Standards, Professional Recognition and Better-Informed Public—A Roster of 122 Service Membership Organizations Compiled by Technician Magazine

DAYTON—Television Service Guild 4011 N Main St
Don Thomas Pres
HILLSBORO—Southern Ohio Radio & TV Techn Assoc
Box 245 Frank O Miller Pres
SPRINGFIELD—Radio & TV Assoc of Springfield 0
1805 Edwards Ave Russell Dovel Pres
TOLEDO—Electronic Technicians Assoc of Toledo 626
Pleasant Place Orville G Shanteau Secy

OKLAHOMA

OKLAHOMA CITY—Oklahoma TV & Radio Serv Assoc
2908 NW 23 St H O Eales Pres

PENNSYLVANIA

ALTOONA—Blair Co Assoc of Radio Service Engrs 214
E Cherry Ave William Mofitt Secy
CARBONDALE—Federation of Radio Servicemens Assoc
Box 61 Milan J Krupa Chairman
CARBONDALE—Lackawanna Radio Service Engrs 67
S Main St Leon J Helk Secy
CHESTER—Television Serv Dirs Assoc of Dela Co Box
355 William H Morrow Pres
HARRISBURG—Mid-State Radio Servicemens Assoc of
Penna 1519 N 4 St L B Smith Pres
HOLLIDAYSBURG—Blair Co Assoc of Radio Serv Engrs
103 Broad St David I Dodson Pres
JOHNSTOWN—Greater Johnstown TV Assoc 109 Haymes
St Paul L Weir Pres
KINGSTON—Federation of Radio Servicemens Assoc of
Penna 94 W Bennett St
LANCASTER—Conestoga TV Assoc 915 New Holland
Ave L J Menple Pres
PALMERTON—National Community TV Assoc Box 71
M F Malarky Jr Pres
PHILADELPHIA—Council of Radio & TV Service Assoc
1300 N 3 St Albert Haas Pres
PHILADELPHIA—North-East TV Service Dirs Assoc
6321 Frankford Ave R H Cherrill Pres
PHILADELPHIA—Philadelphia Radio Servicemens Assoc
1307 W Rockland St S Brenner Pres
PHILADELPHIA—Television Contractors Assoc 123 S
46 St Albert Haas Pres
PHILADELPHIA—Television Service Dirs Assoc 6021
Opontz Ave Louis J Smith Pres
PITTSBURGH—Radio & TV Servicemens Assoc of Pitts
1741 East St B Bregenzner Secy
READING—Berks County Electroncs Dirs Assoc 904 N 9
St LeRoy J Link Pres
READING—Reading Radio Service Technicians 704 Wal-
nut St John C Rader Secy
SCRANTON—Laekawanna Radio Technicians Assoc Cham-
ber of Commerce Bldg A B Gajowski Pres
STEELTON—Mid-State Radio Servicemens Assoc 22 S
Front St Fred J Schmidt Secy
WASHINGTON—Radio TV Service Assoc 471 W Chestnut
St Carl J Wagner Secy
WILKES-BARRE—Radio Servicemens Assoc of Luzerne
Co Box 309 Maarice Rader Pres
WILLIAMSPORT—Associated Radio Servicemen of Cen
Penna 1643 Memorial Ave C W Smith Secy
YORK—Southern Penna Radio & TV Servicemens Assoc
204 Lyndhurst Rd Joseph Hauser Secy

RHODE ISLAND

PROVIDENCE—Rhode Island Radiomens Business Assoc
Box 800 Hugo Olabri Pres

TENNESSEE

CHATTANOOGA—Radio & TV Service Assoc 3509 Ross-
ville Blvd David Oehlson Secy
MEMPHIS—Television Installation & Service Assoc 966
E McLenore Ave C N Burns Pres

TEXAS

DALLAS—Dallas Radio-TV Sales & Service Assoc Box
2955 Grover Peardon Secy
FORT WORTH—Fort Worth Radio & TV Assoc 1610
Eighth Ave Traett Kimzey Pres
FORT WORTH—Texas Electronic Assoc 1610 Eighth Ave
Leonard R Smith Pres
GRAND PRAIRIE—Dallas Radio Sales & Serv Assoc Floyd
& Dickey Radio Shop Roger Dickey Pres
HOUSTON—Texas Electronic Technicians Assoc Box
15011 Al Gaskey Assoc Mgr
SAN ANTONIO—San Antonio Radio & TV Assoc 1922
W Ashby Place Albert R Niehaus Pres

UTAH

SALT LAKE CITY—Utah Assoc of Radio & TV Service-
men 418 Frick Bldg J F Burns Pres

VIRGINIA

NEWPORT NEWS—Tidewater Radio-Servicemens Assoc
2105 1/2 Wickham Ave David Heorn Pres

WASHINGTON

KING COUNTY—King County Television Service Assoc
Jim Humphrey Pres
SEATTLE—North West Appl & TV Assoc 512 1st Ave
N Ed Smith Secy

WEST VIRGINIA

HUNTINGTON—Electronic Technicians Assoc Box 262
Scott Adams Pres

WISCONSIN

EAU CLAIRE—Indianhead Radio-TV Servicemens Assoc
602 Water St C W Stiemke Secy
MILWAUKEE—Milwaukee Assoc of Radio & TV 1312
W Atkinson St Carl Lenz Pres

WYOMING

CHEYENNE—Cheyenne T V Technicians Assoc 1020
E Pershing Homer E Moser Pres
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ALABAMA

ALABAMA CITY—Radio & TV Technician Guild 315 N
24 St F F Hall Pres

ARIZONA

TUCSON—Electronic Assoc of Tucson Ariz 2616 E Broad-
way Arthur Wheeler Pres

ARKANSAS

NORTH LITTLE ROCK—TV Technicians Assoc of Greater
L Rock Box 542 J E Traett Pres

CALIFORNIA

BREA—Anahelm Chapter Radio Technicians Assoc 201
S St James Leldtke
COLTON—Citrus Belt Radio Technician Assoc Box 344
Roy Clark Secy
HOLLYWOOD—Society of TV Engineers 5746 Sunset Blvd
Herbert Pangborn Pres
LONG BEACH—Radio Technicians Assoc Box 4085 Joseph
Martin Pres
LOS ANGELES—Radio & TV Assoc 3257 West 6 St
C Dankla Pres
POMONA—Radio & TV Technicians Assoc 11241 Ka-
dota Ave Fred Walters Pres
RICHMOND—TV & Radio Servicemens Assoc of Contra
Costa Co Box 1334 L C Wade Pres
SAN BERNARDINO—Radio Technicians Assoc 2896 "H"
St Charles Brouyette
SAN FRANCISCO—Radio & TV Dealers Assoc 6299
Mission St T R Hogman Pres
SANTA MONICA—Radio Technicians Assoc 1934 14 St
Harvey Margulies Pres
SANTA PAULA—Radio Electronics Specialist Assoc 622
Main St Gene OrNSTein Pres
VAN NUYS—Society of Radio & TV Technicians Box
126 A J Meyer Pres

COLORADO

DENVER—Rocky Mountain Radio-TV Guild 5524 E Col-
fax Ave Thomas Sampson Secy
GREELEY—Rocky Mountain Radio & TV Guild 707 10
St Gene M Norris Pres
PUEBLO—Pueblo Radio Servicemens Assoc Box 3063
Randolph Havens Secy

CONNECTICUT

BRIDGEPORT—Radio & TV Dealers Assoc 1243 Main
St Thomas P Cafora Pres
NEW BRITAIN—Television Technician Assoc 20 Orange
St Thaddens Grygrec Secy

FLORIDA

JACKSONVILLE—Jacksonville Electronics Technician
Society 1526 Gary T Thompson Pres
MIAMI BEACH—Radio & TV Technicians Guild of Fla
119 NW 12 Ave C D Pierce Pres
TAMPA—Radio & Television Service Assoc 9302 Dart-
mouth Ave Raymond Murphy Secy

ILLINOIS

CHICAGO—Nat'l Alliance of TV & Electronic Service
Assoc 5908 S Troy St F J Moch Pres
CHICAGO—Television Installation Service Assoc 5908
S Troy St F J Moch Pres
ROCKFORD—Rockford CTIS Assoc 100 W Jefferson St
Roy Pearson Pres

INDIANA

ANDERSON—Radio & TV Service Engineers Assoc 1624
W 9 St Joe Groves Pres
COLUMBUS—Radio-TV Service Dealer Assoc 910 25 St
Gry F Preston Secy
EVANSVILLE—Radio & TV Servicemens Assoc 105 N
Spring St Raymond Temple Secy
SEYMOUR—Television Servicemen's Assoc RFD CIIF
Lockman Pres

IOWA

DES MOINES—Television Servicemens Assoc 2409 Uni-
versity Ave Jack Davis Pres
OTTUMWA—Radio Technicians Assoc e/o Brown Elec
Serv 515 Church St Gerry Brown Pres

KANSAS

SALINA—Radio Service-Dealers Assoc of Kansas 149
N 7 St A L Keith Pres
WICHITA—Radio Service Dealers Assoc of Kansas 1024
S Broadway Ted Combs Pres

LOUISIANA

NEW ORLEANS—Radio TV & Appliance Assoc of New
Orleans J Magoni Pres

MASSACHUSETTS

ARLINGTON—Radio TV Technicians Guild 210 Massa-
chusetts Ave Gilbert Clark Pres

FALL RIVER—Radio-TV Technicians Guild of Greater
F River Box 1307 M Provost Pres
NEW BEDFORD—Radio & TV Technicians Guild Sixth
St Camille A Forand Pres

MICHIGAN

BATTLE CREEK—Television Assoc of Battle Creek Box
16 J H Alexander Secy
DETROIT—Electronic Service Assoc 1763 E Seven Mile
Rd Ralph L Carew Pres
DETROIT—Television Service Assoc of Michigan 2238
Dime Bldg Harold Chase Chrm of Board
KALAMAZOO—Radio TV Assoc of Kalamazoo Box 773
Paul M Goecke Pres

MINNESOTA

MINNEAPOLIS—Radio & TV Service Assoc 2451 Hen-
nepin Harold Simmonson Pres
ROCHESTER—Rochester Radio & TV Servicemens Assoc
1205 2 St NE George McKinzie Pres
ST PAUL—Radio-TV Service Assoc of St Paul 635 S
Smith Ave Joe Driscoll Pres

MISSOURI

KANSAS CITY—Electric Assoc of Kansas City 2205
Grand St K G Gillespie Pres
KANSAS CITY—Television Service Engineers 307 Shw-
kert Bldg Ray Crawford Pres
ST LOUIS—Assoc of TV Service Cos of Greater St Louis
1724 S 39 St V J Lutz Pres

NEBRASKA

LINCOLN—Nebraska Electronics Service Assoc 1617 S
17 St H M Tanquary Pres
OMAHA—Television & Electronics Service Assoc 1104
Woodman of World Bldg Wm Briza Pres

NEW HAMPSHIRE

MANCHESTER—Radio & TV Assoc of N H 120 Merri-
maek St Harvey O'Dowd Pres

NEW JERSEY

PATERSON—Radio & TV Servicemen of N J 211 Mar-
ket St H B Rhodes Pres
PERTH AMBOY—TV Technicians of Greater Perth Am-
boy 414 Amboy Ave Bud Anderson Pres
TRENTON—Delaware Valley Radio Assoc 315 Beechwood
Ave Lester H Allan Pres
TRENTON—Radio Servicemens Assoc 72 S Olden Ave
George E Owens Pres

NORTH CAROLINA

CHARLOTTE—Radio & TV Service Assoc 1300 E 4 St
A C Kimbiri Pres

NEW YORK

BETHPAGE—Radio TV Guild of Long Island Box 87
Henry Wawryck Pres
BINGHAMTON—Southern Tier Chapter Radio Servmn of
Amer 85 Robinson St H Hazzard Pres
BRONX—Empire State Federation of Electronic Techs
Assoc 1215 Thierlot Ave O Capitelli Pres
BUFFALO—Buffalo Radio Institute Alumni 45 W Mohawk
St Philip Oehler Secy
BUFFALO—Radio Technicians Assoc 657 Broadway
Theodore J Talaak Pres
BUFFALO—Radio-TV Service Assoc Station E Box 28
Ferdinand J Lynn Pres
ELMIRA—Southern Tier Electronics Assoc Box 442
419 Balsam St Richard J Marshall Pres
FOREST HILLS LONG ISLAND—Forest Radio & TV
Assoc 109-01 72 Rd G Berger Pres
KINGSTON—Ulster Electronic Technicians Assoc 94
Furnace St Raymond E Trumpalt Pres
MT VERNON—Independent Radio & TV Technicians of
West Co 60 S 3 Ave H Wiegand
NEW YORK—Associated Radio TV Servicemen of N Y
101 W 53 St Max Leibowitz Pres
NEW YORK—Nat'l Electronic Technician Serv Dirs
Assoc 165 E Broadway Roger K Haines Pres
NEW YORK—Radio & TV Electronic Technicians Assoc
52 E 19 St Charles J Vassalo Pres
OCEANSIDE—Long Island Electronic Technicians Assoc
88 4 St Wm A Carey Pres
OWEGO—Endicott Radio & TV Assoc Cadis Stage Rd
Charles B Haake Pres
ROCHESTER—Radio Technician Guild 703 Temple
Bldg Alfred L Best Pres
SYRACUSE—Syracuse TV Technicians Assoc 500 Lafay-
ette Bldg Gordon M Vrooman Secy
YONKERS—Television Contractors Assoc of N Y 855
Midland Ave A E Rhine Pres

OHIO

CANTON—Canton TV Assoc 1410 7 St NW W H
Blecker Pres
COLUMBUS—Associated Radio-TV Serv Dirs 2552 N
High St Fred Oberli Pres

TECHNICIAN BUYERS 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
Ack 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 Hdwe 840 4th Ave
McDavid & Co R P 1430 2 Ave N 7-7165
Radio Parts & Equip 1909 5 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

DOTHAN
Hand Supply Co 705 S Oates 4-3300
Signal Supply Co 248 E Troy 4-0360

GADSDEN
Southeastern Radio Parts 120 Chestnut St 6-9761

JASPER
Rameo Radio Supply 20 St & 2 Ave 2-5321

MOBILE
Emrich Radio Supply 656 Dauphin 8-2596
Forbes Electronic Distrib 57 N Washington
General Elec 54 Eslava St 8-4571
Graybar Elec 701 N Joachim St
Harris Supply 10 N Water 2-0541
McDavid & Co 120 Water St 8-1691
McGowin-Lyons Water & St Louis Sls 2-8721
*Nelson Radio 451 St Louis 2-0411
Radio Labs 111 N Royal 2-1715

MONTGOMERY
Nolin-McInnis 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



SYLVANIA Distributors IN ALABAMA

Anniston—Radio Distributing & Supply Co.
Birmingham—Ack Radio Supply Co.
—Auto Service Co.
—Clark & Jones
—James W. Clary Co.
—Electric Constructors, Inc.
—Forbes Distributing Co.
—Long Lewis Hardware Co.
—Reid Distributing Co.
Dothan—Hand Supply Co.
Mobile—Forbes Electronic Distributors, Inc.
—Harris Supply Co.
—Nelson Radio & Supply Co.
Montgomery—Nolin-McInnis Co.
—Teague Hardware Co.
—Walther Brothers Co.
Tuscaloosa—Allen & Jamison Co.

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 at 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 Hdqrs 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 4 Ave 4-2473
*Standard Radio Parts 218 N 1 Ave



SYLVANIA Distributors IN ARIZONA

Phoenix—Gough Industries, Inc.
—Midland Specialty Co.
—Radio Parts of Arizona
Tucson—Elliott Electronics, Inc.
—Standard Radio Parts

ARKANSAS

BLYTEVILLE
Blytheville Radio Supply 112 S 1 St 4467

FORT SMITH
Carter Electronic 805 N 11 St 3-4129
Interstate Electric Hdqrs Shreveport La
*Wide Radio Supply 1001 Towson 3-8926

LITTLE ROCK
Carlton Wholesale 109 W 9 St 27-9248
Connerly Radio Distrib 1201 E 2 St FR 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 Hdqrs Shreveport La
*Lavender Radio Supply 520 E 4 St 2-4195



SYLVANIA Distributors IN ARKANSAS

Blytheville—Blytheville Radio Supply
Fort Smith—Carter Electronic Supply
Little Rock—Southern Radio Supply
—Carlton Wholesale Radio, Inc.
—Thurman Supply Co.

CALIFORNIA

ALHAMBRA
*Coast Electronic Supply 527 W Main Ca 3-4049

BAKERSFIELD
Arbuckle J C 500 E 19 St 5-5816 Hdqrs 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

BURBANK
Dean Co F S 1500 W Burbank Ch 8-4408 Hdqrs
Long Beach
Pacific Radio Exch 4101 W Burbank Hdqrs Holly-
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 Distrib 1508 E Compton

EL CENTRO
Alnza-Huffman Distrib 1125 W Main 2307

EL MONTE
Kimball-Stark 713 S Tyler FO 0-2594

EMERYVILLE
General Electric Supply 5400 Hollis 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 Fulton St
DeJarnatt Whse B J 223 Fulton 2-2153
Dowley Harry 725 L St 2-4108
General Elec Supply 1234 O St 4-4746
Graybar Electric 101 Van Ness Ave 2-4175
Kierulff & Co 725 L St Hdqrs Los Angeles
Kinney & Faust 1740 Van Ness 6-8321
Meyberg Co L J 2930 Butler Hdqrs San Francisco
Ports Mfg Co 3265 Belmont 3-6728
Schleifer Sound 2121 Blackstone 7-7234
Westinghouse Elec 2608 Calif 4-5091

Imperial
RADAR & WIRE CORP.

GROUND WIRE, TUBULAR AIR
FOAM AND OTHER FINE PROD-
UCTS. WRITE FOR BROCHURE

FULLERTON
United Radio & Electr 122 W Pamona St

GLENDALE
Hagerty 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 OR 8-5344

LONG BEACH
Dean Co F S 969 American 6-5281
General Electric Co 840 W 12 St 68-8419
Gough Industries 838W12 Hdqrs Los Angeles
Graybar Electric 800 W 16 St 70-2911
Kierulff & 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 Hdqrs Santa Ana
*Scott Radio Supply 266 Alamitos 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
Figgart's Radio 6320 Comm Sloat Dr YO 6218
General Elec Supply 700 Turner St MA 7141
Gerstman 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 Melrose Ave WE 3-8208
Kierulff Electronics 820 W Olympic RI 7-0271
Los Angeles Radio 10215 Venice VE 8-3177
Martin Dist Co 2475 E Florence LO 5-7111
Meyberg Co L J 2027 S Figueroa RI 7-4451
Minthorne 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
*Papal 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
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
*Dunlap Whse Radio 826 5 St Hdqrs Stockton

MAYWOOD
Kierulff 6058 Walker Ave LO 5-5461

MODESTO
Dunlap Whse Radio 1216 K St Hdqrs Stockton
Pacific Teletronic & Radio Sup 417 7 St 3-7751

Cordial thanks for your cooperation in making this directory possible. If for some reason you are not listed, please notify us as soon as possible. This Directory is an annual compilation, and preparation for the 1955 issue is already under way. We'll also be grateful if you'll be certain we're on your mailing list for new products releases and glossy prints.

TECHNICIAN
& Circuit Digests

NORTH HOLLYWOOD
Hycor 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 Altshuler Co 6038 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
Rayercraft 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
Empire Electronic Dis 37 E Union St RY 1-7671

POMONA
Anderson-Maggs 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 Blaine St 8420
Massey's Radio Supply 2992 8 St

SACRAMENTO
Breill-Parks 2225 19 St GI 2-2983
Brown Co C C 1714 10 St GI 3-5931
Capitol Electronics 1714 10 St GI 3-5931
*Dunlap Whisla 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
*Kemp Co E M 1115 R 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 Gabilan 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
Kierulff & 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 5 Ave WD 0659 Hqrs
Los Angeles
Graybar Electric 720 State St FR 1361
Kierulff & 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
*Assoc Radio Distr 1251 Folsom St HE 1-0212
*Brown Co C C 61 9 St MA 1-7000
Century Distr 1111 Front St YU 2-1480
Ets-Hokin & Galvan 551 Mission St EX 2-0432
General Electric Supply 1201 Bryant St UN 3-4000
Graybar Electric 1750 Alameda St MA 1-5131
Kaemper & Barrett 1850 Miss UN 3-3080
*Mayberg Co L J 33 Gough St MA 1-3400
Offenbach & Remus 1564 Market St KL 2-2100
*Pacific Whisla 1850 Mission St UN 1-4843
Popkey 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 EX 2-2898
Tilton Industries 1850 Mission St UN 1-4843
Westinghouse Elec 201 Potrero 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
*Quemant Inc Frank 161 W San Fernando St
CY 4-0464

SAN LEANDRO
Styles & Engleman 2255 Bancroft Ave LO 9-9433

SAN RAFAEL
Abbott Co E B 345 Francisco GL 3-1130

SANTA ANA
Graybar Electric 301 French St
Hurley 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
Mac's Radio Supply 8320 Long Beach KI 4111

STOCKTON
DeJarnatt Whisla B J 515 N Hunter Hqrs Fresno
*Dunlap Whisla Radio 27 N Grant HO 6-7907



Kemp 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 Whisla 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



SYLVANIA Distributors IN CALIFORNIA

Bakersfield—Gough Industries, Inc.
Berkeley—Pacific Radio Supply Inc.
Burbank—Fred S. Dean Co.
Chico—Radio Television Products
El Centro—Ainza-Hoffman Distributors
Fresno—B. J. DeJarnatt Co.
—Harry Dooley & Co.
—Kierulff & Company
Glendale—R. V. Weatherford Co.
Long Beach—Fred S. Dean Co.
—Gough Industries, Inc.
—Kierulff & Company
Los Angeles—Bell Radio Supply
—Figart's Radio Supply Co.
—Gough Industries, Inc.
—Henderson Company
—Kierulff & Company
—Minthorne Music Co.
—Papal Bros.
—Radio Parts Sales Co.
—Radio Products Sales Co.
—Radio TV Supply Co.
—Ravenscroft Co.
—Shelley Radio Co.
—Universal Radio Supply Co.
Maywood—Kierulff & Company
Oakland—W. D. Brill Company
—Elmar Electronic Supply Co.
—Miller's Radio & Television Supply
Pasadena—Electronic Supply Corp.
Richmond—Miller's Radio & Television Supply
Sacramento—Capital Electronics & TV Supply
—E. M. Kemp Co.
—Radio Television Products Co.
Salinas—Peninsula TV
San Bernardino—Gough Industries, Inc.
—Kierulff & Company
San Diego—Electronic Equipment Distributors
—Gough Industries, Inc.
—Radio Parts Co.
—Western Radio & Television Supply
San Francisco—C. C. Brown Co.
—G. M. Popkey Co. Inc.
—Smith & Crawford
San Jose—Peninsula TV & Radio Supply Co.
Santa Ana—Hurley Electronics
Santa Barbara—Gough Industries, Inc.
Stockton—DeJarnatt Wholesale Radio Parts
—E. M. Kemp Co.
Ventura—Dealers Wholesale Supply
Walnut Creek—Millers Radio & Television Supply

Imperial

Domestic Galvanized Guy Wire
Manufactured in
18, 19, 20, 21 Gauges
Finest Quality—Lowest Prices

RADAR & WIRE CORP.

COLORADO

BOULDER
Boulder 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
Fistells Radio 1085 Lincoln St MA 3197
General Electric 1429 18 St KE 6301
Graybar Elec 104 Wazee Market TA 7116
Hasso Inc 1745 Wazee Keystone 8151
Hendrie & Bolthoff 1635 17 St KE 4111
Inter-State Radio 1200 Stout St TA 5347
Larson Distrs 550 Lincoln St
Niles Phonograph & Radio 1254 Arapahoe
Radio Parts Distr 3040 W Colfax CH
Radio Products Sales 1237 16 St KE 6591
Sweeney Co B K 1601 23 St CH 6211
Ward Terry 70 Rio Grande Blvd
Walker Radio LB 854 Broadway Hqrs Pueblo
Wreco 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 N Victoria Ave 357



SYLVANIA Distributors IN COLORADO

Denver—Interstate Radio & Supply Co.
—L. B. Walker Radio Co.
Pueblo—L. B. Walker Radio Co.

CONNECTICUT

BRIDGEPORT
Coastal Radio 1106 Barnum Ave 5-7441
General Elec 335 Kossuth 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
Westonn 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 Huntley 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
Orkil Inc P O Box 208 HA 8-6581
Roskin Distributors 275 Park Ave 89-9361
Seall & 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 Aresh 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
Amrad 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 Distribs 140 Ferry St LO 2-9941
Dale Electronic Div Dale-Conn Inc 150 James
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 H 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
*Bon J Radio Supply 439 W Main St 3-2149
General Elec Supply 23 Nichols Dr 4-2143
*Hatry of Waterbury 89 Cherry 5-1181
Mac's Radio & Electronic 200 Bank St

WEST HARTFORD
Graybar Electric 453 New Park Ave HA 33-2631



SYLVANIA Distributors IN CONNECTICUT

Bridgeport—Hatry of Bridgeport, Inc.
Danbury—Pilgrim Electronics Company
Hamden—B. H. Spinney Co.
Hartford—Hatry of Hartford, Inc.
New Haven—Amerling Company
—Connecticut Appliance Dist. Inc.
—Dale Electronic Dist.
—Hatry of New Haven, Inc.
New London—Aikins Electronic Supplies Inc.
Stamford—Hatry of Stamford, Inc.
—Stamford Radio Supply
Waterbury—Bond Radio Supply, Inc.
—Hatry of Waterbury, Inc.

DELAWARE

WILMINGTON
Almo Radio Co 6 & Orange Sts Hqrs Philadelphia Pa
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 & Tatnall Sts 6-8664
Westinghouse Electric 400 S Market 5-9611
Wholesale Electronic Supply 3rd & Monroe Sts 6-1144
Wilmington Elec Supply 405 Delaware Ave 5-4321

OMISSIONS

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.

FICKOX ELECTRICAL—ELECTRONIC
TEST EQUIPMENT
CHOICE OF THE EXPERTS



SYLVANIA
Distributors
IN DELAWARE

Wilmington—Almo Radio Co.
—Radio Elec. Serv. Co. of Pa. Inc.

DISTRICT OF COLUMBIA

WASHINGTON
*Capitol Radio 2120 14 St N W HO 2-0800
Educational Labs 1625 Conn N W DU 3434
*Electronic Wholes 2345 Sherman N W HU 5200
General Electric Supply 705 Edgewood St N E
HU 6800
Graybar Elect 60 Fla Ave N E AD 4-4800
Kenyon Radio Supply 2020 14 St DE 2-5800
Mid-Atlantic Appl 2040 W Va Ave NE LA 6-5500
*Rucker Electronic 1312 14 St NW AD 2-8554
*Silberne Radio 3308 11 St NW HO 2-7000
SE Radio Wholsters 2027 Nichols SE LU 4-5142
Southern Electronics 3405 Georgia NW TY 2-5000
Southern Whislers 707 Edgewood NE HU 3-3424
Sun Parts Distr 520 10 St ME B-2697
Westinghouse Elec 1216 K St NA 9700
Zamolski Jos M 2122 24th NE LA 6-3300



SYLVANIA
Distributors
IN WASHINGTON, D.C.

Washington—Capitol Radio Wholesalers
—Electronic Wholesalers
—Rucker Electronic Products Co. Inc.

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
Balrd 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
Puthuff 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
Thuraw 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
Thuraw 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
Thuraw 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 & Hwe 115 E Gregory St 6146
Hundley 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 Electronic Labs 938 9 St S 75-2911
*Thuraw Distr 342 3 Ave S
Welch Radio Supply 408 9 St S 7-8655
TALLAHASSEE
General Elec Supply 705 Woodward St
Thuraw 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
*Thuraw Distributors 134 S Tampa St 2-1885
Westinghouse Electric 417 Ellamae Ave 2-4271

WEST PALM BEACH
Goddard Distributors 1309 N Dixie 3-5701
Thuraw Distr 327 Okeechobee Rd



SYLVANIA
Distributors
IN FLORIDA

Daytona Beach—Hammond-Adams, Inc.
Ft. Lauderdale—Goddard Distributors, Inc.
Jacksonville—Kinkade Radio Supply Inc.
—G. Fetter Puthuff Co.
—Radio-Television Supplies, Inc.
—Thuraw Distributors, Inc.
Lakeland—Hammond-Adams, Inc.
—Radio Accessories Co.
Miami—Emerson Radio of Florida, Inc.
—Herman Radio Supply Co.
—Radio Parts, Inc.
—Thuraw Distributors, Inc.
—Walder Radio & Appliance Co.
Orlando—Hammond-Adams, Inc.
—Radio Accessories Co.
—Thuraw Distributors, Inc.
Pensacola—Grice Radio & Electronic Supplies
—Gulf Electric Supply Co.
—Nelson Radio & Supply Co.
St. Petersburg—Thuraw Distributors, Inc.
Tallahassee—Thuraw Distributors, Inc.
Tampa—Emerson Radio of Florida, Inc.
—Radio Accessories Co.
—Thuraw Distributors, Inc.
West Palm Beach—Goddard Distributors, Inc.
—Thuraw Distributors, Inc.

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
2030
Economy Auto 1130 Bankhead N W AT 1672
Edwards-Harris 258 Peachtree NW LA 5668
Electrical Whlse 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 Marletta NW
Southeastern Radio Parts 400 W Peachtree 6-9761
Specialty Distributing 425 Peachtree EL 5816
Thomas Electronics H 419 Spring N W LA 8477
Westinghouse Elec 1299 Northside Dr N W AT 2721
Yancey Co 1500 Northside Dr N W EL 8843
AUGUSTA
General Elec 811 Marion Bldg 2-3582
*Prestwood Electronics 1445 Greene St 4-5444
Specialty Distributing 644 Reynolds St Hqrs Atlanta
COLUMBUS
*Radio Sales 1326 1 Ave
Westad 1047 13th St
MACON
Electronic Distrs 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
Yancey Co 666 Indian St 4-1611 Hqrs Atlanta



SYLVANIA
Distributors
IN GEORGIA

Albany—Specialty Distributing Co.
Atlanta—Beck & Gregg Radio Co.
—Electrical Wholesalers, Inc.
—Garvin Electric Co.
—Georgia Appliance Co.
—Chas. S. Martin Dist. Co., Inc.
—Specialty Distributing Co.
—Herdon Thomas Electronics Co.
Augusta—Prestwood Electronics Co.
—Specialty Distributor Co.
Columbus—Radio Sales & Service Co.
Macon—Specialty Distributing Co.
Rome—Electronic Supply Co.
Savannah—Specialty Distributing Co., Inc.

IDAHO

BOISE
*Craddock Radio Sup 1522 State St 2-6471
General Electric 618 S 8 St 4343
Graybar Electric 14th & Idaho St 2-4501
*Kopke 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

Fretco Inc.

The Versatile Family of TV Antennas

IDAHO FALLS
Schwendliman Dist 380 E St 2470W
POCATELLO
Ballard-Carter 840 N Main St
Billmeyer's Wholesalers 240 S Arthur St



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Pioneer Radio Supply 103 S La Salle St
BELLEVIEW
*Lartz 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
Chaney's Inc 136 Pulaski 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
Altow Electronic 2737 N Ashland GR 7-5386
Arglo Sales 4305 Lincoln St WE 5-7781
Ashbach Enterprises 743 N LaSalle St WH 4-0077
Atronie Sales 6566 Sheridan RO 1-2424
*Bowman & Co J. G. 515 E 75 St 4-8070
Broadwin TV & Radio 5004 Broadway UP 8-6060
*Chaney's Inc 4740 W Chicago Ave ES 8-0830
Chicago Electronic 420 E 87 St HU 3-9700
Chicago Radio Apparatus 415 S Dearborn HA 7-2276
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- Graybar Electric 850 W Jackson Blvd CA 6-4100
- Green Hill Radio Supply 145 W 111 St PU 5-9840
- Howard Electr 3149 W Fullerton EV 4-1545
- Joseph Radio Parts 5959 W Fullerton NA 2-3914
- Lake Radio Sales 3458 W Fullerton NA 2-2310
- Lukko Sales Corp 5024 Irving Park Rd AV 3-4800
- Mid-States Electronic 5028 N Bway LD 1-2894
- *Midwest Electr 6907 N Western Ave RD 1-1160
- 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 Ave
- 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 HU 9-3311
- RCA Victor Distr 445 N Lake Shore Dr WH 4-4600
- Star Electronic 7736 S Halsted HU 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-Jimieson 311 S Western Ave CA 6-2525
- Westinghouse Elec 912 W Wash HA 1-7474

DANVILLE

- Allen Electric 18 E North St
- Bud Electronic 118 Van Buren St 925
- Westinghouse Electric 603 N Gilbert 1901

DECATUR

- Crum Dist 704 N Monroe 3-7776
- Loughname & Co 802 N Water St 2-4187
- York Radio & TV 801 N Broadway 3-3484

DIXON

- Illinois Appliance 407 W 1 St

ELGIN

- Elgin Electronic 157 Brook 7635
- Fox Electric Supply 67 N State St

ELMHURST

- Malone Electronics 123 Addison St

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- Standard Radio 523 W Poplar 640

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- Baptist Radio & TV 419 S Mauvalsterre 34

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Furste Auto Supply 5-418
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*Lofgren Dist Co 1202 4 Ave M0 4-7436

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Wabash Electronics 700 Plum St 728

OAK PARK
Melvin Electronics 238 Chicago Ave VI 8-3960

PEORIA
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Graybar Electric 704 S Adams PE 4-8211
Griffin Distributing Co 400 Franklin St
*Herberger Radio Supply 136 1 St
Klaus Radio & Electric 707 Main St
Peoria Elec Appl 631 Franklin 3-3847
Rohn Electronic 2108 Main St 4-9156
warren Radio 308 S Oak St
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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
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*Tri-City Radio Supply 1919 4 Ave 8-5681

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Moulden Distributing 106 W N Central Ave 163

WAVERLY
Waverly Wholesale 396

WHEATON
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—Chauncey's, Inc.
—Clayton Radio Parts
—Electronic Publishing Co., Inc.
—Newark—Electric Co.
—Pilgrim Distributing Co.
Decatur—York Radio Supply Corp.
Moline—Lofgren Distributing Co.
Peoria—Warren Radio Co.
Quincy—Cooper Radio Supply
Rockford—H & H Electronic Supply
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CROWN POINT
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Radio Service Hqrs 725 S Main St 2-1208

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Ferbend Inc S U 1901 W Maryland 5-8193
General Electric N New York Ave 5-5274
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Hutch & 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

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General Electric 1609 S Calhoun St HA 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
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IDS	Indus & Distr Sales
D	Distributor
BO	Branch Office
GV	Government Sales
R	Representative
SE	Sales Engineer

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*Graham Electronics 102 S Penna St LI 8487
Graybar Electric 1300 W 16 St AT 2351
GriMith Distr 321 W Maryland
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
Peaslee-Gaulbert 1401 Stadium Dr
Radio Distributing 1013 N Capital Ave ME 5-8311
Radio Equipment Co 1010 Central Ave PL 6453
Rodefeld Co 614 N Capital LI 8331



Sarnborn Electric 311 N III St PL 9584
Warren Radio 908 N III St LI 5566 LI 8970
Hdqs Toledo Ohio
Westinghouse Elec Supply 139 S Penna St MA 3301
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Moakler Electronic 949 E Maple 2-2229
KOKOMO
George's Electronic 125 N Buckeye 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
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Conrad Co A E RFD 4 2606
MARION
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Myers Radio Supply 115 W 22 St 1357
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Tri-State Electrical 601 W 10th 2-5551

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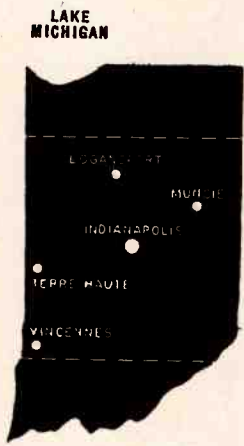
MUNCIE
General Electric 204 E Willard St 6614
Muncie Electronics 305 N Madison 8837
Standard Radio Parts 1104 S Walnut 8522
PERU
Clingaman Radio 814 W Main St
Television-Radio Distr 812 W Main 2005
RICHMOND
Fox Electronics 711 S 9 St 2-4676
Radio & TV Distr 717 S 5 St 2-4752 Hdqs South
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Rinehart Inc 511 Main 2-2581
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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
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Araher & Evinger 1216 Wabash C 4229
General Elec 801 Poplar St CR 9-695
Terre Haute Radio 501 Ohio CR 4772
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VALPARAISO
*Bowman & Associates Jess 257 W Lincolnway 3-4381

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Evansville—Hutch & Son
—Ohio Valley Sound Service
Fort Wayne—Warren Radio Co.
Indianapolis—Peaslee-Gaulbert Corp.
—Radio Distributing Co.
Kokomo—Radio & TV Dist. of Kokomo
Lafayette—Lafayette Radio Supply Inc.
Marion—Myers Radio Supply
Muncie—Muncie Electronic Supply, Inc.
Richmond—Radio & TV Distributing Co.
—Rinehart, Inc.
South Bend—Radio Distributing Co.
—Radio & TV Distributing Co.
Terre Haute—Terre Haute Radio

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- ★ SOUND EQUIPMENT
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 Iowa Radio Supply 508 3 Ave S E 5346
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 Westinghouse Elec Supply 126 S3 CR 1385

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 *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
 Haverkamp 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 Davenport

Ornbank Co G W 10 & Mulberry 3-8166
 *Radio Trade Supply 1224 Grand 8-7237
 Schneiderhahn Co A A 319 SW 5th St
 Sidles Co 8 7 St 4-0138
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 *Friday-Lynch Radio 420 W 2 604

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 *Duke's Radio 209 6 St 5-5056
 Graybar Elec Co 510 Pearl St 5-0189
 *Power City Radio 410 Jones St Hqrs Sioux Falls S D
 Westinghouse Electric 1005 Dace St 5-7634

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COFFEYVILLE
 Four State Radio 117 W 7th 693

HUTCHINSON
 Acme Radio & Television 327 W 4th St
 *Interstate Electronic Supply 325 W 4 St
 Wholesale Electronics 1019 E "A" Ave 2-4456

KANSAS CITY
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 *Western Distr 227 Santa Fe

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 *Acme Radio Supply 412 E 10 St
 General Elec Supply 115 Jackson 5-4474
 Overton Electric 522 Jackson St 3-3261

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 *Amateur Radio 1203 E Douglas 4-3579
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 General Electric 801 E 1 St 5-0620
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 Salina—Western Distributors
 Topeka—The Overton Elec. Co., Inc.
 Wichita—Interstate Electronics Supply Corp.

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ASHLAND
 Ashland Radio Supply 2125 Winchester 3125

BOWLING GREEN
 Crescent Radio Supply 212 W 10 St 9722

HARLAN
 General Elec Hoskins St 815

HOPKINSVILLE
 Randolph & Hale 2325 S Virginia

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 Skain Ave 3-1577

LOUISVILLE
 Apex Electronics Hancock & Gray WA 8851
 Burks Co P 1 911 W Broadway JA 7323
 Ewald Distributing 309 S 9 St JA 8227
 Falls City Supply 315 Roland WA 7447
 General Electric 2811 S Brook St CA 3651
 Graybar 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
 Contrantes Inc 600 W 3 St 3-6727
 Peerless Elec Equip 1206 Triplett Hqrs Louisville

PADUCAH
 General Electric Co 301 S 2 St 447



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 —Lexington Electronic Supply Co.
 Louisville—P. I. Burks & Co.
 Newport—Apex Distributing Co.
 Paducah—Warren Radio Co.

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 Brown-Roberts Hdw Supply 1810 3rd St
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 Columbia Radio & Supply 2140 Lee Hqrs New Orleans

BATON ROUGE
 Electronic Supply 1753 N 21 St 2-0517
 Graybar Electric 2442 T Dunham Ave 4-7093
 La Radio TV Distr 1645 Plank Rd 8-1456
 *Raiph's Radio Electronic Supply 812 Main St

LAFAYETTE
 Butcher Bros 438 Jefferson
 *Raiph 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

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 Allen Supply Co W B 1601 Orleans Ave
 Audiotronics 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
 Ecco Inc 601 S Peters St
 Electrical Supply Co 201 Magazine St
 Electronic Distrs 1526 Magazine MA 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
 Ole Miss Supply Co 901 Carondelet St TU 3555
 Poe-Jay Radio 2306 Tulane Ave AU 0807
 Pollean 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
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(Louisiana Continued)

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Dunckelman Distributing Co 119 Beech St
General Electric 1430 Dalzell St 5-8631
Graybar Electric 90 Fannin St 5-3271
Interstate Electric Co 1419 Culpepper St 3-6131
*Koelemay Sales Co 2350 Linwood Ave 3-4256
Lavender Radio & TV 936 Milam St
Westinghouse Electric 120 Caddo St 3-0583

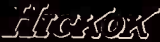


SYLVANIA
Distributors
IN LOUISIANA

Alexandria—Brown-Roberts Hardware & Supply Co.
—Central Radio Supply Co.
Baton Rouge—Electronic Supply Co., Inc.
—Louisiana Radio & Television Dist.
New Orleans—Crescent Radio & Supply, Inc.
Lake Charles—Wholesale Radio Equipment Co.
Lafayette—Radio & Electronic Supply Co.
Monroe—C & O Electronics
—Hole & McNeil
New Orleans—William B. Allen Supply Co.
—Bell Radio Supply Co.
—Columbia Radio & Supply Co.
—Electronic Parts Corp.
—Interstate Electric Co.
—Radio Parts, Inc.
—Schuler Supply Co.
—Walker Brothers Co., Inc.
Shreveport—Dunckelman Distributing Co.
—Interstate Electric Co. of Shreveport
—Koelemay Sales Co.

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AUGUSTA
Westinghouse Electric 98 Water St 2040
BANGOR
Commercial Distrs 135 Exchange St
General Elec Supply 840 Hammond St 7331
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NATIONAL UNION TUBE
DISTRIBUTORS



TECHNICIAN
BUYERS DIRECTORY

Radio Supply Co 151 Center St hdqrs Auburn
Westinghouse Elec Supply 175 Broad St 6487
HALLOWELL
*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
*Malne Electronic 148 Anderson 4-0301
Radio Serv Lab 1004 Congress hdqrs Manchester N H



SYLVANIA
Distributors
IN MAINE

Bangor—Maine Electronic Supply Corp.
—Radio Service Lab.
Portland—Moine Electronic Supply Corp.
—Radio Service Lab.

MARYLAND

BALTIMORE
American Distr Co 1200 N Fulton LO 6-8930
Berman Co H O 10 E Lombard LE 9-9002
D & H 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-Eliert Electronics 9 S Howard SA 4242
Lytron Distr Co 1338 W North Ave LA 3-8880
*Radio Elec Serv 5 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 2415 W Franklin LO 4400
*Wholesale Radio Parts 308 W Redwood St MU 5-2134
CUMBERLAND
*Zimmerman Wholesalers 162 Bedford hdqrs Hagerstown
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 hdqrs Philadelphia Pa
Aircraft Elec Calvert & Baptist St
Standard Electronics 301 Snow Hill Rd 7593
SILVER SPRINGS
Rucker Radio Wholesalers 8049 13 St
Silver Spring Electronic 948 Sligo JU 8-3567



SYLVANIA
Distributors
IN MARYLAND

Baltimore—Harry O. Berman Co., Inc.
—D & H Distributing Co., Inc.
—Radio Electric Service Co.
Cumberland—Zimmerman Wholesalers
Hagerstown—Zimmerman Wholesalers
Salisbury—Art Craft Electric Supply Co.

MASSACHUSETTS

BOSTON
Acme Distributors 1103 Columbus Ave HI 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 CO 7-4700
Del Padre Assoc L L hdqrs Springfield
*DeMambro 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 CA 7-0411
Graybar Electric 287 Columbus 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



SYLVANIA
Distributors
IN MASSACHUSETTS

Boston—Adams Distributors Co.
—Cramer Electronics, Inc.
—DeMambro Radio Supply Co.
—Gerber Radio Supply Co.
—A. W. Mayer Co.
—Radio Shack Corp.
—Radio Wire Television Inc. of Mass.
Cambridge—Eastern Co.
Fitchburg—Young & Young of Fitchburg, Inc.
Holyoke—Springfield Radio Co.
Lawrence—Young & Young of Lawrence, Inc.
Littleton—Weston Electronic Sales Corp.
Lowell—Frank P. McCartin Co.
New Bedford—C. E. Beckman Co.
Springfield—Young & Young of Springfield, Inc.
—B. H. Spinney Co.
—Springfield Radio Co.
Webster—The Lonman Co.
Worcester—DeMambro Radio Supply Co.
—Radio Electronic Sales Co.

MICHIGAN

ANN ARBOR
Purchase Radio 605 Church 8696
*Wedemeyer Electronic 214 N 4 Ave 2-4457
BATTLE CREEK
*Electronic Supply 94 Hamblin 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 WD 3-2270



GROUND WIRE, TUBULAR AIR
FOAM AND OTHER FINE PROD-
UCTS. WRITE FOR BROCHURE

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

Des Roberts Elec 24 Mt Vernon St LY 5-0015

MEDFORD

Durrell Distr 222 Mystic Ave

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 H 153 Plainfield ST 4-8284
*Springfield Radio 405 Dwight ST 2-3411
Tarbell-Watters 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

Lonman 10 Ardlock Place

WORCESTER

*DeMambro Radio Supply 222 Summer St hdqrs 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

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 Distrs 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
 *Rissi Electronic 1112 W Warren TE 2-5611
 Westinghouse Electric 2211 W Kirby TY 8-9000
 *West Side Radio 8140 Mich LU 4-0120

ESCANABA

Felton Radio 1617 Ludington 2855

FERNDALE

Erickson's Electronic 23525 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

Bursma 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 Grava 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

*Fulton 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 Parts 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
 *Offenhauer Co 227 W Washtenaw 2-9896
 *Wedemeyer Electronic 800 Merrill St 5-7727
 Westinghouse Elec Supply 306 S Capitol St

LANSING

*Northwest Radio 435 Tamarack 797

MANISTEE

Gardner Radio 1653

MUSKEGON

Bell-LourIm 1839 Peck St 2-6019
 Bursma 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

PORT 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

*Northwest Radio 123 E 1 St 7-1565
 Popkey G M 206 E 1 St
 Staak Radio Supply 109 Lake Ave S
 Westinghouse Elec 230 Lake Ave S ME 2-2625

HOPKINS

Wolter Electronic Co 710 Ave N HO 3632 hqrs
 Fargo N Dak

MANKATO

Southern Minn Supply 2 & Main Sts. 4501

MINNEAPOLIS

*Baum Co 3033 Lyndale Ave S GI 1745
 *Bonn Co Lew 67 S 12 St FI 6351
 Ecklen Radio 114 N Lyndale Ave AT 0516
 *Electronic Center 107 3 Ave N LI 8678
 Forster Distr 1122 Harmon PI AT 5471
 General Electric 63 S 13 St BR 3266
 Graybar Electric 824 S 4 St GE 1621
 Hayer Co F C 250 3 Ave N MA 2501
 Larson Elec J H 114 Glenwood hqrs Hudson Wise
 National Electronics 1215 Nicolet BR 2185
 Northwest Radio 52 S 12 St FI 6346
 Radio Elec Supply 2451 Nicolet GE 7733
 Radio Maintenance 3016 1/2 27th Ave S DR 7546
 Reinhard Bros 11 S 9 St K GE 2681
 Roycraft Co 1625 Hennepin Ave GE 8881
 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 1 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 Kellogg Blvd
 CE 1994
 Westinghouse Electric 253 E 4 St GA 7441

WADENA

Central Co-op Wholesale hqrs Superior Wise



SYLVANIA
 Distributors
 IN MINNESOTA

Minneapolis—Northwest Radio & Elect. Supply Co.
 —Sterling Electric Co.
 —Stark Radio Supply Co.
 Rochester—Elliott & Hanson Radio & TV Supply Co.
 St. Paul—Stark Radio Supply Co.
 —Northwest Radio & Electronic Sup. Co.

MISSISSIPPI

BILOXI
 Nelson Radio Supply 613 Caillavet 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 Gesso PI 2-5041
 Graybar Elec 154 E Porter St JA 3-6316
 Industrial Supplies Highway 80
 Orgill 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 Elect 325 S Farish 4-8354

MERIDIAN

Grimm Radio Supply 2511 8 St 6174
 Radio Supply Co 909 24 Ave 8802
 Ryan Supply Co 814 21 N E



SYLVANIA
 Distributors
 IN MISSISSIPPI

Biloxi—Nelson Radio & Supply Co.
 Jackson—Cabell Electric Co.
 —Orgill Brothers Hardware Co.
 —Southern Distributors Inc.
 —Swan Distributing Co.
 Meridian—Radio Supply Co.

MISSOURI

BUTLER
 Henry Radio Co 211 N Main St 395

CAPE GIRARDEAU

General Electric 402 S Sprigg 805
 *Snedekum Electronic 902 S Sprigg 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

*Bursteln-Applebe 1012 McGee St BA 1155
 Columbian Elec 2603 Grand Ave GR 1001



HI-GAIN LO-LOSS
 NARROW OR WIDE SPACED
 OPEN LEAD-IN WIRE

Continental Electric 1321 W 13 GR 1180
 Electronics Supply 3536 Main St WE 3383
 Gaines & Co J G 1730 Grand BA 4-8888
 General Elec 2101 Broadway HA 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 1422 Grand Ave VI 9045
 RCA Victor Distr Corp 2113 Broadway HA 0300
 Radiolab 1612 Grand Ave HA 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
 *Ebling 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 4700
 Hollander & Co 3900 W Pine OL 3900
 *Interstate Supply 24 S 10 St CH 2325
 Napper Electronic Supply 6253 Natural Bridge Ave
 GO 8358
 Phone Craft Co 427 N Euclid RD 3147
 Radio Communications 1921 Olive CE 9754
 *Radonics 5040 Easton Ave RO 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 Flyer 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



SYLVANIA
 Distributors
 IN MISSOURI

Hannibal—York Radio & TV Corp. of Missouri
 Jefferson City—Central Missouri Distributing Co.
 Joplin—Four-State Radio & Supply Co.
 Kansas City—Radiolab
 St. Joseph—St. Joseph Radio & Supply Co.
 St. Louis—Ebling Radio & Supply
 —Napper Electronic Supply Co.
 —Napper Radio Co.
 —Van Sickle Radio Co.
 Springfield—Stout Radio Supply

MONTANA

BILLINGS
 American Appliances 2505 Montana St
 Central Distr Co P O Box 1551 8-8447
 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

Latus & Co DN 1531 Nat'l Ave 3182

MISSOULA

Northwest Distr 509 S Higgins 4311



SYLVANIA
 Distributors
 IN MONTANA

Billings—Electronic Supply Co.
 —Smith Supply Co.
 Butte—Smith Supply Co.
 Great Falls—George Lindgren & Co.
 —Radio Supply Div. C Q Radio
 —Smith Supply Co.
 Havre—O. B. Lund Co.

NEBRASKA

LINCOLN
 General Radio & TV 322 S 12 St 2-6000
 *Hicks Radio Co 1422 "0" St 2-7561
 *Leuck Radio Supply 243 S 11 St 2-2797
 Scott Electronic Supply 2201 O St



SYLVANIA
 Distributors
 IN MICHIGAN

Ann Arbor—Wedemeyer Electronic Supply Co.
 Benton Harbor—Radio & TV Dist. of Benton Harbor, Inc.
 Cheboygan—Stroitts Distributors, Inc.
 Detroit—Glendale Electronic Supply Co.
 —Hi-Park Distributors
 —Radio Electronic Supply Co.
 —Radio Specialties Co.
 —West Side Radio Supply
 Flint—Lifsey Distributing Co.
 —Shand Radio Specialties Co.
 Grand Rapids—Bursma Radio Supply Company
 —Radio Electronic Supply Co.
 —Warren Radio Co.
 Jackson—Fulton Radio Supply Co.
 Kalamazoo—Warren Radio Company
 Muskegon—Bursma Radio Supply Co.
 —Fitzpatrick Electric Supply Co.
 Muskegon Heights—Western Electronic Supply Co.
 Pontiac—Electronic Supply Co.
 Port Huron—Main TV Supply Co.
 Saginaw—Radio Parts Company

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 DU 2-6646

GENERAL RADIO & TELEVISION COMPANY



Wholesale Distributors for

- service parts and accessories
- television sets and supplies
- car radios
- home radios

Serving the trade in and around Lincoln with complete stocks of TV parts and accessories, and industrial electronic supplies.

For your needs call on

General Radio & Television Co.
322 South 12th Street
Lincoln, Nebraska
Phone 2-6000

NEBRASKA CITY
Arbor Radio TV Supply 921 Central 757

OMAHA
Alco Radio 4011 Cumins 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
JD Distr Co 1616 Cass St AT 5525
Noll Co H C 2226 Harney St
Omaha Appl 18 & St Mary's AT 3440
Radio Equip Co 2852 Douglas AT 7700
Sidos Co 502 S 19 St WE 8400
Westinghouse Elec 117 N 13 HA 8700

SCOTT'S BLUFF
Joseph Radio 1913 Broadway 109
Raber Supply 1305 1st Ave 700

YORK
Radio Supply 110 E 7 37



SYLVANIA Distributors IN NEBRASKA

Lincoln—Leuck Radio Supply
Omaha—J. B. Distributing Co.
—Radio Equipment Co.
Scottsbluff—Raber Supply Co.

NEVADA

LAS VEGAS
Electronic Supply 8 E Charleston
Metcalf's Radio 819 Ogden 5585
Saviors Elec Prod 101 E Charleston Bdgrs Reno

RENO
Osborne & Dermody 255 Chestnut St 2-6957
Saviors Elec Prod 640 Sierra St 2-9134



SYLVANIA Distributors IN NEVADA

Las Vegas—Metcalf Radio Supply Co.
—Saviors Electrical Products Corp.
Reno—Saviors Electrical Products Corp.

ELECTRICAL—ELECTRONIC TEST EQUIPMENT CHOICE OF THE EXPERTS

TECHNICIAN BUYERS DIRECTORY

NEW HAMPSHIRE

CONCORD
*Evans Radio 10 Hills Ave 1702

DOVER
*American Radio Corp 510 Central Ave 404

MANCHESTER
*DeMambro Radio Supply 1308 Elm St 4-4006
hqs 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



SYLVANIA Distributors IN NEW HAMPSHIRE

Dover—American Radio Corp.
Manchester—DeMambro Radio Supply Co.
—Radio Service Lab.

NEW JERSEY

ATLANTIC CITY
Almo Radio Co 4401 Ventnor Ave hqs Philadelphia Pa
*Kearns Inc Harrisburg & Atlantic AT 5-3233
M & H Sporting Goods hqs Philadelphia Pa
*Radio Elec Serv 452 N Albany Ave hqs Camden

BLOOMFIELD
Borger 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 hqs Philadelphia Pa
General Radio 600 Penn St W0 4-8393
Radio Elec Service 513 Cooper St W0 4-2830

NIDISCO

television, radio and electronic parts distributors—conveniently located at:

JERSEY CITY

713 Newark Avenue
JO 2-2360

TRENTON

126 S. Warren Street
EXport 3-4536

PASSAIC

294 Passaic Street
PRescott 9-4962

CLIFFSIDE

658 Anderson Avenue
CLiffside 6-0510

HACKENSACK

55 State Street
HUbbard 9-2000

Imperial
RADAR & WIRE CORP.

GROUND WIRE, TUBULAR AIR FOAM AND OTHER FINE PRODUCTS. WRITE FOR BROCHURE

CLIFFSIDE
Nidisco hqs 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 EI 3-6166

FARMINGDALE
Holmans Radio & TV Supply 85 Main St

HACKENSACK
American Distr 115 Hudson St hqs North Bergen
Nidisco hqs 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 Tonnele Ave JO 2-3620
*Hallmark Electric 592 Communipaw DE 2-9696
Nidisco 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 hqs 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 PI 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
Varley Electric 468 Broad MA 2-6760
Westinghouse Elec Supply 528 Ferry MI 2-3450

The House of...
QUALITY—SERVICE—ECONOMY

INTERNATIONAL DISTRIBUTING CO.

East Orange, N. J.

185 Central Avenue

ORange 5-1927

Wholesale Distributors
Exclusively

RADIO—TELEVISION—SOUND
ELECTRONIC PARTS AND EQUIPMENT

Including
NATIONAL UNION TUBES

Typical Lines:

Nat. Union	Merit	Sprague
J.F.D.	A.T.R.	Sylvania
Excellite	I.R.C.	South River
Claroastat	Utah	Kenwood
Burgess	G.E.	Altec
Littelfuse	Erie	DuMont
Newcomb	Shure	Drake Elec.
Stancor	Delco	Drake Mfg.
General Industries	Pilot	Federal
	Brush	Tel. & Radio

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 RB 6-3300

RIDGEFIELD PARK
 NRM Wholesale Radio 284 Teaneck Rd HU 7-0715

TEANECK
 Ross Homer M 367 Queen Anne Rd TE 6-5331

TRENTON
 Allen & Hurley 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
 Nidisco 126 S Warren St 3-4536
 Westinghouse Electric 745 E State TR 5-5421



SYLVANIA
 Distributors
 IN NEW JERSEY

Atlantic City—Almo Radio Co.
 —Radio Electric Service Co.
 Bloomfield—Jersey Electronic Distributing Co.
 Bridgeton—Joe's Radio Shop
 Camden—Radio Elec. Serv. Co. of Pa., Inc.
 Clifton—Eastern Radio Corp.
 Hackensack—American Distributing
 Jersey City—Hallmark Electronic Corp.
 Lyndhurst—Economy Electronics
 Morris Plains—Perk Electronics, Inc.
 Newark—Admiral Corp., Newark Dist. Div. Inc.
 —Continental Sales Co., Inc.
 —Federated Purchasers
 —Radio Wire Television, Inc.
 New Brunswick—Park Electronics, Inc.
 North Bergen—American Distributing
 Paterson—Jersey Electronic Dist. Co.
 Phillipsburg—Carl B. Williams Co.
 Plainfield—Union Television Parts Co.
 Red Bank—Monmouth Radio Supply Co.
 Trenton—Allied Electric Appliance Parts
 —Cooper Sales Co.
 —Dragon Co., Inc.

NEW MEXICO

ALBUQUERQUE
 General Electric 820 N 1 2-5246
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 *Federal Radio 188 State 2-2394
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 Faysan Distrs 506 7th St SU 1300
 General Electric 960 Bustl EL 5100
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 Graybar Electric 180 Perry WA 3700
 Haron 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
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 Graybar Electric 420 Lexington LE 2-4000
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 Gross Distrs 214 W 14th St WA 4-5900
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 Harrison Radio 225 Greenwich BA 7-7777
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 *Leonard Radio 69 Cortlandt CO 7-0315
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 *Powell Radio 142 W 169 CY 3-2623
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 *Sanford Elect 157 Chambers DI 9-0550
 *Slate & Co 2755 Webster LU 4-0614
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The March issue of **TECHNICIAN** carried an editorial page titled, "So Much for So Little," a tribute to the TV-Radio technician, presenting his case for fair-minded set owners.

At the bottom of the page was this inconspicuous notice.

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 Lima—Lima Radio Parts Co.
 —Warren Radio Co.
 Mansfield—Burroughs Radio Co.
 —Wholesaling Inc.
 Marion—Bell Radio Supply
 —Servex Distributing Co.
 Portsmouth—King & Irwin
 —Sound Electronic Suppliers
 Springfield—Standard Radio Supply Co.
 Toledo—Arnold's Equipment Co.
 —Selectronic Supplies, Inc.
 —Warren Radio Co.
 Washington Court House—Hutch & Son
 Youngstown—Ross Radio Co.
 Zanesville—Thompson Radio Supplies

OKLAHOMA

LAWTON
 *Radio Supply 2824 Fort Sill Blvd
 Reynolds Radio 909 1/2 C Ave 1292
McALISTER
 S E Oklahoma Radio Supply 325 W Jackson 1240
MUSKOGEE
 *Muskogee Electronic Supply 229 Court St 2-9651
OKLAHOMA CITY
 Admiral Distrs 1017 W Reno St
 Capitol Distr 1017 W Reno St
 Dulaney'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 3-9351
 Maxwell Co Leo 409 N Classen 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 6-1151
 Industrial Electronic Supply 1124 E 4 St
 Midwest Electronic 219 E 1 St 54-6129
 Oil Capitol Electronics 923 E 4 5-7214
 Patterson Radio 211 E 13 5-3179
 *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



SYLVANIA
 Distributors
 IN OKLAHOMA

Oklahoma City—Miller Jackson Co., Inc.
 —Radio Supply, Inc.
 Tulsa—Industrial Electronics Supply Co.
 —Radio, Inc.
 —Wholesale Radio Supply

OREGON

EUGENE
 *Carlson Hatten & Hay 96 E 10
 Gilbert Bros 424 Charnilton St Hdqrs Portland
 Graybar Electric 2180 6 Ave 4-2224
 United Radio Supply 712 W 6 Ave Hdqrs 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
 Harold's Radio Supply 320 SW Court Ave 1956

PORTLAND
 Appliance Whole 600 N W 14 AT 6584
 *Central Distrs 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
 H & 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
 Saelens Radio 1605 N W Everett BE 2423
 *Stubbs Electric 33 N W Park Ave BR 5404
 Television & Radio 720 SE Alder EA 1104
 *Tracey & Co N W 10 & Gilsan 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

TECHNICIAN BUYERS DIRECTORY

JOHNSTOWN
 *Baker Radio Electric 111 John St
 *Cambria Equip 17 Johns 6-1291
 Diek's Automotive 633 Napoleon St
 General Electric 80 Hickory 2-1225
 TV & Radio Parts 325 Bedford St 9-1458
 Westinghouse Electric 75 Hickory St 8-1293

LANCASTER
 Barbey Co G D 822 Columbia Ave 4-0558
 Eshehman Supply 110 N Water B183
 York Radio 519 W King St 4-2669

LEBANON
 Barbey Co Geo D hqrs Reading

McKEESPORT
 *Barno Radio 321 6 Ave
 McKeesport Electronics 1661 5th 8-5111

MONESSEN
 Mon Valley Electric 456 Schoonmaker Ave 1233

NANTICOKE
 Modern Electronics 102 S Market 583

NEW BRIGHTON
 Television Parts Co 509 5 Ave 5085

NEW CASTLE
 Midwestern Elec 235 W Grant OL 4-9961
 Reliable Radio & TV 1015 S Mill OL 4-9233

NEW KENSINGTON
 Beaser Electric 1017 5 Ave ED 5-5801

NORRISTOWN
 Kratz Bros Kohn & Oak

OIL CITY
 Barron's Radio hqrs Butler

PHILADELPHIA
 *A C 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 Judson C 31 & 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
 Letriconic Research Lab 715 Arch MA 7-6771
 *M & H Sporting Goods 722 Market LO 7-2587

Nadisco 3960 N 16 BA 6-2020
 Nember H K 1539 Race St LO 7-2125
 Pelree-Phelps 2000 N 59th St GR 7-9000
 *Penn 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
 Ramsey Electric 1007 Arch St MA 7-6900
 *Steinberg & Co 2520 N Broad BA 3-9400
 Westinghouse Electric 141 N 11 St WA 2-8950
 *Wille 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
 Keps 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 Norwegian 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
 *B & 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 & Refr 1013 Capouse Ave DI 7-5033
 Morris Distr 616 Mulberry St
 Parsell Fred P 1221 N Washington Ave
 Scott Charles B 119 Franklin Ave 2-8221
 *Scranton Radio/TV Supply 419 Poplar St DI 3-1259



SYLVANIA

Distributors
IN OREGON

Eugene—Carlson Hatton & Hay, Inc.
 —United Radio Supply Inc.
 Klamath Falls—R. F. Supply
 Medford—Verl G. Walker Co.
 Portland—Central Distributors
 —F. B. Connelly Co.
 —Northwest Radio Supply Co., Inc.
 —Stubbs Electric Co.
 —United Radio Supply, Inc.

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 Tilghman St 4-6235
 Peters A A 231 N 7 St HE 4-9361
 Radio Electric Service 1042 Hamilton hqrs Philadelphia
 Steedle Norman D 1005 N 19 HE 5-5441
 Westinghouse Elect 745 Union Blvd HE 4-5105

ALTOONA
 Altoona TV Supply 1713 Union Ave 4-0827
 General Electronics hqrs Wheeling W Va
 *Hollenback'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

DREXEL 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 OG 5103

ERIE
 B & D Whole Distr 502 E 10 St
 *Duncombe Co J V 1011 W 8 St 2-6125
 General Electric 824 E 9 HE 3-5206
 *Jordan Electronics Co 1130 German St 2-2462
 *Warren Radio 12 & State 4-5285
 Westinghouse Elec 1820 State 4-8191
 Young Brothers 1909 Peach St 45-297

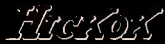
GETTYSBURG
 Hartley & Co hqrs Stanton Va

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
 Corville Electric 39 S Vine 1296
 Moyer Electronic 758 N Locust

INDIANA
 Superior Distr 334 Philadelphia St



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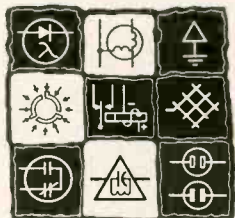
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Graphical Symbols for Electronic Diagrams

First publication of a pictorial summary of the new standards showing symbols of special interest to radio-TV-electronic technicians. These symbols will shortly be used in all circuit schematics by the electronic industries.

Preprints of symbols will be available to all servicemen in "wall chart size" (17" x 22"), @ 15¢ each.

TECHNICIAN & Circuit Digests

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 5 Haas Ave

UNIONTOWN
Radio Parts 1 Mill St hqrs Pittsburgh
Superior Distr 25 Dunbar St
*Zimmerman Wholesalers hqrs Hagerston 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 Dists 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 R S Distr 646 W Market 4-3217
Minnich Radio & Sound 624 W Market St
Mottler Electric 815 N George St
Westinghouse Elec Ogantz St & 6 Ave W0 5556
*York Radio & Refrig 263 W Market St 8-1588

Horiashar & Barrett 1909 Main
Krell 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

FLORENCE
Dixie Radio Supply 234 E Evans 8201
*Florence Radio 223 E Cheves St 4243

GREENVILLE
Carolina Radio 225 W Wash 2-6740
*Dixie Radio Supply hqrs Columbia
Gilliam Radio 802 Buncombe St 5-0438
Westinghouse Electric 205 Airport Rd 3-6201

SPARTANBURG
McElhenney Co 481 Union St 6300

Arco Inc.
The Versatile Family of TV Antennas

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



SYLVANIA
Distributors
IN TENNESSEE

Bristol—Clark Radio Supply
—Interstate Hardware Co., Inc.
—Roden Electrical Supply Co.
Chattanooga—Curlie Radio Supply Co.
—Specialty Distributing Co.
Jackson—Carlton Wholesale Radio Co.
—L. K. Rush Co.
Knoxville—Chemcity Radio & Electric Co.
—Roden Electrical Supply Co.
Memphis—Bluff City Distributing Co.
—Lavender Radio Supply Co.
—Orgill Brothers & Co.
Nashville—Braid Electric Co.
—Electro Distributing Co.
—Randolph & Cole, Inc.

SYLVANIA
Distributors
IN SOUTH CAROLINA

Charleston—Wholesale Radio Supply Co.
Columbia—Associated Distributing Co.
—Dixie Radio Supply Co.
—McElhenney Co., Inc.
Greenville—Carolina Radio Supply Co.
—Dixie Radio Supply Co.
Spartanburg—McElhenney Radio Supply House

SOUTH DAKOTA

ABERDEEN
Burghardt Radio Supply 102 S 2nd St 2469
Graybar Electric 224 1 Ave S E AB 2974

SIOUX FALLS
Graff Motor Supply 122 W 7 St 4-6911
Lippert L C 221 S 1 Ave 4-4001
*Power City Radio 209 S 1 Ave 4-4077
*Warren Radio Supply 105 S Indiana Ave 8-6051

WATERTOWN
*Burghardt Radio Supply

YANKTON
Electrical Trade Supply 514 Maple

SYLVANIA
Distributors
IN SOUTH DAKOTA

Aberdeen—Burghardt Radio Supply
Sioux Falls—Warren Radio Supply
Watertown—Burghardt Radio Supply

Imperial
RADAR & WIRE CORP.

GROUND WIRE, TUBULAR AIR
FOAM AND OTHER FINE PRO-
DUCTS. WRITE FOR BROCHURE

TENNESSEE

BRISTOL
Clark Radio Supply 11 5th St S0 3301
Graybar Electric 536 Anderson St S0 4415
Interstate Hardware & Supply 200 State
Roden Electrical Supply hqrs Knoxville

CHATTANOOGA
Bryant & Trimble 100 Market St 6-2703
Curlie Radio Supply 439 Broad St 6-4729
General Electric 112 W 13 St 5-4571
Graybar Electric 1222 Carter St CH 6-5624
Radio & Appliance Distr 323 W Main St 7-6541
Radio Sales 401 Broad St 7-9578
Specialty Distributing hqrs Atlanta Ga
Standard Appliances 618 Broad St

JACKSON
Carlton Wholesale Radio 312 S Shannon 7-0816
*L K Rush Box 1418 2-4731

JOHNSON CITY
General Elec Supply 425 W Walnut St 3117

KINGSPORT
Chemcity Radio & Elec hqrs Knoxville
Radio Electric Supply 245 E Market St CI 5-1471

KNOXVILLE
Bomar Appliance 520 Western 2-1181
*Chemcity Radio 12 Emory Park 4-3641
General Electric 701 W Jackson Ave 3117
Graybar Elect Henley & Union 3-6171
Hahn Electronic Supply 350 E Scott St
McClung C M 501 W Jackson Ave 2-1161
*Roden Electrical 808 N Central 3-0491
Westinghouse Electric 403 E 5 Ave 4-8644

MEMPHIS
*Bluff City Distr 234 East St 36-4501
Boyd Electronic Supply 1153 Union Ave 2-5565
Fulmer Co Arthur 296 Monroe Ave 5-5711
General Electric 500 S Front St 37-5531
Graybar Electric 484 S Front 37-3421
*Lavender Radio Supply 180 S Casper 36-2757
McGregor's 1071 Union Ave 36-3301
Mills-Morris 171 S Dudley 36-3351
Orgill Bros 2100 Latham St 9-3381
Shobe Inc 1195 Union Ave 32-3411
Uffer Co Frank G 1318 Madison Ave 36-4555
Westinghouse Elect 845 N Main 37-9431
Woodson & Bozeman 733 S Somerville 32-2445
W & W Distr 639 Madison 37-4628

NASHVILLE
Braid Elec 1100 Demonbreun 42-6511
Currey's 1600 McGavock St 4-0553
Electra Distr 1914 West End Ave 5-7741
General Elect 90 Peabody 5-6331

SYLVANIA
Distributors
IN PENNSYLVANIA

Allentown—Radio Elec. Serv. Co. of Penna., Inc.
Altoona—Hollenback Radio Supply
Beaver Falls—Reliable Motor Parts Co.
Bethlehem—Buss Radio Electric Supply
Butler—Barron's Radio Supply
Easton—Radio Elec. Serv. Co. of Penna., Inc.
Erie—J. V. Duncombe Co.
Harrisburg—Excelsior Radio Co.
—Radio Distributing Co.
Hazelton—Moyer Electronic Supply Co.
Johnstown—Baker Radio Electric
Lancaster—George D. Barbey Co.
McKeesport—McKeesport Radio Supply
Monessen—Mon-Valley Electronics, Inc.
New Castle—Reliable Radio & TV Supply
Oil City—Barron's Radio Supply
Philadelphia—Allied Electric Appliance Parts
—Almo Radio Co.
—Emerson Radio of Pa.
—Motorola-Philadelphia Co.
—Peirce-Phelps, Inc.
—Radio Elec. Serv. Co. of Penna., Inc.
—Albert Steinberg & Co.
Pittsburgh—Cameradio Co.
—M. V. Mansfield Co.
—The John Marshall Co.
—C. R. Rogers Corp.
—South Hills Electronic Supply
Pottstown—George D. Barbey Co., Inc.
Pottsville—Moyer Electronic Supply Co.
Reading—George D. Barbey Co.
Rocheater—Reliable Radio & TV Supply
St. Mary's—B & R Electric Co.
Scranton—Fred P. Pursell Co.
Sunbury—Big Boys Auto Parts Co.
—Moyer Electronic Supply Co.
Uniontown—Zimmerman Wholesalers
Wilkes-Barre—Radio Service Co.
—R. B. Wall
Williamsport—Williamsport Radio Supply
York—J. R. S. Distributors

RHODE ISLAND

CRANSTON
Rimaco Sales 218½ Warren Ave East Prov 1-5213

PROVIDENCE
Adams Distr 116 Broadway
Dandreta & Co Wm 129 Regent Ave UN 1-2800
*DeMambro 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 194 Richmond DE 1-8100
Television Access House 41 Broadway JA 1-7515
Westinghouse Elec 233 Harris GA 1-6484

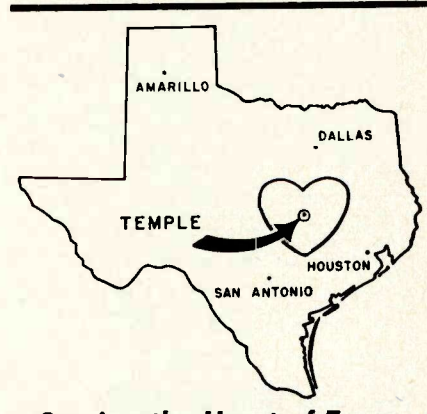
SYLVANIA
Distributors
IN RHODE ISLAND

Providence—Adams Dist. Inc. of Rhode Island
—William Dandreta & Co.
—DeMambro Radio Supply Co.
—W. H. Edwards Co.

SOUTH CAROLINA

CHARLESTON
Butt's Elec Supply 480 E Bay St 2-4085
Radio Labs 215 King St 3-5328
Wholesale Radio 78½ Calhoun St

COLUMBIA
Associated Distr 822 Gervais St
*Dixie Radio Supply 1700 Laurel 4-0983
Electronics Inc 1513 Taylor St
Graybar Electric 710 Lady St C0 2-2125



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 Hall Inc RC & LF Hqrs Houston
 *Montague Radio 760 Laurel 4-5697
 Reed Co 200 Fannin St 4-7431
 Sterling Radio 1025 4 St 4-7503 hqrs Houston
 Westinghouse Electric 265 Cypress 4-8635

BIG SPRING

Pioneer Electronic Supply 1206 E 3 3454

BROWNSVILLE

Electronic Equip & Eng'g 12 & Madison 2-4222
 Hqrs Corpus Christi

CORPUS CHRISTI

*Electronic Equip 805 S Staples 3-9271
 General Electric 1134 Port St 2-9237
 Graybar Electric 1311 Amos 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 Leslie 3-8122
 Medaris Co 1202 Drago N St PR 4841
 *Ra-Tel 2409 Ross Ave PR 8689
 *Southern Radio 3004 Ross Ave VI 6396
 Southwestern Co 1202 Dragon 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
 Momen-Dunnegan-Ryan 800 E Overland 3-1621
 Reeves Radio Supply 720 N Stanton 3-5752
 Sunland Supply 1200 E Missouri 3-7400
 Walz 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
 **"Scooter's" Radio 509 Commerce St FO 7448
 Shields Co 1008 Macon St FA 3111
 *Sutton's Electronics 104 S Main St
 Swleo Co 1518 E Lancaster ED 5029
 United Electronic 403 Jones ED 9295
 Westinghouse Elec 205 NE 7 FO 5611

HOUSTON

Automatic Distr 100 Jackson CA 0261
 Beyer & Co A R 1318 Polk Ave AT 7491
 Basacker Electric 1721 Waugh Dr JU 5546
 Covington Distr 34 N Hamilton CA 0326
 Crampacker Distr 1200 National CH 9366
 Franklin Co R E 1905 Chartes St CA 0194
 General Electric 1312 Live Oak FA 3121
 Graybar Elect 1702 Cullen AT 4571
 Gulf Coast Electronic 1110 Wilbern 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
 Lenert Co 2213 Congress Ave CH 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
 Straus-Frank 4000 Leeland CA 1201
 Tele-Radio 1721 Waugh Dr JA 9777
 Walsh & Co J A 4301 Gulf Freeway CE 9481
 Westinghouse Elect 1903 Ruiz CA 7272

LAREDO

Guarantee Radio 1314 Iturbide St 3-6913
 Pan American Electronic 1015 Iturbide St 3-6242
 Radio & Electronics Supply 1219 Lincoln St

LONGVIEW

Wholesale Electronic 203 S High St

LUBBOCK

Anderson-Young 2002 Clovis Rd 5-8581
 General Electric 1312 1/2 Ave J 3-8271
 *R & R Supply 1607 Ave G 5-5737
 Westinghouse Electric 605 Main St 3-0425
 West Texas Radio Supply 1009 Ave Hqrs Amarillo

LUFKIN

Radio Parts Co 1010 N Raguet

MCALLEN

*Rio Radio Supply 608 S Broadway 6-5781

ODESSA

Midland Specialty 2101 Andrews Hwy

PORT ARTHUR

Dishl 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 7385
 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
 Olsen Radio Supply 412 Peridale 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
 Straus-Frank Box 600 FA 0101



Warneke 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 Bway 2-1673
 Lavender Radio Supply 503 E Oakwood St
 Radio Service 111 University 4-4441

WACO
 General Elec 217 S 4 St 2-1611
 *Hargis Co 1205 Washington Ave hqrs Austin
 L & M Sales 1307 Austin Ave 2-3391

WICHITA FALLS
 *Clark & Gose Radio 1203 Indiana St
 *Mooney Radio 1635 Huff 2-7505

Abilene—R & R Electronics Co.
 Amarillo—R & R Electronics Co.
 Austin—The Hargis Co.
 —Headquarters
 Beaumont—Montague Radio Distributing Co.
 —Sterling Radio of Beaumont, Inc.
 Corpus Christi—Electronic Equipment & Engineering Co.
 Dallas—All-State Distributing Co.
 —Dallas Electric Supply Co.
 —Industrial Electronic Supply Co.
 —Southern Radio Supply Co.
 —Wholesale Electronic Supply Co.
 —Wilkinson Brothers
 El Paso—Electrical & Mechanical Supply Co.
 —Midland Specialty Co.
 Fort Worth—Fort Worth Radio Supply Co.
 —H & L Radio Supply Co.
 —Bill Sutton's Wholesale Electronics
 —United Electronic Supply Co.
 Houston—A. R. Beyer & Co.
 —Harrison Equipment Co.
 —Lenert Co.
 —Moore Bros. Distributing Co.
 —Sterling Radio Products Co.
 —Straus Frank Co.
 Laredo—Guarantee Radio Supply Co.
 Longview—Wholesale Electronic Supply of Longview
 Lubbock—R & R Supply Co., Inc.
 San Antonio—Mission Radio Inc.
 —Modern Radio Supply, Inc.
 —Radio & TV Parts Co.
 —R. Warneke Co.
 Texarkana—Lavender Radio Supply Co.
 Tyler—Lavender Radio Supply Co.
 Waco—The Hargis Co. Inc.
 —L & M Sales Co.
 Wichita Falls—Mooney Radionic Supply Co.

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 St 5-0671
 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
 Lloyed Co W B 51 S 2nd W 3-3825
 Moore Radio Supply 157 Motor Ave
 O'Loughlin's Radio Supply 113 E 3 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
 Stravell-Paterson 126 S W Temple 4-6461
 Westinghouse Elect 210 Rio Grande 5-2972

Salt Lake City—Kimball Distributing Co.
 —Standard Supply Co.

VERMONT
 General Electric 316 Pine St 3-3424
 Hagar 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

Burlington—Hagar Hardware & Paint Co.

VIRGINIA

ALEXANDRIA
 Certified Radio 1330 Powhatan St KI 8-5115
 Suburban Distr 222 S Henry St KI 9-6804

ARLINGTON
 Rucker Radio Wholesalers 1906 N Moore St hqrs
 Washington DC

BRISTOL
 Bristol Radio 311 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 5 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 hqrs 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
 *Johnston-Gasser Co 3023 W Marshall 6-9405
 Mattson's Inc 519 W Broad St 3-6011
 Meridan Electronic 608 W Broad 3-3450
 *Radio Supply 3302 W Broad St 6-3831
 Richmond Office Supply 816 E Main St 7-3054
 Tiller, Inc A R 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 Center Ave N W 3-9339
 *Radio Supply 2009 Williamson Rd 6289
 Roanoke Electronic 1322 Williamson 6612
 Wyatt-Cornick 605 3 St S E hqrs Richmond
 Westinghouse Electric 732 I St SE 7771

STAUNTON
 Hartley & Co 327 N Central 5-2333
 Radio Electric Products 114 N Central
 Southern Electric 818 Greenville Ave 5-2313

Danville—Womack Electric & Supply Co.
 Lynchburg—Eastern Electric Co.
 Norfolk—Goodman Electric Supply Co.
 —Radio Parts Distributing Co.
 —Radio Supply Corp.
 —R. F. Trant Distributing Corp.
 Petersburg—Virginia Battery & Ignition Co.
 Richmond—Commonwealth Sales Corp.
 —Duval Distributing Corp.
 —Mattson's Inc.
 —Radio Supply Co.
 Roanoke—Leonard Electronic Supply Co.
 —Radio Supply Co., Inc.
 Staunton—Southern Electric Co.
 Winchester—Leonard Electronics of Winchester Inc.

WASHINGTON

BELLINGHAM
 Waitkus 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 hqrs 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
 Connelly 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
 Stusser 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
 Connelly 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 Trent 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 8 St 4-2671

WALLA WALLA

Kar Radio & Electric 12 & Pine Sts 4572

WENATCHEE

Mid-State Radio 611 1/2 N Wenatchee Ave 510
 Pringle Radio 417 King St

YAKIMA

Lay & Nord 112 S 2 St 3-5591
 Westinghouse Elec 210 W B YA 3-4701
 Yakima Wholesale Radio 506 S 1st 4670

**SYLVANIA
Distributors
IN WASHINGTON**

Bellingham—Woitkus Supply Co.
 Bremerton—C & G Radio Supply Co.
 Everett—Pringle Radio & Electric Co.
 Seattle—Associated Industries
 —Coast Radio Co.
 —F. B. Connelly Co.
 —Garretson Radio Supply Co.
 —General Radio Inc.
 —Radio Products Sales
 —Seattle Radio Supply
 —Strusser Electric Co.
 —Marshall Wells Co.
 —Herb E. Zobrist Co.
 Spokane—Columbia Electric & Mfg. Co.
 —F. B. Connelly Co.
 —Standard Sales Co.
 Tacoma—C & G Radio Supply Co.
 Walla Walla—Kar Radio & Electric Co.
 Wenatchee—Pringle Radio Wholesale
 Yakima—Lay & Nord

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
 Eskew Smith & Cannon 802 Brooks St
 Hicks Radio Supply 10 Virginia St 3-5583
 Mountain Electronics 708 Bigley 39-582
 Virginian Electric Michigan Ave 60-631

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 Eoff St 3980
 Wheeling Radio Supply 924 Market St Wh 1077

**SYLVANIA
Distributors
IN WEST VIRGINIA**

Beckley—Chemcity Radio & Electric Co.
 Charleston—Chemcity Radio & Electric Co.
 Clarksburg—Trenton Radio Co.
 Elkins—M & M TV & Radio Co.
 Huntington—King & Irwin Inc.
 Morgantown—Trenton Radio Co.
 Parkersburg—Randle & Hornbrook
 Wheeling—Wheeling Radio Supply



Domestic Galvanized Guy Wire
 Manufactured in
 18, 19, 20, 21 Gauges
 Finest Quality—Lowest Prices

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

EU 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

Popkey Co G M Main & 9 Sts

MILWAUKEE

Ackermann Radio 3176 N 27 St HI 5-1860
 *Ame 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-Pinnacle 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
 *Marsh Radio Supply 838 N 4 St DA 8-1320
 Mid-City Electronic 2327 W Wells WE 3-8304
 Pritzaif John Hdw 333 N Plankinton Ave BR 1-1965
 *Radio Parts Co 538 W State MA 8-4048
 Radio Specialty 829 N Bway MA 8-2060

Fretco Inc.
The Versatile Family of TV Antennas

Roth Appl 647 W Virginia BR 1-1111
 Seemuth Distr 2406 W Lisbon St DI 2-9240
 Sievert 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
 Nitze's 1129 N 8 St 9351

STEVENS POINT

AMCO Electronics N 2nd & Franklin 3351

WAUSAU

*Radio Service & Supply 615 3 St 3272

**SYLVANIA
Distributors
IN WISCONSIN**

Appleton—Appleton Radio Supply Co.
 Madison—Satterfield Electronic Supply Inc.
 Marinette—G. M. Popkey Co.
 Milwaukee—Ackermann Radio Sales
 —Central Radio Parts Co.
 —Radio Parts Co., Inc.
 —Stolz-Wicks Inc.
 Racine—Superior Radio Parts

WYOMING**CASPER**

Casper Supply 444 S Center St
 General Electric 428 S Elm St 5926

CHEYENNE

*Hauge Radio & Supply 4012 Central

**SYLVANIA
Distributors
IN WYOMING**

Cheyenne—Hauge Radio & Supply Co.

**SYLVANIA
Distributors
IN HAWAII**

Honolulu—Precision Radio Co.

**SYLVANIA
Distributors
IN ALASKA**

Anchorage—Yukon Radio Supply Inc.



Domestic Galvanized Guy Wire
 Manufactured in
 18, 19, 20, 21 Gauges
 Finest Quality—Lowest Prices

Parts Storage in Dampness

Keeping parts in damp climates can be quite a problem. Often a new part, taken out of stock is either found defective right then and there or—even worse—breaks down in the customer's home in a few days. This trouble has been experienced with all types of paper, mica, and molded capacitors, with coils of every description, and even with 10-watt wire-wound resistors. Lick the problem by keeping your entire stock of small parts in several dozen individual preserving jars. Screwing the covers on tightly provides an effective seal. A refinement is to put a small piece of charcoal in each jar. The charcoal effectively absorbs any moisture that manages to get into the jars.—B. O. Riis, Little River, Miami, Florida.

TECHNICIAN BUYERS DIRECTORY of

Representatives ("Reps")

This section of the 1954 Technician Buyers 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.

PHOENIX

Moore Sales Co Harry A Box 7245 AM 5-4662
Sheffer Co H George Box 1587 AL 8-7893

ARIZONA

Appleton Co Harry 136 San Fernando CA 1-2171
Barron-Jarco 817 S Hoover St DU 3-5248
Barstow & Doran 1406 S Grand Ave RI 6191
Baughman Co E J 350 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
*Coehrane 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
Dunkle 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
Hardie 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 Y0 6271
La Moree G D 1325 San Julian RI 6378
*Lasore Co Harry A 9041 W Pico Blvd CR 6-4185
*Lokota Co Douglas H 1052 W 6 St MA 6-4505
Lynd & 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) RY 1-8345
*Marshank Sales 672 S Lafayette Pk DU 7-8235
Maynard Sales Co 6214 W Manchester OR 8-3150
*Miller Co Gerald B 1550 N Highland (Hollywood) HD 9-6305
Mitchell Co C H 256 S LaPeer Dr Beverly Hills CR 1-8382
*Neely Enterprises 7422 Melrose Ave WE 3-9201
*Olander & Co Roland 7225 Beverly Blvd WY 0028
*Orborne R E 1044 S Park View DU 8-1039
*Owens Co Lee H 2331 W Washington RE 0230
Perlmuth-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
*Rissi Al J 2724 S Peck Rd (Monrovia) DB 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 Vincente Blvd. WE 1-8901
*Selgel Co Samuel 1145 S LaCienega Blvd BR 2-4183
Stevens Edward S 5171 Hollywood Blvd NO 2-1105
Smedley A B Box 67-C (Pasadena) SY 8-1174
Saltzer 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
*Strasser Co Conrad R 1865 N Western Ave HO 7-7086
Tivy George S 1148 S Grand Ave RI 7-7553
*Tubergen Co John B 2232 W 11 St DU 9-3173
Van Groos Co 14515 Dickens St (Sherman Oaks) ST 7-7882
*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

CALIFORNIA

Harris Sales Co L H 383 Brannan St YU 6-1084
Held Herman E 147 10 St UN 3-4250
*Hermans 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 OR 3-2173
*Meyer & Ross 1355 Market St KL 2-2311
*Moulthrop & 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 & Radat 381 Brannan St YU 2-2982
*Nott & Co L A 1061 Howard St HE 1-4738
*Purdy 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

HARRIS SALES CO L H 383 BRANNAN ST YU 6-1084
HELD HERMAN E 147 10 ST UN 3-4250
*HERMANS 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
KITTELSON 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 OR 3-2173
*MEYER & ROSS 1355 MARKET ST KL 2-2311
*MOULTHROP & 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 & RADAT 381 BRANNAN ST YU 2-2982
*NOTT & CO L A 1061 HOWARD ST HE 1-4738
*PURDY 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
Golfher 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 Gall 2576 S Milwaukee St PE 2650
*Hyde Co Dick 3250 S Dexter SK 6-7151
*McLoud & Raymond 5528 E Colfax FR 3067
*Muefler Mark G 1644 Blake St AC 3515
*Nelson Co A J Box 5502 KE 6751
O'Brien Sales A J Box 1681 BE 3-4845
*Pearson & Co Mel 1011 S Josephine St SP 7-7878
*Williams Co Allen I 1009 17 St MA 0343
COLORADO SPRINGS
*Peysor W J 1501 N Weber 4-3401
GREELEY
*Moss Gordon G 2530 13 Ave 770

CONNECTICUT

ANDOVER
*Seyd Ernest K Long Hill Rd (Coventry) Pilgrim 2-6604
BRANFORD
Steel Assoc Joseph R 41 W Main St
BRIDGEPORT
Reynolds Co Harrison 211 State St BR 5-9634
CANAAH
*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 HO 7-5864
HARTFORD
*Gibson Engineering Co 119 Ann St CH 7-6919
Hutton & Co Arthur T 955 Asylum Ave 5-2159
*Kahn Assoc Irving 541 Windsor St 46-7431
MANCHESTER
*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
Hasso Sales 880 Elm St UN 5-2806
RIDGEFIELD
*Hostis Assoc Walter C Box 52 6-7477
WEST HARTFORD
*Pattlerge & Co R S 62 La Salle Rd HA 3-5804
WESTPORT
Nief Assoc P W 15 Oak St CA 7-3834

DISTRICT OF COLUMBIA

WASHINGTON
Fields Associates 422 Wash Bldg ST 3-3480
Henry & Co 3741 Joelynn St NW KE 7-1448
Jodon Franel 2902 Porter St NW WO 6-2615
Massey Associates 1 Thomas Circle NW NA 8-1957
Rich Industries 1025 Connecticut Ave ST 5141

FLORIDA

FORT MYERS
Lynch Arthur H & Assoc Box 466 5-6762
JACKSONVILLE
*Coto 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
Hasemeier Warren L 128 Gulf Dr RI 6-5001
TAMPA
Minthorn Co Leonard L 409 E Cass St 2-8631

Pretco Inc.

The Versatile Family of TV Antennas

*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 PI NE VE 3053
*Burwell Co Henry W 1125 Ponce de Leon Ave NE AT 2127
*Cartwright & Bean 4030 Club Dr NE CH 2483
*Duckett Sales Co Grady 1145 Peachtree St NE AT 6916
Erickson Co Herb PO Box 7036 Sta C AT 8266
*Fassett & Son F 777 Pinehurst Ter SW RA 3104
Glenn & Larson 172 Simpson St NW WA 4906
Hart Engry & Sales Co 132 Walker St SW AL 9854
*Hollingsworth & Still 407 Whitehead Bldg MA 5878
*Joiner 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
*Nickerson F C 901 Bernina Ave NE
Rogers & Assoc C B 1000 Peachtree St NE EL 1733
*Smith Co Maltland 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 Avls 307 Church St CR 6167

ILLINOIS

CHICAGO AREA
American Mfrs Agency 208 N Wells St RA 6-6311
*Arnold-Vore Assoc 1321 Rosedale Ave ED 4-6457
*Beebe Assoc 1155 Waukegan Rd (Glenview) CO 7-2292
*Beier Co Leroy W 6518 W North Ave BE 7-2420
Berggren & Assoc 2015 S Michigan Ave CA 5-1450
Bonke Sales Co WFE 6966 W North Ave WE 7-8433
*Booth Claude R 400 W North Ave CA 7-2810
*Borgoyne Wm E 7001 N Clark St
*Galva 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
*Cote Co G McL 4753 N Broadway LO 1-7611
Cozzens W B 220 Kedzie St (Evanston) DA 8-4800
*Crossley & Assoc 4501 N Ravenswood UP 8-1141
*Cunningham & Assoc Bruce 228 N LaSalle AN 3-5837
Cushing Co L G 605 N Michigan Ave DE 7-6456
*Diathert Co Russ 2030 W Montrose St LO 1-6831
*Dolin Sales D 1200 N Ashland Ave BR 8-1515
Doyle Co W J 333 N Michigan Ave FR 2-7100
*Ellinger Sales Co 6571 N Olmsted Ave RO 3-4154
Ellis Co Arthur J 1607 Howard St AM 2-2708
*Engle Co Karl D 4724 N Sheridan Rd UP 8-6363
Eshner Co 9 S Clinton St CE 6-1533
Everett Associates 6744 N California AM 2-3702
*Felleisen & Assoc 5839 W Montrose Ave
Fistel Harry 1838 S Halsted St SE 3-3076
Gaskins T 1005 S Aurora Ave (Wheaton)
*Gassner & Clark Co 6349 N Clark St RO 4-6121
*Gebhard Co Harry W 5129 W Devon Ave RO 3-3636
*Gianaras Sales Co 2345 W DeVon Ave AM 2-2100
*Goffen Co Jerry 2750 W North EV 4-5959
Granat Gary 330 S Franklin St WE 9-4595
*Green & Assoc L F 4949 W Diversey Ave WA 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
Heffer & Assoc E G 612 N Michigan DE 7-1160
*Higgins Co Royal J 10105 S Western Ave CE 3-7388
*Hilli-Gray 41 1/2 Harrison St (Oak Park) ES 8-7050
*Hiltcheck Ray 1754 W Madison
Horlacher Sales WA 7070 N Clark St RO 4-9487
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*Spellman 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
*Sussman & Co Jules 130 Lafayette St WD 2-7766
*Taylor Co B B 241 Sunrise Highway (Rockville Ctr) RO 6-1014
*Tobias & Co D F 30 Church St CO 7-4350
Triplett Electrical Instrument Co New York 7 Phone COrrland 7-4350
J-B-T Instruments Inc
Shurite Meters
Schauer Manufacturing Corp
Campbell Industries Inc
Columbia Resistors Inc
Territory covered New York and New Jersey
Turney & Beale Bank of Manhattan Bldg (Bayside) 4-4000
Verter Sales Co 1195 Sherman Ave CY 3-0211
Weber Assoc Jack Lake & Main Sts (Tuckahoe) 3-0893
Welland G. H. 77-43 166 St (Flushing) OL 8-4061
*Wells & Associates W W 509 5 Ave MU 2-8945
Wineblatt Sales Co E 10 Flske Pl (Mt Vernon) 4-9216
*Wolfe Michael 136-52 71 Rd (Flushing) BO 3-1400
*Woolf 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 Hutehinson 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
Beedle 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
Laino Co W C 3253 Lambert Pl EA 1435
Wahl Co A C 416 W Benson St VA 3270
CLEVELAND AREA
Ambos Jones Co 1085 The Arcade CH 1-7470
*Baehr Albert M 11621 Detroit Ave LA 1-8468
*Baler & Co Arthur H 2138 Lee Rd FA 1-5644
*Brauer & Assoc Walter J 15631 Lakewood Hts Blvd LA 1-7268
Dannemiller Assoc J R 1791 Oakmont St EV 1-5100
*Daugherty Co F A 1120 Croyden Rd HI 2-3311
*Diehrich Co Earl S 320 Hanna Bldg CH 1-7770
*Dolfuss Jr Chas H 2108 Payne Ave PR 1-0719
*Edwards-Lohse & Co 2123 E 9 St TO 1-5753
Elliot Co Howard C 3412 E 147 St WA 1-4206
Harrington-Flshel Co Engineers Bldg SU 1-6612
Sales Engineers
Engineers Building—Superior 1-6612
Representing
Burdy Engineering Co Inc
S & C Electric Company
G & W Electric Specialty Co
Moloney Electric Co
Penn Electrical Co
General Devices & Fittings Co
Kelems Co
Flexo Steel Products Co.

Henger-Fairfield Co 1812 Columbus Rd CH 1-1018
Herrick Co G L 15326 Lorain St WI 1-4406
Hoskins Nell K 210 S Franklin St (Chagrin Falls) CH 7-6136
Jay Eng'g Co 5413 Pearl Rd TU-4-4080
Jubell 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
Maertender Co H G 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 GL 1-5700
*Moss Co Chas R 16956 Van Aken Blvd (Shaker Hts) 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 O 16201 Shaker Blvd WY 1-2624
Rosen Wasser Sales 1581 Coventry Rd (E Cleve) FA 1-0463
Both Sales Co Mike 13947 Cedar Rd YE 2-4262
*Rauer Frank W 4144 Marvin 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
Valentine Forest C 6408 Euclid Ave EN 1-4343
White & Co C E 637 Bulky Bldg MA 1-8410
COLUMBUS
*Lehner Co J W 367 Brynhild Rd LU 5260

FRETSCO

ELECTRICAL—ELECTRONIC
TEST EQUIPMENT
CHOICE OF THE EXPERTS

*McFadden William E 150 E Broad St MA 3363
*Pugh Co C L 4500 Dublin Rd KI 4855
*Walter-Rahe Co Box 212 (Worthington) FR 2-7819
DAYTON
*Bear Corp Neal 1110 Broad Blvd OX 3041
Boehme Associates B-4 Talbott Bldg FU 8188
Crossley & Assoc Alfred 53 Park Ave OX 3594
Epps & Fodotla 1434 Vancouver Dr TA 9345
Grimm A M 1731 Ruskin Rd OR 1496
Jay Eng'g Co 1517 E 3 St KE 2151
Klein Wm 1472 Earham Dr RA 0943
Magee 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
Hecht Co Fred J 1832 Wendell Ave O-0133
MAUMEE
Hanger Fairfield Co 1130 Key St 3-3211
MIDDLETOWN
Wright Eng'g 1304 Elwood Ave
WEST RICHFIELD
*ANB Specialties Co Box 518 0150
*Bear Corp Neal 3435 Streetsboro Rd 100

OREGON

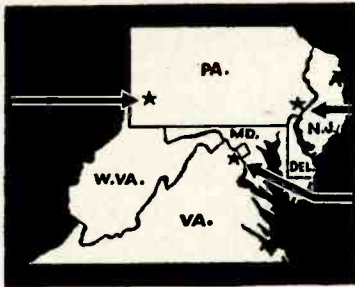
PORTLAND
*Burcham Co Don H 510 N W 19 Ave BR 3830
Hawthorne Electronics 700 SE Hawthorne Blvd FI 9375
Lagg Co Richard 2118 SE Division St EM 8918
*Minthorne Co L L 7521 NE Gilman St KE 0010
*Weber Co Dale 234 Sherlock Bldg AT 5403

PENNSYLVANIA

PHILADELPHIA AREA
*Ball Tom Jacksonwald Ave (Easterly) RE 5-6837
*Bierbaum John W 835 W Sav Fund Bldg PE 5-3738
*Bligs & Co J Alan Box 450 (Doylestown) 9457
Blumenstein Assoc 5040 City Line Ave TR 7-4116
*Brookfield R F 55 Cricket Ave (Ardmore) MT 2-6911
Connors Geo M 16 Trent Rd AR 6052W
*Cordray W Henry 18 W Chelton Ave VI 8-0447
*Danco Corp 1346 Saburhan Sta Bldg LO 4-2870
Danaham Harry W 250 S 17 KI 5-1947
Dienes Co H L 7341 Woodbine Ave TR 7-7831
*Edmonds E J 102 N Laxington (Havertown)
*Estersohn Harry 7135 Germantown Ave WI 7-1816
*Fairbanks Howard J 1615 Darby Rd (Havertown) GR 2-2467
*Friedman Martin 1006 Western Sav Fund Bldg PE 5-4778
Girard Co W E 715 Fairfield Rd (Glenside) OG 0071
Hilliard Assoc 1125 Old York Rd (Abington) OG 3249
*Jeffries S A 105 Forrest Ave (Narberth) MO 4-8500
Lawton Co 836 Mason Ave (Drexel Hill) SU 9-2146
*Leban & Graham 1412 Manoa Rd MI 2-9047
Lewis Herman 1622 68 Ave LI 8-1281
*Lowery Inc L D 50 E Wynnewood Rd (Wynnewood) MI 2-9100
*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 (Narberth) MO 4-4200
*Naudain L Parker Suburban Sta Bldg RI 6-3185
*Newson Jr C H 150 Terminal Ave WI 7-8742
Nolan J J 314 W Sparks St WA 4-1595
Orsi 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 G 4700 Frankford Ave JE 3-0650
*Randall Co Ken 121 N Broad St LO 4-2151
Rehlinger Albert R 8018 Winston Rd WI 7-4935
Slinbin & 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) HI 7-0922
*Stratton Co C H 7852 Montgomery Ave (Elkins Park) MA 5-2231
*Tech Representation 25 S Easton Rd (Glenside) TU 1325
Weber Linz Assoc 238 Shelmeir St CH 3161 J
*Trinkle Wilmer S 2 Roberts Block TU 1075
PITTSBURGH
Alrgood Joseph M 742 Berwin Ave LE 1-3539
Brown Co R E 311 Ross St AT 1-2142
Burke Elec Equip Co 416 Maple Ave PE 1-5357
Clark Co Russell F 1404 Clark Bldg AT 1-8089
Grootzinger Co H W 410 E Genl Robinson LA 1-6280
Kaufman Sales Jerry Plaza Bldg AT 1-0206
Levine Albert 11 Jonquil Pl LO 1-7027
Lips E C 1565 McFarland Rd FI 1-5100
Lowry-Dietrick Co 1404 Swantek 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 O 2046 Brookfield Rd BR 2083
*Podolny James H 4716 Coleridge St HI 1-0800
Bansford 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



A—Philadelphia—Main Office
 B—Washington Office
 C—Pittsburgh Office

SAMUEL K.
(MAC) MACDONALD
 INC.

MANUFACTURERS'
REPRESENTATIVE



1531 SPRUCE STREET
PHILADELPHIA 2
 PENNSYLVANIA

Other Offices

PITTSBURGH
WASHINGTON D.C.



Covering

PENNSYLVANIA
 NEW JERSEY
 DELAWARE
 MARYLAND
 DISTRICT OF COLUMBIA
 VIRGINIA
 WEST VIRGINIA



Associates

NOBLE SHILT
 JIM FARIES
 JACK MAHONEY
 JOHN LARKIN
 JACK D'ANGELO
 "BEANIE"

Flickox ELECTRICAL—ELECTRONIC
 TEST EQUIPMENT
 CHOICE OF THE EXPERTS

- 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
 - *Branum Co 123 Mfg St RI 4995
 - *Camplon 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-Lund & Co 2204 Griffin St RA 5764
 - *Delzell-Maynard Sales 3409 Oaklawn Ave JU 2411
 - Engineering Products Co 5005 W Lovers Lane EL 1179
 - Folsom Sam W 411 N Bishop St YU 9560
 - Green Co John A 6815 Orlole Dr DI 9918
 - *Guenther John B 7322 Marquette Ave EM 6286
 - *Heldenreih Co 6505 Park Lane FO 8-6763
 - Lipecomb Assoc Earl 3561 Marquette EM 7989
 - *McKinney Sales Co Jack F 1330 N Industrial Blvd ST 1997
 - *Sehounmaker Co J Y 2011 Cedar Springs ST 3335
 - *Smith Co J Earl 505 N Ervay St RA 2966
 - *Texport Co 5004 Ross Ave TE 6735
 - *Wilks Co Ernest I 1212 Camp St RI 4059
 - *Yount Jack 1431 Pleasant Dr EX 0988
- FT WORTH**
- Harris Co 716 Dan Waggoner Bldg 0738
- HOUSTON**
- Calmes & Assoc D 4605 Locust St MD 5-1704
 - Harrison Equipment Co 1422 San Jacinto St AT 6315
 - *Kilepera Co M F Box 3113 JA 8459
 - Packard J & D 770 M & M Bldg CA 7349
 - *Smith Co J Earl 6610 Salem St
 - *Willison Co G G 1821 W Alabama JU 1634
- WACO**
- Brockenbrough & Sanders 316 Professional Bldg 4-0441

UTAH
SALT LAKE CITY
 *Gates Co 200 S Main St 9-1101

VIRGINIA

- ALEXANDRIA**
- Ameritean Eng'g Equip 122 N Fayette TE 6-1718
 - Brown & Assoc W A 3834 Mt Vernon Ave BV 3-6100
- RICHMOND**
- Simpson & Son P M 717 Byrd Park Ct 84-1519

WASHINGTON

- SEATTLE**
- Backer 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
 - Jensen Co Vernor O 2616 2 Ave EL 6871
 - *Lee Co Dave M 2517 2 Ave MA 5512
 - *Marsh Agencies 2601 I Ave MA 8762
 - Merritt 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 Burt C 4310 Roosevelt Way ME 6828
 - *Stroum Co S M 1612 Broadway FR 7515
 - *Wedel Co Frank 3215 Western Ave GA 0222
 - *Widdekind Co M K 216 1st Ave N EL 6981

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 5052 N Shoreland Ave WO 4-2155

RACINE

- Darnold D H 914 Kentucky St

WYOMING

- LARAMIE**
- Clough Stan 555 N 12 St 4075

**DON'T
 BLAME
 THE
 POSTMAN**

... if this issue is a few days late.

Publication of this May issue of **TECHNICIAN** was purposely delayed to include important 11th-hour material in both sections of this double-feature issue.

- 1—The Technician Buyers Directory
- 2—The Chicago Electronic Parts Show

Just turn the pages and you will recognize the long-time usefulness of this issue. You will find new products introduced at the parts show and soon to be offered to you by the jobbers.

Also, you will find a buying directory for year-round use, plus the ever-useful regular features such as Circuit Digests.

Take good care of this May issue. You'll be needing it, and reading it, over and over again.

TECHNICIAN

480 Lexington Avenue, New York 17, N. Y.

1954 TECHNICIAN BUYERS DIRECTORY

Alphabetical Listing of Manufacturers

WITH THE NEW, EXCLUSIVE LOCALIZER INDEX

A complete listing of the names and addresses of manufacturers of service and replacement products, component parts, equipment, instruments and materials. 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 the shortest means of contacting any manufacturer. Symbols show type of sales; BO branch off; D distrib; DS distrib sls; GV govmt sls; IDS industl & distrib sls; R rep; SE sls engr.

Indented listings are advertisements.

Abbott Plastics & Mach 6322 N Clark St Chicago 26 III
Abel Mfg Co 32-20 37th Ave Long Island City 1 N Y
Stillwell 6-8390
J Abel
F E Hettling

Products
Manufacturers of TV antennae; UHF & VHF Yagi;
Bowtie; Corner Reflector; Indoor; Trombone;
Conical and combination types; Auto; Taxi;
Truck; Boat and R R communication types
Facilities

Design development and production of mechanical
optical & electronic devices & components

ABT Mfg Co 715 N Kedzie Ave Chicago 12 III
Accurate Insulated Wire 25 Fox St New Haven 13 Conn
Ace Electric Mfg 1458 Shakespeare Ave New York 52 N Y
Acme Battery Corp 59 Pearl St Brooklyn N Y
Acme Electric Corp 31 Water St Cuba N Y
Acme Electr Heating 1217 Washington St Boston 18 Mass
Acme Electronics Sub Aerovox Monrovia Calif
Acme Tool & Specialties 224 N Loomis St Chicago III
Acoustical Products Mfg Co Dorsa Ave Livingston N J
Aero Products Co 369 Shurs Lane Philadelphia 28 Pa
Aero Tool & Die Works 4554 Broadway Chicago 40 III
Adams & Westlake 1025 N Michigan Ave Elkhart Ind
Admiral Corp 3800 Cortland St Chicago 47 III
Advance Electr & Relay 2435 N Naomi St Burbank Calif
Advance Electronics 8510 N End Ave Oak Park Mich
Aerolite Electronics 507 26th St Union City N J
Aero-Tone Mfg Co 4836 Joy Rd Detroit 4 Mich
Aerovox Corp 740 Belleville Ave New Bedford Mass
Airdesign Inc 241 Fairfield Ave Upper Darby Pa
Air-Up Tower Corp 350 E Bowry Muskegon Heights Mich
Akro-Mills Inc PO Box 989 Akron 9 Ohio
Alamo Electronics 1415 N Brazos St San Antonio Texas
Alco Electronics Mfg Co 3 Wolcott Ave Lawrence Mass
Alden Products Co 117 N Main St Brockton 64 Mass
All Channel Antenna Corp 47-39 49 St Woodside 77 N Y
President—M rvin P Middlemark
Vice President—William T Korn

Product
Manufacturers of patented motorless all direction
UHF-VHF antennas

Allan-Bradley Co 1326 S 2nd St Milwaukee Wis
Alliance Mfg Co Lake Park Blvd Alliance Ohio
Allied Control Co 2 East End Ave New York 21 N Y
Allied Electronics 4212 Lankershim Blvd N Hollywood Calif
Allied Eng'g Div 230 Park Ave New York 17 N Y
Allied Engraving & Stamping 161 Ellcott St Buffalo N Y
Allied Industries 2500 Woodland Ave Louisville 10 Ky
Allied Mfg Corp 605 61st St W New York N J
Allied Mfg & Sales Co 201 N Wells St Chicago 6 III
Allied Radio Corp 100 N Western Ave Chicago 80 III
Alpha Metals Inc 56 Water St Jersey City 4 N J
Alpha Wire Corp 430 Broadway New York 13 N Y
Alproco Inc Mineral Wells Texas
Altec Lansing 9356 Santa Monica Beverly Hills Calif
American Condenser 4410 N Ravenswood Ave Chicago III
American Electrical Heater 6110 Cass Detroit Mich
American Electronics 1203 Bryant Ave New York 59 N Y
American Electronic 9503 W Jefferson B Culver City Calif
American Elife Inc 1775 Broadway New York 19 N Y
American Mercantile Co 33 W 42nd St New York 36 N Y
American Microphone 370 S Fair Oaks Pasadena Calif
American Phenolic Corp 1830 S 54th St Chicago III
Amer Radio Hdw 152 S MacQuetton Pkwy Mt Vernon N Y
American Radionic Co 33 Flatbush Ave Brooklyn 17 N Y
American Screw Co 1670 W Main St Willimantic Conn
American Thermo-Elect 198-11 Hollis Ave Hollis N Y
American TV & Radio Co 300 E 4th St Paal 1 Minn
American Vacuum 11779 Santa Monica Blvd W Los Angeles Calif
Ames Mfg Corp 2750 Park Ave New York 51 N Y
Amperex Electronic Corp 230 Duffy Ave Hicksville N Y
Amperite Co 561 Broadway New York 12 N Y
Ampex Corp 934 Charter St Redwood City Calif
Amplifier Corp of America 398 Broadway New York N Y
Amplifier Inc 362 W 57th St New York N Y
Ampro Corp 2835 N Western Ave Chicago 18 III
Anaconda Copper Mining Co 25 Broadway New York N Y
Anchor Electronics Inc 717 51st St Union City N J
Anchor Metal Co 244 Boerum St Brooklyn 6 N Y
Anchor Plastics 36-36 36th St Long Is City 6 N Y

Anchor Radio Corp 2215 S St Louis Ave Chicago III
Anchor Wire Corp 183-16 Jamaica Ave Jamaica 3 N Y
Andrew Corp 363 E 75 St Chicago 19 III
Anslay Mfg Co Arthur Doylestown Pa
Antenna & Mounting Hdw Co 9216 Grand Franklin Pk III
Antenna Products 3628 N Lincoln Ave Chicago 13 III
Antenna Specialists 12435 Euclid Ave Cleveland Ohio
Antennex Co 4060 Ocean Park Ave Venice Calif
A P Electro Lab P O Box 862 Union N J

President—Alexander Mooney
Technical Director—Stephen Poznanski
Chief Engineer—Donald Hoffman
Research & Development Lab
Non Inflammable line of
Electronic Lubricants & Adhesives
Paints, Lacquers, Solvents
Plastic Insulation & Conductors
Electronic Chemicals
Cleaners, Polishers & Silicone Pds
Flooding & Plastic Sheeting

Applegate & Co C J 1816 Grove St Boulder Colo
Approved Electronic Instr Corp 928 Bldw N Y 10 N Y
Aro Electronics 103 Lafayette St New York 13 N Y
Argos Products 310 Main St Genoa III
Aryle Electronics Co 8 W 18th St New York 11 N Y
Armae Co PO Box 1083 Macon Ga
Arrow-Hart & Hegeman 103 Hawthorn St Hartford 6 Conn
Associated Production 162 N Clinton St Chicago 6 III
Astatic Corp PO Box 120 Conneaut Ohio
Astron Corp 255 Grant Ave E Newark N J
Atlantic Electronics 91 Jefferson St Passaic N J
Atlantic Transformer Corp 30 Hynes Ave Groton Conn
Atlantic Wire & Cable 119-14 14 Rd Colton Point N Y
Atlas Coil Inc Cottage St Derby Conn
Atlas Resistor Co 24 E Coulter St Philadelphia Pa
Atlas Sound Corp 1449 39th St Brooklyn 18 N Y
Auda Co 500 5th Ave New York N Y
Audio Development 2833 13th Ave S Minneapolis Minn
Audio Devices Inc 444 Madison Ave New York N Y
Autoeract Metals Co 5024 Elm St Skokie 8 III
Automatic Metal Products 315 Berry St Brooklyn 11 N Y
Automatic Radio Mfg 122 Brookline Ave Boston Mass

Baker Mfg Co 133 Enterprise St Evansville Wis
Bark City Industries Inc 1150 S 4th St DeKalb III
Barker & Williamson 235 Fairfield Ave Upper Darby Pa
Barrett Electronics 22319 Kathryn Ave Torrance Calif
Baumker Mfg Co 3826 Summit St Toledo 11 Ohio
Beam Instruments Corp 350 5th Ave New York N Y
Becker Electronics Mfg Corp Valley Stream N Y
Belden Mfg Co 4647 W Van Buren St Chicago 44 III
Bel Fuse Inc 311 Mountain Rd Union City N J
Bell Sound Systems 555 Marlon Rd Columbus 7 Ohio
Belvard & Co 481 Sterling Pl Brooklyn N Y
Bendix Aviation Corp Red Bank Div Eatontown N J
Bennett Laboratories 2700 Bay Rd Redwood City Calif
Berkshire Laboratories 692 Beaver Pond Lincoln Mass
Berlant Assoc 4917 W Jefferson Blvd Los Angeles Calif
Bestcraft Products Co 626 Broadway New York 12 N Y
Best Electronic 11368 W Olympic Blvd Los Angeles Calif
Beta Electric Corp 333 E 103rd St New York 29 N Y
Birdsell Mfg Co 750 San Antonio Rd San Antonio Tex
Birnbach Radio Co 145 Hudson St New York 13 N Y
Blaco Mfg Co 6541 Euclid Ave Cleveland 3 Ohio
Blazon Mfg Co 6021 Dempster St Morton Grove III
Billie Electric Co Union Station Bldg Erie Pa
Blonder-Tongue Labs 526 North Ave Westfield N J
B & M Elec Co 838 4th Ave Brooklyn 32 N Y
Bogart Mfg Corp 315 Seigel St Brooklyn 6 N Y
Bogen Co David 29 9th Ave New York 14 N Y
Bohn Sound Eng'g Co Lincoln Highway E Ft Wayne Ind
Bond Electric Corp New Haven Conn
Bozak Co R T 114 Manhattan St Stamford Conn
Branch Mfg Corp 200 Central Ave Newark 3 N J
Bradley Laboratories 168 Columbus Ave New Haven Conn
Bright Star Battery Co 200 Crooks Ave Clifton N J
British Electronic 23-03 45 Rd Long Island City 1 N Y
Brociner Electronics Lab 344 E 32nd St N Y 16 N Y
Brook Electronics Inc 34 DeHart Pl Elizabeth 2 N J
Brooks Radio & TV Corp 84 Vesey St New York 7 N Y
Brown Electronics 12450 W Washington Venice Calif
Browning Labs Inc 750 Main St Winchester Mass

Brush Electronics 3405 Perkins Ave Cleveland Ohio
Buchen Co R J PO Box 9 Briceyln Minn
Bud Radio Inc 2118 E 55th St Cleveland 3 Ohio
Bullet Electronics 2637 S Lowell St Springfield III

Manufacturers of
All Channel VHF "Springfield" antennas, all channel
UHF "Colt" and "Luger" antennas, "Range-
finders" self supporting towers and installation
accessories.

Burgess Battery Co Freeport III
Burlington Instrument 1102 4th St Burlington Iowa
Burnell & Co 45 Warburton Ave Yonkers 2 N Y
Bussmann Mfg Co 2536 W University St Louis 7 Mo

Calbest Eng'g 828 N Highland Ave Hollywood 38 Calif
Calco Mfg Co Oakland Ave & Penn RR Washington Pa
Califone Corp 1041 N Sycamore Ave Hollywood 38 Calif
Camburn Inc 32-40 57th St Woodside 77 N Y
Camburn Sales & Mfg 134 Orchard Ave Battle Creek Mich
Campbell Industries 3806 St Elmo Chattanooga 9 Tenn
Campbell X-Ray Corp 1100 Cummington St Boston 15 Mass
Cannon Co C F Springwater N Y
Cannon Electric 3209 Humboldt St Los Angeles Calif
Carbonneau Industries Grand Rapids 4 Mich
Cardwell Electronics Productions Allen Plainville Conn
Carling Electric 505 New Park Ave West Hartford Conn
Carter Motor Co 2644 N Maplewood Ave Chicago 47 III
Carter Parts Co 213 Institute Pl Chicago 7 III
Cass Machine Co 691 Antoinette St Detroit 2 Mich
Cayce TV Eng'g 1904 Mich Hwy 139 Benton Harbor Mich
CBC Electronics 1310 Callowhill St Philadelphia Pa
CBS Hytron 100 Endicott St Danvers Mass
Central Div 900 E Keefe Ave Milwaukee 1 Wis
Century Electronics Co 211-04 99th Ave Queens Village
N Y

Chamrox Record Cleaner Co Box 532 Rochester N Y
Chanel Master Corp Ellenville N Y
Chemical Electronics 630 W Mt Pleasant Livingston N J
Chemical Electronic Eng'g 283 Main St Matawan N J
Chester Cable Corp Highview St Chester N Y
Chicago Electronic 3223 W Armitage Ave Chicago 47 III
Chicago Industrial Instr Co 536 W Elm St Chicago 10 III
Chicago Standard Transformer 3850 Elston Chicago 18 III
Chromatic Television Labs 703 37th Ave Oakland Calif
Churchill Lighting 344 Franklin St Melrose 76 Mass
Cima Corp 119 Braintree St Allston Mass
Cinaudagraph Corp 7334 N Clark St Chicago 26 III
Cinch-Jones Div Cinch Mfg 1026 S Homan Ave Chi III
Cincinnati Ventilating Co 3rd & Madison Covington Ky
Circon Component Co 17544 Raymer St Northridge Calif
Claremont Tube Corp N Y Ave & Main St Westbury N Y
Clark Electronic Labs Box 165 Palm Springs Calif
Clearcoat Mfg Co Washington St Dover N H
Clearbeam Antenna 100 Prospect Ave Burbank Calif
Cleveland Electronics 6611 Euclid Ave Cleveland Ohio
Clum Mfg Co 611 W National Ave Milwaukee 41 Wis
Codeltype Laboratories 550 5th Ave New York 19 N Y
Coil Winding Equipment 19 Maxwell Ave Oyster Bay N Y
Coleman & Sons D 4515 Addison St Chicago 41 III
Collins Audio Products Co PO Box 368 Westfield N J
Collins Radio Co Cedar Rapids Iowa
Colortone Electronics 238 William St New York 38 N Y
Columbia Resistors 23 W Washington Pearl River N Y
Columbia Technical Corp 5 E 57th St New York 22 N Y
Columbia Wire & Supply 2850 Irving Park Rd Chicago III
Commercial Products 417 Main St Toledo 1 Ohio
Conant Laboratories 6500 "O" St Lincoln Neb
Condenser Mfrs Inc Nashville Tenn
Condenser Products Co 7517 N Clark St Chicago 26 III
Conn-Cord Inc Progress Ave & Monroe Sts Union N J
Connecticut Telephone & Electric Corp Meriden Conn
Consolidated Radio Products 350 W Erie St Chicago III
Consolidated Wire 1635 S Clinton St Chicago 16 III
Constat Laboratories 214 W 29th St New York 1 N Y
Continental Carbon 13900 Lorain Ave Cleveland Ohio
Continental Electric Co 715 Hamilton St Geneva III
Continental Electronics 5320 Lancaster Ave Phila Pa
Control Electronics 1925 N Y Ave Huntington Sta N Y
Cook Laboratories 114 Manhattan St Stamford Conn
Cooper Electronic 4500 Melrose St Philadelphia 24 Pa
Co-operative Industries Inc Chester N J
Cooper Industries 4953 W Fullerton Ave Chicago 39 III
Copperweld Steel Co Wire & Cable Div Glassport Pa

Cornell-Dubiller Elec Corp S Plainfield N J
 Corning Glass Co Electronic Div Corning N Y
 Cornish Wire Co 50 Church St New York 7 N Y
 Cosa Corp 405 Lexington Ave New York 17 N Y
 Cosmic Radio Corp 853 Whittier St Bronx N Y
 Creative Plastics Corp Rt 25-A Stony Brook N Y
 Crescent Industries 5900 Touhy Ave Miles III
 Crest Labs 84-11 Rockaway Beach Blvd Rockaway Beach 93 N Y
 Crowley & Co Henry L I Central Ave W Orange N J
 Crown Controls 124 S Washington St New Bremen Ohio
 Cryce Inc 1138 Mission St S Pasadena Calif
 Cammins-Chicago 4740 N Ravenswood Chicago III
 Cycle Electronic Lab 356 Glenwood Ave E Orange N J

Dale Products 1350 28th Ave Columbus Nebr
 Dalmatronic Co 534 Laurel St San Carlos Calif
 Danforth Mfg Co 531 S 3rd St Monmouth III
 Davis Electronics 4002 Burbank Blvd Burbank Calif
 Daystrom Electric 753 Main St Poughkeepsie N Y
 Deal Products Hallertown Rd NR 37 Easton Penna
 Deleo Radio 1446 S Home Ave Kokomo Ind
 Deleo-Remy Div General Motors Corp Anderson Ind
 Deutschmann Corp Topeka Providence Highway Norwood Mass
 DeWald Radio & TV 35-15 37th Ave Long Island City I
 Diallight Corp 60 Stewart Ave Brooklyn 37 N Y
 Di-Co TV & Plastic Co 322 Boston Post Rd Milford Conn
 Digital Products Inc 7645 Fay Ave LaJolla Calif
 D & M Products 13316 Hamilton Ave Detroit 3 Mich
 Dorn Equipment Corp 88 Broad St Boston 10 Mass
 Dow-Kee Co Warren Minn
 Drake Electric Works 3656 Lincoln Ave Chicago 13 III
 Drake Mfg Co 1713 W Hubbard St Chicago 22 III
 Drake Co R L 18 E Central Ave Miamisburg Ohio
 Dabbings Co 41-10 45th St Long Island City 4 N Y
 Deala Co Box 78 Coal Fork W Va
 DeKane Corp St Charles Ill
 Demont-Alrplane & Marine 15 William St N Y 5 N Y
 Demont-Alrplane & Marine Instruments Clearfield Pa
 DeMont Labs Allen B 750 Bloomfield Ave Clifton N J
 DeMont Labs Inc Instr Div 760 Bloomfield Ave Clifton N J
 DeMont Labs Inc Allen B 2 Main St Passaic N J
 DeMont Labs Inc Allen B Mobile Comm 1500 Main Clifton N J
 Deotone Co Locust St Keyport N J
 Derakool Inc 1010 N Main St Elkhart Ind
 Duro Specialty Co 8 Bennett St Lynn Mass
 DX Radio Products Co 2300 Armitage Ave Chicago 47 III

Eagle Speaker Co 4056 W Roosevelt Rd Chicago 24 III
 Easy-Up Tower Co Racine Wis
 Ebert Electronics 212-26 Jamaica Ave Queens Village N Y
 Eby Co Hugh H 4700 Stenton Ave Philadelphia 44 Pa
 Ed-Berl Products 7 Garden Pl Baldwin L I N Y
 Edison Inc Thomas A W Orange N J
 Efor Inc 1501 W Congress St Chicago 7 III
 Eitel-McCullough 798 San Mateo Ave San Bruno Calif
 Elastic Stop Nut Corp 2330 Vauxhall Rd Union N J
 Eico Corp 190 W Glenwood Ave Philadelphia 19 Pa
 Electric Indicator Co Camp Ave Springdale Conn
 Electric Soldering Iron Co Deep River Conn
 Electrical Service 1271 Mission St San Francisco Calif
 Electr-Cord Mfg Co 2554 E 18 St Brooklyn 35 N Y
 Electro Eng'g Products 609 W Lake St Chicago 6 III
 Electromotive Mfg Co Willimantic Conn
 Electronic Beam Corp 923 Old Nepperham Ave Yonkers N Y
 Electronic Chemical 813 Communipaw Ave Jersey City N J
 Electronic Devices Inc 429 12th St Brooklyn 15 N Y
 Electronic Eng'g 3523 W Armitage Ave Chicago 47 III
 Electronic Instruments 84 Withers St Brooklyn 11 N Y
 Electronic Measurements 280 Lafayette St N Y 12 N Y
 Electronic Workshop 26 W 8th St New York 11 N Y
 Electrons Inc 127 Sisseton Ave Newark 3 N J
 Electro Products Labs 4501 N Ravenswood Ave Chicago III
 Electro-Voice Inc Buchanan Mich
 Electrovox Co 60 Franklin St E Orange N J
 Electrome Motor Products Corp Genoa III
 Elenco Corp 2900 Company Ave Cincinnati 25 Ohio
 Eltran Corp 113 W Station St St Anne Ill
 Energy Farm Equipment Co Monticello Iowa
 Enco Mfg Co 4522 W Fullerton Ave Chicago 39 III
 Epcor Electronics Inc 140 Liberty St New York 6 N Y
 Epsco Inc 126 Mass Ave Boston 15 Mass
 Equipto Div Aurora Equip 422 Cleveland St Aurora III
 Erie Resistor Corp 644 W 12th St Erie 6 Pa
 Erwood Inc 1770 Berteau St Chicago III
 Esco Mfg Co Box 344 Summit III
 Espy Mfg Co 528 E 72nd St New York 21 N Y
 Eureka Television & Tube Corp 69 5th Ave Hawthorne N Y

Fairchild Recording Equipment Co Whitestone 57 N Y
 Federal Antl Capacity Switch 72 Kingsley St Buffalo N Y
 Federal Screw Products 224 W Haron St Chicago 10 III
 Federal Telephone & Radio 100 Kingsland Rd Clifton N J
 President—R S Perry
 Vice Pres—G T Scharffenberger
 Vice Pres-Apparatus Div—T M Douglas
 Vice Pres-Components Div—S J Powers
 Vice Pres & Wks Mgr-Comp Div—W P Maginnis
 Vice Pres-Dir Purchases—C G Sherwood
 Comptroller—R deF 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 Parts—J C Giguere
 Mgr R R Industry Sales Org—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—Abbett & Hustis 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-IS—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 Elicott Square Building
 Washington 2517 Covers New York (except
 Counties of Bronx, Kings, Nassau, New York,
 Queens, Richmond, Rockland, Westchester, Sul-
 folk)
 Chicago-IDS—Leroy W Beier Company 6518 West
 North Avenue Berkshire 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-Wyom-
 ington-Utah-Montana (Eastern half of the State
 to the boundaries of Hill, Chateau, 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 Burcaw 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 Jef-
 ferson St Republic 2-0145 Covers California-
 Nevada-Arizona
 Los Angeles-IS—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-Flori-
 da-Georgia-Mississippi-North Carolina-South
 Carolina-Tennessee
 Minneapolis-IDS—H M Richardson* 9 East 22nd
 Street Geneva 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 Representa-
 tion 25 S Easton Road Suite 200 Glenside Pa
 Turner 1325 and 1326 Covers Delaware (New
 Castle County)-New Jersey (Radio Corp of Amer-
 ica at Princeton the City of Phillipsburg the City
 of Trenton, Pennsylvania (all the area West to
 and including the Counties of Tioga, Lycoming,
 Northumberland, Dauphin, and York)
 Philadelphia-IS—J R Benge Technical Representa-
 tion 25 South Easton Road Suite 200 Glenside
 Pa Turner 1325 and 1326 Covers Maryland-Dist-
 rict 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-IS—Maydwell and Hartzell Inc 1238 N W
 Glisan Street W L Bright Dist Mgr ATwater 4173
 Covers Oregon
 San Francisco-DS—J W Marsh Company 1258 Fitz-
 gerald Avenue Valencia 4-6714 Covers Califor-
 nia-Nevada-Arizona
 San Francisco-IS—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)-Nevado
 Seattle-DS—Fred H Haight Company 3212 East Lake
 Avenue Covers Oregon-Washington-Idaho
 (Northern half of the State including Counties
 of Adams, Walley, Lemhi, Beaverhead, Madison,
 and Gallatin)-Montana (Western half of State
 including Counties of Hill, Chateau, Judith
 Basin, Wheatland, Sweetgrass, and Park)
 Seattle-IS—Maydwell and Hartzell Inc 306 Dexter
 Avenue E J Reichwein Dist Mgr Seneca 2368
 Covers Idaho (Northern half of State including
 Counties of Adams, Walley, and Lemhi)-Montana
 (Western half of the State including
 Counties of Hill-Chateau-Judith Basin-Wheat-
 land-Sweetgrass, and Park)-Washington
 Westfield N J-IDS—H G Richter 467 Hillside Avenue
 Westfield 2-4651 and Miggins Sales 107-37 71st
 Avenue Forest Hills Long Island New York
 Boulevard 3-1643 Covers New York City (in-
 cluding Counties of Nassau, Rockland, West-
 chester, and Suffolk)-New Jersey (except Prin-
 ceton 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 Bryhild Road
 Covers Ohio-West Virginia-Pennsylvania (that
 portion of the State lying West of but not in-
 cluding the Counties of Tioga, Lycoming, North-
 umberland, Dauphin, and York)
 Dallas-IDS—Delzell Maynard 3409 Oaklawn Ave
 JUslin 2411 Covers Oklahoma-Arkansas-Louis-
 iana-Texas (except El Paso County)
 *Selenium Rectifiers and Coaxial Cable Only
 Feller Eng'g Mfg 8026 N Monticello Ave Skokie III
 Fenton Co 15 Moore St New York 4 N Y
 Fenwal Inc Pleasant St Ashland Mass
 Ferris Instrument Co 110 Cornelia St Boonton N J
 Fidelitone Inc 1616 Devon Ave Chicago 26 III
 Fidelity Amplifier Co 703 Willow St Chicago 14 III
 Fidelity Chemical 470 Fretinshyngton Ave Newark 5 N Y
 Filtron Co 131-15 Fowler Ave Flushing N Y
 Fink Electronics 518 E 95th St Chicago 19 III
 Finn & Co TR 333 Jackson Ave New York 54 N Y
 Finney Co 4612 St Clair Ave Cleveland 3 Ohio
 President—L H Finneburgh
 Vice President—M L Finneburgh
 Sales Manager—M L Finney Jr
 Field Prom Director—George Kollar
 Plant Supt—Victor Trebules
 Chief Research Engineer—Robert Weiss
 Products
 Finco 400 Fringe area antenna (VHF)
 Finco 400-A Fringe area antennas (VHF-UHF)
 Finco series 500 UHF antennas
 Finco 400-SA FRO-BACK
 Fisher Radio 21-21 44th Rd Long Island City 1 N Y
 Fonotalk Corp 11 S LaSalle St Chicago III
 Forbes & Wagner 339 Central Ave Silver Creek N Y
 Forsberg Mfg Co 125 Seaview Ave Bridgeport Conn
 Ford Transformer 1718 Weirfield St Brooklyn 27 N Y
 Frequency Standards Box 504 Ashbury Park N J
 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: Fretaray—Fretline—Saucerline—Mi-
 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: S Calif
 GA—H J Odum 2151 Beech Rd S W Atlanta
 Territory: Ala (except Mobile & Decatur) Ga
 FLA—W C Jaudon 207 W Alfred St Tampa Territory:
 Mobile Ala—Fla
 MISSOURI—Hank J Jobe Jr. 1287 W 71 Ter Kansas
 City Territory: Kansas Mo—Neb—Colo—Iowa
 (South of Des Moines, including Des Moines)—
 Cheyenne & Casper Wyoming
 N C—M F Hager 526 Belton St Charlotte Territo-
 ry: N C—S—Danville Va
 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 III—S Ind—Ky—W Va—S Ohio
 PA—Anton C Fischer 803 Highview Road Pittsburg
 Territory: N Ind—Central Ill (except Chicago)
 —N Ohio—Mich—N W Pa (including Erie &
 Sharon)—New York (except Metropolitan Area)
 PA—Herman Lewis 1622 68th Avenue Philadelphia
 Pa Territory: Del—Md—N J—E Pa
 TENN—M N Nilson 123 Overhill Drive Danelson
 Territory: Miss—Tenn—Bristol Va—Hopkinsville
 Ky—Denton Ala
 TEXAS—Don Rysler 2022 Chippendale Road Houston
 Territory: Texas (except El Paso), La—Oklahoma
 —Ark
 WASH—M K Widdekind 216 1st Ave N Seattle
 Territory: Idaho—Montana—Oregon—Washing-
 ton

Gahagen Inc 63 E 3 St Bethlehem Pa
 Galbraith & Son 450 6th Ave New York 11 N Y
 Gates Electric Co 839 Elm St Rockford III
 Gee-Lar Mfg Co 839 Elm St Rockford III
 General Cable Corp 420 Lexington Ave New York 17 N Y
 General Cement Mfg Co 919 Taylor Ave Rockford III
 General Dry Batteries 13000 Athens Ave Cleveland 7 Ohio
 General Electric Co 1285 Boston Ave Bridgeport 2 Conn
 General Electric Co 1 R River Rd Schenectady N Y
 General Electric Co Electronics Park Syracuse N Y
 General Fuse Co 601 Main St Matawan N J
 General Industries Co Olive & Taylor Sts Elyria Ohio
 General Instrument Corp 829 Newark Ave Elizabeth 3 N J
 Executive Personnel
 Chairman of the Board—A Blumenkrantz
 President—M Cohen
 Treasurer—A Konecny Jr
 Controller—C Sullivan
 Secretary—L Scadron
 Sales Manager—E Freed
 Divisions
 F W Sickles Division
 Chicopee Massachusetts
 Joliet Illinois
 Danielson Connecticut
 Brand Name
 General Instrument
 List of Products
 General Instrument Corporation:
 UHF All Channel Converter, TV Tuners, Vari-
 able Capacitors
 F. W. Sickles Division:
 TV Deflection Components, Miniature Air

Trimmers, I F Transformers, R F Transformers, Auto Radio Tuners

Representatives

Chicago-BO—General Instrument Corp 3147 Logan Square Albany 2-6466
New York-R—Donert Associates Inc 362 Fifth Avenue Longacre 3-4383
California-R—Worthco Corporation 430 North Camden Drive Beverly Hills Crestview 5-0108
New England-DS—Milton R Benjamin 1746 East 47th Street Brooklyn N Y Cloverdale 8-1811
E Pennsylvania, Delaware, Maryland-DS—Leban & Graham 1412 Manoa Road Philadelphia Pa Midway 9-9822
Wisconsin-DS—Eugene Loeb 5052 North Shoreland Avenue Milwaukee Wisconsin Woodruff 4-2155
Michigan-DS—R C Nordstrom 580 N. Woodward Avenue Birmingham Midwest 4-1110
Ohio, W Virginia, W Penna-DS—James H Podolny Company 4716 Coleridge Street Pittsburgh Hilland 1-0800
Missouri, Iowa, Kansas-DS—L F Woalterman 3938 Lindell Boulevard St. Louis Plateau 9272
Indiana, Kentucky-DS—Robert O Whitesell & Associates 2208 E Washington Street Indianapolis Indiana Market 8517
Florida-DS—Jack Geartner 823 86th Street Miami Beach Miami Beach 866664
Texas, Louisiana, Oklahoma, Arkansas-DS—Jim & Dave Packard 770 M & M Building Houston 2 Texas Capitol 7349
Pacific Northwest-DS—James J Sacher 2321 Second Avenue Seattle Washington Main 8811

General Products Corp 107 Salem St Union Springs N Y
General Test Equipment Co 38 Argyle Pk Buffalo 22 N Y
General Transformer Co 18240 Harwood Ave Homewood Ill
General Vacuum Tube Corp Ardsley N Y
Germanium Prods Corp 26 Cornellison Ave Jersey City 4 N J

G & H Wood Products Co 75 W 11th St Brooklyn 11 N Y
Girard Hopkins 1000 40th Ave Oakland 1 Calif
G & M Equipment Co 7315 Varma Ave N Hollywood Calif
Gomset Co 801 S Main St Burbank Calif
Good-All Elec Mfg Co Ogallala Neb
Good Inc Don 1014 Fair Oaks Ave S Pasadena Calif
Gotham Television Corp 123 W 64th St New York 23 N Y
Grauer Transformer 2734 N Palisade Rd Chicago 39 Ill
Graeco Products 36-17 20th Ave Long Island City 5 N Y
Grant Palley & Hdw 31-85 Whitestone Pkwy Flushing N Y
Graybar Electric Co 420 Lexington Ave New York N Y
Grayhill 561 Hillgrove LaGrange Ill
Grayline Eng'g Co 12243 Ave O Chicago 33 Ill
Great Eastern Mfg Co 163 Remsen Ave Brooklyn 12 N Y
Greenlee Tool Co 1837 Columbia Ave Rockford Ill
Guardian Electric Mfg Co 1621 W Walnut Chicago 40 Ill
Gudson Co 340 W Huron St Chicago 10 Ill
Guthman & Co E I 15 S Throop St Chicago 7 Ill

Halderson Transformer 4500 Ravenswood Ave Chicago Ill
Hallcrafters Co 4401 W 5th Ave Chicago 24 Ill
Hamilton Electronics 2726 Pratt Ave Chicago 45 Ill
Hammarlund Mfg Co 460 W 34th St New York 1 N Y
Handy & Harman 82 Fulton St New York 38 N Y
Hansen Mfg Co R R #1 Princeton Ind
Hardwick Hindle Inc 40 Hermon St Newark 5 N J
Haydon Mfg Co 245 E Elm St Torrington Conn
Haydon Switch Inc 232 N Elm St Waterbury Conn
Hayde Bros Box 1226 Plainfield N J
Haygren Electronic Mfg 436 18th St Brooklyn 15 N Y
Heath Co 305 Territorial Benton Harbor Mich
Heller Co 2135 Superior Ave Cleveland 14 Ohio
Hewlett Mfg Co PO Box 612 Round Lake Ill
Hewl Duty Electr 4212 W Highland Blvd Milwaukee Wis
H & H Products P O Box 2333 Term Annex Los Angeles Calif

Hilok Electrical Instr 10514 Dupont Ave Clev 8 Ohio
Hilborn Electronic Prods 55 Nassau Ave Brooklyn 22 N Y
Hi-Lo TV Antenna 3540 N Ravenswood Ave Chicago 13 Ill
President—Frank J Klancnik
General Manager—E A Gonco
Factory Sales Representative—Max London

Manufacturers of television antennas; antenna accessories; electrical outlets; tables; etc.
Representatives

Atlanta-D—Hub Sales Co P O Box 146 Brookhaven Ga. Covers So Carolina; Georgia; Alabama; Tennessee
Chicago-D—Sol Levin 2823 West Chase. Covers Illinois outside of Cook County; Mich
Owen H. Smith Co 225 W Huron Chicago 10, Ill. Covers Wisconsin
Cleveland-D—Sidney M Levin 4217 Okalona Road Covers Ohio; Western Pa; West Va; Kentucky; Indiana
Dallas-D—Max Heidenreich 6505 Park Lane Covers Texas; Arkansas; Louisiana; Oklahoma
Los Angeles-D—John B Tubergen 2232 W 11 Street Covers So California South of Fresno, Arizona, New Mexico
Miami Beach-D—Jack Geortner 823 86 St. Covers Florida
New England-D—Paul W Nief 15 Oak Street Westport. Covers Connecticut; Mass; R; Maine; New Hampshire
New York-D—Archie G Schoenen 353 W 56 St. Covers Metropolitan New York; New Jersey to Trenton; Penn East of Susquehanna River; New Jersey; Del; Maryland; Virginia; Dist of Columbia
Puerto Rico-D—Richard Davila 84 Munoz Rivera Ave. Stog 27. Hato Rey. Covers Puerto Rico
San Francisco-D—L A Nott & Co 1061 Howard Street. Covers Northern California including Fresno, Nevada
St Louis-D—John Spiller 3979 Randall St. Covers Metropolitan St Louis Missouri
Export—Arthur Williams 201 North Wells Chicago

6, Illinois. Central 6-5169 Cable Address ENOTS Export Representative
Hiners-Galanek 25-14 Broadway Long Island City 6 N Y
Hi-Par Products Co 347 Lunenburg St Fitchburg Mass
H M H TV Industries 746 N Pickering St Whittier Calif
Holub Industries 413 DeKalb Ave Sycamore Ill
Hoyt Electrical Instr 42 Carleton St Cambridge Mass
Husbell Co Harvey State & Bostonwick Bridgeport 2 Conn
Hudson Lamp Co 528 Elm St Arlington N J
Hudson Wire Co Oslaling N Y
Hughes Aircraft Corp Calver City Calif
Hull & Co R O 1300 Parsons Ct Rocky River Ohio
Hutch & Son 125 S Elizabeth St Lima Ohio
Hyon Mfg Co PO Box 155 Pasadena 8 Calif
Hydro-Aire Sub Crane Co 3000 Winona St Burbank Calif
Hy-Lite Antenna Inc 242 E 137th St New York 51 N Y

Ideal Industries Inc Sycamore Ill
I-E Mfg 325 N Hoyne Ave Chicago 12 Ill
Illinois Condenser 1616 N Throop St Chicago 22 Ill
Illinois Transformer 412 S Green St Chicago 7 Ill
Imperial Radar & Wire 820 E 233rd St New York 66 N Y
Industrial Condenser 3243 N Calif Ave Chicago 18 Ill
Industrial Hdw Mfg Co 109 Prince St New York 12 N Y
Industrial Television 369 Lexington Ave Clifton N J
Industrial Test Equip Co 55 E 11th St New York 3 N Y
Injection Molders Supply 3514 Lee Rd Cleveland Ohio
Instrument Laboratories 315 W Walton Pl Chicago Ill
Instrument Resistors Co 1036 Commerce Ave Union N J
Insuline Corp America 186 Granite St Manchester N H
Intercontinental Industries 555 W Adams St Chicago 6 Ill
Interelectronics 2432 Grand Concourse New York 58 N Y
Int'l Rectifier Corp 1521 E Grand Ave El Segundo Calif
President—Eric Lidow
Vice President—Dr Hans A Rudolph
Sec-Treas & Gen Mgr—Leon Lidow
Ass't General Manager—J T Cataldo
Purchasing Agent—Claire Behar
Distributor Sales—Allen Nelson

Products
TV & Radio selenium rectifiers; industrial power selenium rectifiers; battery charging rectifiers; selenium diodes; germanium diodes; photoelectric cells; selenium voltage regulators; etc.
Int'l Resistance Co 401 N Broad St Philadelphia 8 Pa
Int'l Register Co 2620 W Washington Blvd Chicago 12 Ill
Irvington Varnish & Insulator 6 Argyle Terr Irvington 11 N J
Isolantite Mfg Corp Warren Ave Stirling N J
I T E Circuit Breaker Co 19 & Hamilton Sts Philadelphia Pa

TECHNICIAN BUYERS DIRECTORY

Jackson Electrical Instr Co 18 S Patterson Blvd Dayton Ohio
JaMac Products Co 4605 N E 118th Ave Portland 20 Ore
James Wirebrap Co 4036 N Rockwell St Chicago 18 Ill
Jan Hardware Mfg Co 75 N 11th St Brooklyn 11 N Y
Jarvis Electronics 6058 W Fullerton Ave Chicago 39 Ill
Job Sales Corp 2016 Bronxdale Ave New York 62 N Y
Jefferson Electric Co 900 25th Ave Bellwood Ill
Jennings Radio Mfg Co P O Box 1278 San Jose 8 Calif
Jensen Mfg Co 6601 S Laramie Ave Chicago 38 Ill
Jensen Industries Inc 329 S Wood St Chicago 12 Ill
Jerrold Electronics 26 & Dickinson Sts Phila 46 Pa
Jersey Specialty Co Burgess Place Mountain View N J
Jewell Inc A W 82 Broad St Elyria 1 Ohio
Telephone Elyria 37154

Brand Name—Sky-Moster
President—Rea Jewell 82 Broad St
Vice Pres—Judy Welch 82 Broad St
Secretary—Page Welch 82 Broad St
Sales Mgr—Albert Jewell 82 Broad St
Chief Engr—A W Jewell 82 Broad St
Plant Mgr—George Jewell 82 Broad St
Products

All Channel Antennas from 2 to 83; Conical Antennas; Corner Reflector UHF Antennas

JFD Mfg Co 6101 16th Ave Brooklyn 4 N Y
President—Julius Finkel
VP—Albert Finkel
Sls Mgr—Edward Finkel
Adv Mgr—James Sarayviotes
Traffic Mgr—Raymond Mastrobuoni
Credit Mgr—Morvin Westin
Export Agt—L L Minthorne Co
Industrial Relations Mgr—Isidore Finkel
Production Mgr—Al Pollock
Trade Names—Baline, Bowtie-Flector, Cascade, Commandair, Corsair, D-Xer, Jetenna, Jetomic, Lightning Sentry, Pace-Setter, Plug-In, Quik-Rig, Ramjet, Safe TV Guard, Sky-Streak, Sky-Top, Standguard, Super-Beam, Superjet, Ultra V-Beam, Bronzidite, PAL, 3-in-1, Tune-A-Scope, Tuner-Tenna, Tele-Plex, Gold Shield
Baltimore-SE—Dave Brothers 3851 Bauman Ave Liberty 9644 Covers Md-Va
Belleville Illinois-SE—Herb E Knoggs 7503 Melba Ave Covers Mo-Neb-Iowa-Kansas
Birmingham Mich-SE—Wayne C Beitel Co 139 W Maple Covers Mich
Boston-SE—Abbott-Hustus Co 1105 Commonwealth Ave Covers Me-NH-Vt-Mass-Rl-Conn
Charlotte-SE—Foy M Howard 2908 Hutchison Ave Covers N Car-S Car-Go Fla-Tenn-Ala-Miss
Chicago-SE—Arnold-Vore Asso 1321 Rosedale Ave Sunnyside 4-5217 Covers Minn-N Dak-S Dak-Wisc

Chicago-SE—George Pettit 549 Washington Blvd Randolph 6-0582 Illinois
Cleveland-SE—Mike Roth Sls Co 13947 Cedar (Road) Covers Ohio-W Va-Pa (Only Erie-Pittsburgh-Beaver Falls-Allouana-New Kensington-Washington)
Colorado Springs-SE—Bill Peyser 1501 N Weber St Covers Colo-Idaho-N Mex-Utah-Wyo-Mont
Columbus Ohio—Robert W Sansbury 908 Grandon Ave Covers Ohio
Dallas-SE—Alex Lassberg of Texport Co 5004 Ross Ave Covers Ark-La-Okla & Texas
Easterly Pa-SE—Thomas Beil Jacksonwald Ave Reading 5-6837 Covers Del-Pa (Only Allentown - Phila - Easton - Lancaster - Scranton - Norristown - Harrisburg - Wilkes-Barre)
Elizabeth-SE—Henry Hold 147 Stiles St c/o Munn Covers NJ-NY
Ferguson Miss—Ed Allred 114 Woodsack Covers Miss
Indianapolis-SE—Charles E Pheasant 18 N Bolton Covers Ind
Jacksonville Florida—James A Eckman 3250 Soutel Drive Covers Fla
Kenmore NY-SE—L J McTaggart 116 Eiseman Ave Los Angeles-SE—Erlanger Sls Co 4217 W Jefferson Blvd Covers Ariz-Cal (Only Alhambra-Bakersfield - Burbank - Glendora - Hollywood - Inglewood - Long Beach - Los Angeles - Pasadena-Riverside - San Diego - San Pedro - Santa Ana - Ventura)
Manlius NY-SE—William Ferguson 117 Fayette St Manlius 2-2692
Mt Vernon NY-SE—Ed Wineblott 61 W Grant St Covers Westchester
Newark-SE—Art Cerf Co 744 Broad St Mitchell 2-6734 Covers NY-Va-Del-Md-Eastern Pa
New York City-SE—Henry Hold, re: Elizabeth, above; and Ed Wineblott re: Mount Vernon, above
Philadelphia-SE—George M Coneen 16 Trent Rd R1 6-3458
Pensacola Florida—William S Primrose 517 No Bayles St Covers Florida
Ridgefield Conn—Walter Hustis P O Box 52 Covers New England
San Francisco-SE—Nickerson & Rudat 381 Branran St Covers Colo-New-Hawaii, North California
Seattle-SE—Ron Merritt 217 9th Ave N SEneca 4948 Covers Mont-Ore-Wash
Export Office—Jack Churchill L L Minthorne Co Inc 15 Moore St NYC All countries except Canada Hawaii and USA
Colgary-SE—R T Millen Millen Durnin Agns Room 2 104—3rd Ave W Covers W Can
Havana-SE—Jose M Espin Calle Obispo 255 Covers Cuba
Toronto-SE—John R. Tilton 1166A Lakeshore Rd Long Branch Toronto 14 Canada Covers E Can
Winnipeg-SE—C E Durnin Millen Durnin Agns 188 King Street Covers W Can
Johnson Co E F Waseca Minn
Jontz Mfg Co 1101 McKinley Mishawaka Ind
Jordan Mfg Co 1100 W 78 Hwy Morris Mich
Kalbfell Labs 1090 Moreno Blvd San Diego 10 Calif
Kaplan Products 180 W Randolph St Chicago 1 Ill
Karyall Body Inc 8221 Clinton Rd Cleveland 9 Ohio
Kato Engineering Co 1415 1st Ave W Mankato Minn
Kay Electric Co 14 Maple Ave Pine Brook N J
Kay-Townes Antenna 1511 Dean Ave Rome Ga
Kearfott Co 1378 Main Ave Clifton N J
Kedman Co 233 S 5th W Salt Lake City 1 Utah
Kelllogg Switchboard 79 W Monroe St Chicago 3 Ill
Kemtron Electronic Products Salem Mass
Kenwood Eng'g Co 265 Colfax Ave Kenilworth N J
Kenyon Transformer Co 840 Barry St Bronx 59 N Y
Kepec Laboratories 131-38 Sanford Ave Flushing 55 N Y
Kester Solder Co 4201 Wrightwood Ave Chicago 39 Ill
Keystone Electronics 423 Broome St New York 13 N Y
K-G Electronics 2738 N Sheffield Ave Chicago 14 Ill
Kirby Products Corp 20 E Herman St Philadelphia 44 Pa
Kleer-Vue Mfg Co 636 Penn Ave Pittsburg 2 Pa
Klein & Sons Mathias 3200 Belmont Ave Chicago 18 Ill
Klipsch & Associates PO Box 64 Hope Ark
Knights Co James Sandwich Ill
Kraft Bros 1299 Jerome Ave New York 52 N Y
Krylon Inc 2038 Washington Ave Philadelphia 46 Pa
Kurman Electric 35-18 37th St Long Island City 1 N Y
Kwikheat Mfg Co 3732 San Fernando Rd Glendale 4 Calif
Lampkin Laboratories Bradenton Fla
Lansing Sound James B 2439 Fletcher Dr L A Calif
LaPointe Electronics Inc W Main St Rockville Conn
Leach Relay Co 5915 Avalon Blvd Los Angeles 3 Calif
Leader Electronics 2925 E 55th St Cleveland 27 Ohio
Leah Inc 11916 W Pico Blvd Los Angeles 64 Calif
Lectrohm Inc 5560 Northwest Hwy Chicago 30 Ill
Lee Electronic Labs 233 Dudley St Boston 19 Mass
Leland Electric Co P O Box 1060 Dayton Ohio
Lenk Mfg Co 30 Cammington St Boston 15 Mass
Lanz Electric Co 1751 N Western Ave Chicago 47 Ill
Lisco Inc 147 Ocean Ave Lynbrook N Y
Linear Enslp Labs Brightwater Place Massapequa N Y
Linell Eng'g Corp C S 447 South Blvd Oak Park Ill
Lipps Eng'g 5485 W Washington Los Angeles Calif
Littlefence Inc 1865 Minner St Des Plaines Ill
Logo Sound 2171 W Washington Blvd Los Angeles 18 Calif
Louis Bros 3543 E 16th St Los Angeles 23 Calif
Lowell Mfg Co 3030 Laeolde Sta Rd St Louis 17 Mo
Luxe Lamp Corp 102 Columbus Ave Tackaboe N Y
Lynn Electronic Res 9 W Magnolia Blvd Burbank Calif
Lytle Eng'g & Mfg Co 105 W Monroe St Chicago 3 Ill

ELECTRICAL—ELECTRONIC TEST EQUIPMENT CHOICE OF THE EXPERTS

McCulpin-Christie 3410 W 67 St Los Angeles 43 Calif
 McCoy Electronics Co Mt Holly Springs Pa
 McIntosh Lab Inc 3200 Water St Binghamton N Y
 Macon Co 3260 Motor Ave Los Angeles 34 Calif
 Magnavox Co Ft Wayne 4 Ind
 Magnevox Inc 225 W Ohio St Chicago 10 Ill
 Malda Development Co 214 Academy St Hampton Va
 Malco Tool & Mfg Co 4025 W Lake St Chicago 24 Ill
 Mallory & Co P R 3029 E Wash St Indianapolis Ind
 Mandex Mfg Co 2608 W 16th St Chicago 8 Ill
 Marathon Battery Co Henrietta St Wausau Wis
 Marine View Electronics 744 E 138 St New York 54 N Y
 Marion Electrical Instrument Co Manchester N H
 Mark Products Co 3549 Montrose Ave Chicago 18 Ill
 Martin & Co H S 1916 Greenleaf St Evanston Ill
 Master Mobile Mounts 1306 Bond St Los Angeles 15 Calif
 Matchless Electric 1700 Washington Blvd Chicago Ill
 Mattison Radio & TV Co 10 W 181st St New York N Y
 Merit Coil & Transformer 4427 N Clark St Chicago 40 Ill
 Meritenna Mfg Co 120 W Thomas St Seattle 99 Wash
 Merix Chemical Co 1021 E 55th St Chicago 15 Ill
 Meters Inc 5353 N Keystone Ave Indianapolis 20 Ind
 Mearns Radio Corp 1087 Flushing Ave Brooklyn 37 N Y
 Michigan Electronics 854 N Rockwell St Chicago 22 Ill
 Mico Instrument 80 Trowbridge St Cambridge 38 Mass
 Micro-Circuits Co New Buffalo Mich
 Micro Switch Div Minneapolis-Honeywell Freeport Ill
 Microtron Co 84-11 Rockaway Beach Blvd Rockaway Beach N Y
 Midwest Naturlite Co 228 W Kinzie St Chicago 10 Ill
 Midwest Radio & TV Corp 909 Broadway Cincinnati 2 Ohio
 Millen Mfg Co James 150 Exchange St Malden 48 Mass
 Miller Electric Co 120 Main St Pawtucket R I
 Miller Electro-Research 5529 S 5th St Milwaukee 7 Wis
 Miller Instr Inc Wm 325 N Halstead Ave Pasadena 8 Calif
 Miller Co J W 5917 S Main St Los Angeles 3 Calif
 Miller Co Sanford 691 Bedford Ave Brooklyn 6 N Y
 Miller Mfg Co M A 4th & Church St Libertyville Ill
 Miller Radio & TV 627 E Maumee St Adrian Mich
 Miller Television Co 2840 Naoml St Burbank Calif
 Milner Mfg Co 4359 Northview Dr Jackson Miss
 Milwaukee Resistor 700 W Virginia St Milwaukee 4 Wis
 Milwaukee Transformer 5231 N Hopkins St Milwaukee 9 Wis
 Minnesota Mining & Mfg 900 Fauquier Ave St Paul 1 Minn
 Mission-Western Engrs 132 W Colorado St Pasadena Calif
 Mitchell Industries Inc Mineral Wells Texas
 Mitchell Rand Insulation 51 Murray St New York 7 N Y
 MI-TEE Midnet Antennas High Point N Car
 Modern-Aire Mfg 4436 W Roosevelt Rd Chicago 24 Ill
 Modern Wire Co 39-30 Revere Ave Long Is City 1 N Y
 Mohawk Plastic Corp 320 River St Fitchburg Mass
 Mole-Richardson 937 N Sycamore Ave Hollywood 38 Calif
 Moody Machine Products 42 Dudley St Providence 5 R I
 Moore Tower & Equip 1221 1st Nat'l Bank Bldg Peoria Ill
 Morrow Radio Mfg Co 2794 Market St Salem Ore
 Mosley Electronics 8622 St Charles Rock Rd St Louis Mo
 Motorola Inc 4545 Augusta Blvd Chicago 51 Ill
 Mueller Electric Co 1583 E 31 St Cleveland 14 Ohio
 Multicore Sales Corp 164 Duane St New York 13 N Y
 Multi-Tron Lab 4624 W Washington Blvd Chicago 44 Ill
 Muter Co 1255 S Michigan Ave Chicago 5 Ill
 Mycalex Corp of America 125 Clifton Blvd Clifton N J

Naor Corp 11777 Santa Monica Blvd Los Angeles 25 Calif
 Nagel-Chase Mfg Co 2811 N Ashland Ave Chicago 13 Ill
 National Carbon Co 30 E 42nd St New York 17 N Y
 National Co 61 Sherman St Malden 48 Mass
 Nat'l Electronic Products 2 Gateway Center Pittsburgh 22 Pa
 Nat'l Electronics of Cleveland Delco Bldg Cleveland Ohio
 National Union Radio Corp Hatboro Pa
 National Video Corp 4300 W 47th St Chicago 32 Ill
 Neal Electronic Co 215 S Green St Huntsville Ala
 NEO Products Corp Erie Mich
 Network Mfg Corp 213 W 5th St Bayonne N J
 Newcomb Audio 6824 Lexington Ave Hollywood 38 Calif
 New York Coil Co Phoenixville Pa
 Ney Co J M Hartford 1 Conn
 Nicholas Equipment Co Bellevue Ohio
 Nichols Products Co 325 W Main St Moorestown N J
 Nichols Wire & Alum 1725 Rockingham Rd Davenport Iowa
 Nihok Tube Co 5000 S Whipple St Chicago 32 Ill
 Norco Mfg Co 392 Bleecker St New York 14 N Y
 North American Model Prods 9802 Warwick Rd Warwick Va
 Northern Products Co 2210 N Clark St Chicago 14 Ill
 North Hills Electric 246 54th Ave Douglass N Y

Ohio Aerlal Co 4553 Lewis Ave Toledo 12 Ohio
 Ohmite Mfg Co 3601 Howard St Skokie Ill
 Olin Industries 275 Winchester Ave New Haven 4 Conn
 Onan & Sons D W 25 & University S E Minneapolis 14 Minn
 OPad-Green Co 71-24 Warren St New York 7 N Y
 ORRadio Industries Inc T-120 Maryn Rd Opelika Ala
 Oxford Electric 3911 S Michigan Ave Chicago 15 Ill

Pacific Transducer 11921 W Pico Blvd Los Angeles Calif
 Parker-Kalon 200 Varick St New York 14 N Y
 Parker Metal Goods 161-A Summer St Worcester 8 Mass
 Parkside Wire Francisco & Irving Pk Rd Chicago Ill
 Par-Metal Products 32-62 49th St Long Island City 3 N Y
 Pathfinder Electronics 6836 Lexington Los Angeles Calif
 Pay Engineering Labs Box 61 Quincy Ill
 Peerless Elec Prods 9356 Santa Monica Beverly Hills Calif
 Peerless Products Ind 812 N Putaski Rd Chicago 51 Ill
 Peirce Wire Recorder 5900 N Northwest Hwy Chicago Ill
 Penn Bolter & Burner Mfg Corp Lancaster Pa
 Penn Tran Corp Bellefonte Pa
 Penn TV Prods Allegheny & Trenton Aves Philadelphia Pa
 Penton Corp 221 E Callerton Ave Chicago 16 Ill
 Pennwood Numechron 7249 Frankstown Ave Pittsburgh 8 Pa
 Perfection Electric Co 2535 S Wabash Ave Chicago 16 Ill
 Perma-Power Co 4727 N Damen St Chicago 25 Ill
 Permo Inc 6415 Ravenswood Ave Chicago 26 Ill

PermoLux Corp 4900 W Grand Ave Chicago 39 Ill
 Peschel Electronics Inc 13 Garden St New Rochelle N Y
 Pfanstahl Chemical Co 104 Lake View Ave Waukegan Ill
 Phalo Plastics Corp 25 Foster St Worcester 8 Mass
 Phelps Dodge Copper Prods Corp 40 Wall St N Y 5 N Y
 Philco Corp "A" & Allegheny Ave Philadelphia 34 Pa
 Phillips Mfg Co 2816 Aldrich Ave S Minneapolis 8 Minn
 Philmore Mfg Co 113 University Pl New York 3 N Y
 Philson Mfg Co 60 Sackett St Brooklyn 31 N Y
 Phoenix Electronics Inc 50 Island St Lawrence Mass
 Photoelectrics Corp New St Glen Cove N Y
 Physical Research Assoc 1 Azuleiro Dr Malibu Calif
 Pickering & Co 309 Woods Ave Oceanide N Y
 Pilot Radio Corp 37-06 36th St Long Island City 1 N Y
 Pioneer Mfg Co Huntley Ill
 Pipestone Sales Co P O Box 311 Pipestone Minn
 Planet Mfg Corp 225 Belleville Ave Bloomfield N J
 Plastic Capacitors 2511 W Moffat St Chicago 47 Ill
 Plastic Wire & Cable Co Jewett City Conn
 Plasti-Kote 425 Lakeside Ave N W Cleveland 13 Ohio
 Plastom Corp 42-61 24th St Long Island City 1 N Y
 Plymouth Electronics 50 Kingsbury St Worcester 3 Mass
 Polyken Prods Dept Kendall Co 222 W Adams Chicago Ill
 Pomona Electronics Co 524 W 5 Ave Pomona Calif
 Porcelain Products Inc P O Box 300 Findlay Ohio
 Potter & Brumfield Princeton Ind
 Power Transformer Co 532 Malberry St Newark 5 N J
 Precise Development 999 Long Beach Rd Oceanide N Y
 Precise Measurements Co 942 Kings Hwy Brooklyn 23 N Y
 Precision Apparatus 92-27 N Harding Blvd Elmhurst N Y
 Precision Electronics 9101 King Ave Franklin Park Ill
 Premier Metal Products 3160 Webster Ave New York N Y
 Pres Probe Co 4034 N 6th St Milwaukee 2 Wis
 Presto Recording Corp P O Box 500 Paramus N J
 Pyramid Electric Co 1445 Hudson Blvd N Bergen N J
 Pyramid Instrument Corp 630 Merrick Rd Lynbrook N Y
 Pyrometer Instrument Co Bergenfield N J

Q-Line Mfg Corp 1562 61st St Brooklyn 19 N Y
 Quam-Nichols Marquette & Prairie Ave Chicago 37 Ill
 Quetralco Co 395 St John St Spartanburg S C
 Quincy Speaker Mfg Corp 221 Oak St Quincy Ill

Racon Elec Co 52 E 19th St New York 3 N Y
 Radeco Mfg Co 7580 Garfield Blvd Cleveland 25 Ohio
 Radiart Corp 3455 Vega Ave Cleveland 13 Ohio
 Radlaphone Co 600 E Evergreen Ave Monrovia Calif
 Radio City Products Co 101 W 31 St New York 1 N Y
 RCA Victor Div Radio Corp of America Camden N J

RCA Victor Division Radio Corp of America Harrison N J
 R T Orth—Vice President
 D Y Smith—General Marketing Manager
 L F Holleran—Sales Manager
 H F Borsche—Manager Distributor Sales
 Distributor Sales Regional Sales Offices:
 Northeastern District—RCA Room 2301 200 Berkeley St Boston Mass Hubbard 2-1700
 Eastern District—RCA 36 W 49th St New York NY Circle 6-4030
 Southeastern District—RCA 522-33 Forsyth Bldg Forsyth & Luckie Sts NW Atlanta Ga Walnut 5948
 East Central District—RCA 718 Keith Bldg 1621 Euclid Ave Cleveland Ohio Chery 1-3450
 Central District—RCA 666 N Lake Shore Dr Chicago Ill Delaware 7-0700
 West Central District—RCA 340 Dierks Bldg 1006 Grand Ave Kansas City Mo Harrison 6480
 Southwestern District—RCA 1907-11 McKinney Ave Dallas Texas Riverside 1371
 Western District—RCA 1560 N Vine St Hollywood Calif Hollywood 9-2154

Radio Craftsmen Inc 4401 N Ravenswood Ave Chicago Ill
 Radio Eng'g Labs 36-40 37th St Long Island City 1 N Y
 Radio Materials Corp 3325 N Calif Ave Chicago Ill
 Radio Merchandise Sales 2016 Broadway Ave N Y N Y
 Radio Music Corp 84 S Water St Port Chester N Y
 Radion Corp 1130 W Wisconsin Ave Chicago 14 Ill
 Radio Receptor Co 251 W 19th St New York 11 N Y
 RAM Electronics Sales Co S Backshot St Irvington N Y
 Ramsey Radio & TV Co 925 St Louis Ave Vandalla Ill
 Rangertone Inc 73 Winthrop St Newark 4 N J
 Rapid Electric Co 2881 Middletown Rd New York 51 N Y
 Rare Earths Inc Box 488 Pompton Plains N J
 Rastand Corp 4245 N Knox Ave Chicago 41 Ill
 Ray-C-Vac Co 212 E Washington Ave Madison 10 Wis
 Ray-Par Inc 7810 W Addison St Chicago 13 Ill
 Raytheon Mfg Co 55 Chapel St Newton 58 Mass (Receiving Tube Division)

Atlanta-R—F C Nickerson Co 1133 Ponce de Leon Ave NE Atwood 2736 Covers N & 5 Car-Ga-E Fla
 Boston-R—Arthur E. Akeroyd John Hancock Bldg Rm 2311 Hancock 6-2433 Covers Mo-NH-VI-Conn-Mass-R
 Buffalo-R—Art Cerf & Co L J McTaggart 116 Eise-man Ave Kenmore 17 NY Buffalo Riverside 1009 Covers Western NY state
 Chicago Ill-R—E Ralph Haines 949 Lake St Oak Park Ill Euclid 6-4476 Covers E Wis-Ill
 Cleveland-R—Neal Bear Corp 3435 Streetsboro Road 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-R—Neal Bear Corp R E Whelan 1110 Broad St
 Denver-R—Ronald G Bowen & Co 446 Broadway Sherman 2501 Covers E Mont-Wyo-Utah-Colo-N Mex
 Des Moines-R—Kay Sales Co Ralph Sharpe 3807 Adams St DEs Moines 5-4584

Detroit-R—K C Burcaw Co Suite 207 22128 Grand River Ave Kenwood 3-7700 Covers Michigan
 Kansas City-R—Kay Sales Co 3760 Broadway L'Oran 7640 Covers Neb-Iowa-Mo-Kan-Ark-Okla
 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-N W Fla
 Minneapolis-R—Fred B Hill Co 6110 Excelsior Blvd MOhawk 9-6727 Covers N & S Dak-Minn-W Wis
 Philadelphia-R—L D Lowery Inc 50 E Wynnewood Rd Wynnewood Midway 2-9100, 9101, 9102 Covers E Penna-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—Harold L Newman 420 Market St Yukon 6-3897 Covers N Cal-Nev
 Seattle-R—Don H Burcham Co R M Loughrey 1327 Norcross Way
 Syracuse-R—Art Cerf & Co William Ferguson 117 Fayette St Manlius NY Manlius 2-3301 Covers E NY State
 Toronto-R—John S Plewes Co 52 Humbercrest Blvd Junction 2051 Covers Quebec Ont
 Raytheon Mfg Co Equip Sales 100 River St Waltham Mass
 Raytheon Mfg Co 452 Pleasant St Watertown Mass
 Recora Co 56 W 103rd St Chicago 28 Ill
 Recordisco Corp 395 Broadway New York 13 N Y
 Reclon Corp 147 W 22 St New York 11 N Y
 Reed & Prince Mfg Co 1 Duncan Ave Worcester 1 Mass
 Reeves Soundcraft Corp 10 E 52 St New York 22 N Y
 Regency Div IDEA 7900 Pendleton Pike Indianapolis Ind
 Rego Insulated Wire Co 830 Monroe St Hoboken N J
 Rek-O-Kut Co 38-01 Queens Blvd Long Island City 1 N Y
 Reon Resistor Corp 117 Stanley Ave Yonkers N Y
 Resistance Products Co 714 Race St Harrisburg Pa
 Restlors Inc 5226 W 26 St Chicago 50 Ill
 Revere Camera Co 320 E 21 St Chicago 16 Ill
 Revere Corp of America Wallingford Conn
 Rex Electronics 1351 De Loss St Indianapolis 3 Ind
 Rhodes & Sons 12 Porter St Taunton Mass
 Rite-Lite Mfg Co 3243 W Lawrence Ave Chicago 25 Ill
 River Edge Industries 5 River Edge Rd River Edge N J
 R J Audio Products 164 Duane St New York 13 N Y
 R K Mfg Co Box 112 Marion Ill
 Roanwell Corp 662 Pacific St Brooklyn 17 N Y
 Rogers Electronic Corp 49 Bleecker St New York 12 N Y
 Bohn Mfg Co 116 Limestone Bellevue Peoria Ill
 Romar Plastics Inc 1311 E Main St St Charles Ill
 Rowe Industries 1702 Wayne St Toledo 9 Ohio
 Royal Diamond Tool Co 172 Grant St Boston 3 Mass
 Runzel Cord & Wire 4727 Montrose Ave Chicago 41 Ill
 Russell Speaker Co 6158 S Kedzie Ave Chicago Ill
 Ryan Industries 10910 S Vermont Ave Los Angeles Calif
 Rytel Electronics Mfg 9820 Irwin Ave Inglewood Calif

Flickox
 ELECTRICAL—ELECTRONIC
 TEST EQUIPMENT
 CHOICE OF THE EXPERTS

Sampson Chemical & Pigment 2830 W Lake St Chicago Ill
 Sangamo Electric Co Box 7 Marion Ill
 Sargent-Raymont 1401 Middle Harbor Oakland 20 Calif
 Saxtonburg Ceramics Saxtonburg Pa
 Saxton Products Inc 2101 Grand Concourse Bronx 53 N Y
 Scala Radio Co 2834 19th St San Francisco 10 Calif
 Schauer Mfg Corp 4500 Alpine Ave Cincinnati 36 Ohio
 Scott Inc Herman Hosmer 385 Putman Ave Cambridge Mass
 Seranton Aluminum Mfg 419 S Wyoming Ave Seranton Pa
 Self-Lifting Plano Truck Co Findlay Ohio
 Sequola Process Corp 871 Willow St Redwood City Calif
 Service Instrument 422 S Dearborn St Chicago 5 Ill
 Service Parts Systems 13380 E 9 Mile Rd E Detroit Mich
 Service Welding Co Cedar Grove Wis
 Sessions Clock Co Forestville Conn
 Setchell Carlson 330 5th Ave N W New Brighton 12 Minn
 Shallcross Mfg Co 520 Pusey Ave Collingdale Pa
 Sheldon Electric Co 68-98 Colt St Irvington N J
 Shura-Tone Products Inc 440 Adelphi St Brooklyn N Y
 Shure Bros 225 W Huron St Chicago 10 Ill
 Sickles F W Div Corp P O Box 330 Chicopee Mass
 Sightmaster Corp 111 Cedar St New Rochelle N Y
 Signalite Inc 37-41 Neptune Hwy Neptane N J
 Silicone Spray Products 3514 Lee Rd Cleveland 22 Ohio
 Simpson Electric Co 5216 Kinzie St Chicago 44 Ill
 Simpson Mfg Co Mark 32-28 49 St Long Island City N Y
 Sittler Corp 18 N Ada St Chicago 7 Ill
 Skittle Electronics Inc 731 Pleasant Ave Peekville Pa
 Skyline Mfg Co 1652 Rockwell Cleveland 14 Ohio
 Smithquild Inc 360 W 8th St Erie 2 Pa
 Smith Heat Treating 5865 Wilmington Ave Los Angeles Cal
 Smith Inc Herman H 2326 Nostrand Ave Brooklyn 10 M Y
 Smith-Meeker Eng'g Co 157 Chambers St New York 7 N Y
 Snap-On Tools Corp 8104 28th Ave Kenosha Wis
 SNC Mfg Co P O Box 277 Oshkosh Wis
 Snyder Mfg Co 22nd & Ontario Sts Philadelphia 40 Pa
 Sola Electric Co 4633 W 16th St Chicago 50 Ill
 Sonic Recording Products Inc 58 Mill Rd Freeport N Y
 Sonotone Corp P O Box 200 Elmford N Y
 Soraban Eng'g Inc Box 117 Melbourne Fla
 SOS Cinema Supply Corp 602 W 52nd St New York 19 N Y
 Southern Industries 1401 Reisterstown Rd Baltimore 8 Md
 South River Metal Prod Co 377 Timpale S River N Y
 Spaulding Products Co Tipton Ind
 Speak-O-Phone Recording & Equip Co 23 W 60th St NY NY
 Special Instruments Lab 312 W Vine St Knoxville Tenn
 Spirline Products Co P O Box 411 Hicksville L I N Y

Flickox
 ELECTRICAL—ELECTRONIC
 TEST EQUIPMENT
 CHOICE OF THE EXPERTS

Flicks

**ELECTRICAL—ELECTRONIC
TEST EQUIPMENT
CHOICE OF THE EXPERTS**

Sprague Products Co N Adams Mass
Standard-Hoffman 921 N Highland Ave Hollywood 38 Calif
Standard Coil Prods 2085 N Hawthorne Melrose Park Ill
Standard Electrical Prods 2240 E 3rd St Dayton 3 Ohio
Standard Piezo Co P O Box 513 Carlisle Pa
Standard Pressed Steel Co Box 164 Jenkintown Pa
Star Expansion Products 147 Cedar St New York 6 N Y
Star Fuse Co 235 Canal St New York 13 N Y
Star Stainless Screw Co 190 Union Ave Paterson 1 N J
Stephens Mfg Corp 8538 Warner Drive Culver City Calif
Sterling Mfg Co 7201 Wentworth Ave Cleveland 2 Ohio
Stevens Products Inc 86 Main St E Orange N J
Stevens Warden 300 Shrewsbury St Worcester 4 Mass
Stone City Machine & Tool 1206 7th St Bedford Ind
Strasdale Mfg Co 3039 W Fullerton Ave Chicago 47 Ill
Stromberg-Carlson 1225 Clifford Ave Rochester N Y
Summit Eng'g Co 3324 Main St Hartford Conn
Supertex Electronics Corp 23 Atherton St Yonkers N Y
Superior Instrument Co 227 Fulton St New York N Y
Supreme Inc Greenwood Miss
Sutton Electronic Co 426 W Short St Lexington Ky
Switchcraft Inc 1328 N Halsted St Chicago 22 Ill
Sylvania Electric Prods Inc 1740 Bdw New York 19 N Y

Tabet Mfg Co 1336 Ballentine Blvd Norfolk 1 Va
Talk-A-Phone Co 1512 S Pulaski Rd Chicago 23 Ill
Tarkian Inc Sarkes E Hillside Bloomington Ind
Taylor Tubes Inc 2312 Wabasha Ave Chicago 47 Ill
Tech Master Corp 443 Broadway New York 13 N Y
Technical Appliance Corp 1 Taco St Sherburne N Y
President—H H Brown
Vice Pres Sales—Tore Lundahl
Vice Pres Eng—Kendrick Lippitt
Sales Pra Mgr—Fred R Voorhaar
Credit Mgr—William H Resch
Chairman of Board—Carl Gaudy
Purchasing Agent—Harold Senkel
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 Branum 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
Greensboro-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 E 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, Bridgeville 2083
San Francisco-IDS—David H Ross Co 534 El
Camino Real LYell 3-8224
Seattle-IDS—James J Backer Co 2321 Second Ave
Main 8811
Syracuse-IDS—Leonard D Allen Inc 2401 S State St
Phone 4-4195
Toronto-IDS—Hackbusch Electronics Ltd 23 Primrose
Ave Melrose 2453
Washington-IDS—Samuel K Macdonald Inc 217
Riggs Bank Bldg 3308 14th St NW Columbia
5-3938

Technicraft Co 1156 Commonwealth Ave Boston 34 Mass
Tech-OHM Resistor Corp 200-15 32nd Ave Bayside N Y
Tektronix Inc P O Box 831 Portland 7 Ore
Tel-A-Ray Enterprises Inc Box 332 Henderson Ky
Tele-Beam Industries 6th & Sascow Ave Napa Calif
Telechrome Mfg Corp 88 Merrick Rd Amityville N Y
Teleronics Corp 35-18 37 St Long Island City 1 N Y
Telo-Ex-Pand Corp Pine & 4th Sts Berwick Pa
Telo King Corp 601 W 26th St New York 1 N Y
Telo-Watt Industries 1 Joramleon St Brooklyn 1 N Y
Telo Plastics Co 202 Broadway Brooklyn 11 N Y
Telsina Antenna Corp 3421 Terry Rd Jackson 3 Miss
Telorex Co P O Box 101 Riverdale Station N Y 71 N Y
Television Co of America 1 Azules Dr Mailbu Calif
Television Labs Inc 1111 St Wanda III
Television Remota Control 820 N Fairfax Los Angeles Calif
Telo-Vee Towers Inc Erskine Minn
Telex Inc 1633 Euclid St St Paul 1 Minn
Telcor Inc Telegraph Rd Elyria Ohio
Telonic Industries 444 S Rural St Indianapolis 1 Ind
Tel-O-Tape Corp 180 Van Riper Ave E Paterson N J
Telrex Inc Asbury Park N J
Tempil Corp 11 W 25th St New York 11 N Y
Tempo T-V Mfg Corp 100 Prospect Ave Burbank Calif
Tennalab Quinley Ill
Tenna Trailer Co 321 Plum St Pontiac Ill
Tensitron Inc Pln Hill Harvard Mass
Terado Co 1068 Raymond Ave St Paul 14 Minn

Tetrad Co 62 St Mary St Yonkers 2 N Y
Texas Instruments Inc 6000 Lemmon Ave Dallas 9 Texas
Thermador Elec Mfg 2000 S Camfield Ave Los Angeles Calif
Thomais Associates 4607 Alger St Los Angeles 39 Calif
Thomas & Betts 36 Butler St Elizabeth 1 N J
Thomas Electronics Inc 118 9th St Passic N J
Thomas Mold & Die Co Henry & Grant St Wooster Ohio
Thompson Products 2196 Clarkwood Rd Cleveland 3 Ohio
Thordarson-Weissner 7th & Belmont Sts Mt Carmel Ill
Tibbetts Industries Colcord Ave Camden Me
Tinnerman Products P O Box 6688 Cleveland 1 Ohio
Todd Products Co 156 Gramatan Ave Mt Vernon N Y
Todd-Tran Corp 156 Gramatan Ave Mt Vernon N Y
Toman & Co E 8700 W 47th St Lyons Ill
Transformer Metal Prod Inc 343 W 26th St New York N Y
Transistor Products Snow & Union Sts Boston 35 Mass
Triad Transformer Corp 4055 Redwood Ave Venice Calif
Trico Fuse Mfg 2948 N 5 St Milwaukee Wis
Tricraft Products 1535 N Ashland Ave Chicago 22 Ill
Trimmm Inc 400 W Lake St Libertyville Ill
Trio Mfg Co Griggsville Ill
Triplet Electrical Instr Co Harmon Rd Bluffton Ohio
Triwac Transformer 3261 N Milwaukee Ave Chicago 12 Ill
Trojan Electronics 3706 N Halsted St Chicago 13 Ill
Tru-Ohm Products 2800 N Milwaukee Ave Chicago Ill
Tru-Pine Co 7638 Vincennes Ave Chicago 20 Ill
Tru-Tronics Mfg Co 609 W Fulton St Chicago 6 Ill
Tung-Sol Electric Inc 95 8th Ave Newark 4 N J
Turner Co 909 17th St NE Cedar Rapids Iowa
TV Development Corp 2024 McDonald Ave Bklyn 23 N Y
T-V Prods Co 145-68 228 St Springfield Gardens 13 N Y

UHF Resonator Co 224 7th St Racine Wis
U M & F Mfg Corp 10929 Van Own St N Hollywood Calif
Ungar Electric Tools 4101 Redwood Ave Venice Calif
United Condenser Corp 3400 Park Ave New York 56 N Y
United Electric Controls 85 School St Watertown 72 Mass
United Electronic Mfg 542 39 St Union City N J
United Screw & Bolt 2513 W Cullerton St Chicago 8 Ill
United Technical Labs Morristown N J
United Transformer Co 150 Varick St New York N Y
U S Products Inc 1549 Hutchins St Columbus Ind
U S Recording Co 1121 Vermont Ave N W Washington DC
U S Wire & Cable Progress & Monroe Sts Union N J
Universal Microphone 424 Warren Lana Inglewood Calif
Universal Motor Co 465 Universal Dr Oakshosh Wis
Universal Products 4100 Taylor Ave Racine Wis
University Loudspeakers 80 S Kenosia Ave White Plains N Y
Univox Corp 102 Warren St New York N Y
Utah Radio Prods Co 1123 E Franklin St Huntington Ind
Utica Drop Forge & Tool 2415 Whitesboro St Utica 4 N Y

**TECHNICIAN
BUYERS DIRECTORY**

Vaco Products Co 317 E Ontario Chicago 11 Ill
Valentini Inc Thomas J 150 W 46th St New York 36 N Y
Valley Industries Inc P O Box 362 Algonquin Ill
Valpey Crystal Corp 1244 Highland St Hillston Mass
Van Cleef Bros 7800 Woodlawn Ave Chicago 19 Ill
Vanity Fair Electronics 50 S 4th St Brooklyn 11 N Y
Varleon Corp 65 Hope St Brooklyn 11 N Y
Vector Electronic 3352 San Fernando Rd Los Angeles Calif
Vemaline Products Co P O Box 222 Hawthorne 1 N J
Vesto Co 20th & Clay Sts N Kansas City Mo
Victor Electric Wire & Cable 64 Ackerman Ave Clifton, N J
Victor Insulators Inc Maple Ave Victor N Y
Vidaltre Electronics 576 W Merrick Rd Lynbrook N Y
Video Accessory Mfg Co P O Box 223 Tulsa 1 Okla
Video Industries Co 42 Palmer Place Port Chester N Y
Videon Electronic Corp 902 E Mich St Indianapolis 2 Ind
Visulite Co 423 Broome St New York 13 N Y
V-M Corp Benton Harbor Mich
Vocaline Co of America Coulter St Old Saybrook Conn
Vokzr Corp Huron River Dr Dexter Mich
Vulcan Electric Co 88 Holten St Danvers Mass

Denver—Wm H Cannars Co 5532 East Colfax Fre-
mont 0566 Covers Colorado; Idaho; Montana;
Scottsby Nebraska; Utah; Wyoming
Detroit—Grant Shaffer Co 16267 James Couzens
Highway UNIVERSITY 3-1227 Covers Michigan
Flushing—Mike Walfe 136-52 71 Road
Fort Wayne—Southern Sales Co 1605 Lincoln Tower
ANithony 5278 Covers Indiana; Kentucky
Jersey City—Adolph Schwartz Co One Exchange
Place Delaware 3-2424-25 Covers Delaware;
Maryland; New Jersey; New York City; East
Pa; Washington D C
Kansas City Mo—R W Farris Co 406 W 34 St
LOgan 7495 Covers Alton Belleville Berto &
St. Jacob Illinois; Iowa; Kansas; Missouri; Ne-
braska—except Scottsby.
Los Angeles—Barron-Jur Co P O Box 653 Encina
California DUNKirk 3-5248 Covers South Calif-
ornia
Memphis—Cartwright & Bean 1336 Madison Ave
Covers Arkansas; Louisiana; Mississippi; Ten-
nessee; Virginia
Minneapolis—Bill Bartleson Co Suite 612 330 Oak
Grove ATlanric 6709 Covers Minnesota; North
Dakota; South Dakota; West Wisconsin
Phoenix—H Geo Sheffer Co P O Box 1587 Tel
2-4487 Covers Arizona; Nevada; New Mexico;
El Paso Texas
Portland Ore—James W Eckerley 950 S W 21 St
Covers Oregon; Washington
Rochester—Wolf-Marsey Sales Co 74 Park Ave
MOnroe 6228 Covers New York State; Erie
Pennsylvania
San Francisco—Arnold A Sinai 65 9th St UNderhill
1-6259 Covers North Calif
Toronto—Atlas Radio Corp Ltd 560 King St West
Waverly 4761 Covers Canada
Warren Corp 21 Hanse Ave Freeport N Y
Wasco Electric Products 126 W Cass St Joliet Ill
Waterman Products 2445 Emerald St Philadelphia 25 Pa
Waterproof Electric Co 801 S Main St Burbank Calif
Weathers Industries 66 E Gloucester Pike Barrington 6 N J
Webster-Chicago 5610 W Bloomingdale Ave Chicago 39 Ill
Webster Electric Co 1900 Clark St Racine Wis
Welch Mfg Co W M 1515 Sedgwick St Chicago 10 Ill
Welco Mfg Co 802 Washington St Burlington Iowa
Weller Electric Corp 808 Packer St Easton Pa
Wen Products Inc 5806 Northwest Hwy Chicago 31 Ill
Western Coil & Electrical 215 State St Racine Wis
Westinghouse Electric Corp Electronic Tube Div Elmira N Y
Weston Elec Instr 614 Freilinghuysen Ave Newark 5 N J
Weston Labs Harvard Mass
Wheatland Tube Co Bankers Securitles Bldg Phila 7 Pa
Wheeler Insulated Wire 150 E Aurora St Waterbury, Conn
Whitaker Cable 1301 Burlington Ave N Kansas City 16 Mo
Whitney Blaka Co 1565 Dixwell Ave New Haven 14 Conn
Wilco Corp 546 Drovers St Indianapolis 21 Ind
Wileox-Gay Corp Charlotte Mich
Willard Storage Battery 246 E 131st St Cleveland 1 Ohio
Wilmar Mfg Co 2715 E 14th St Kansas City 27 Mo
Wincharger Corp E 7th & Division Sts Sioux City 2 Iowa
Wind Turbine Co E Market St & P R R W Chester Pa
Winegard Co 3000 Scadden Blvd Burlington Iowa
Winpower Mfg Co 1207 1st Ave E Newton Iowa
Wirt Co 5221 Greene St Philadelphia 44 Pa
Witelrad Electrical Mfg 76 Pulaski St Stamford Conn
Workman TV Inc 309 Queen Anne Rd Teaneck N J
Wright Inc 2235 University Ave St Paul Minn
Wright Steel & Wire 243 Stafford St Worcester 3 Mass
Wright-Zimmerman Inc 330 5th Ave New Brighton Minn
Wunderlich Radio Co 2 5th Ave New York 11 N Y

Xcelite Thorne Ave & Bank St Orchard Park N Y

Yonkers Industries Inc 28 School St Yonkers N Y

Zierlick Mfg Beghwood & Rockdale New Rochelle N Y

Aretco Inc.
The Versatile Family of TV Antennas

The following symbols in the
localizer listings after the name
of each city indicate the type of
representatives in a particular
area.

DS Distributor Sales
IS Industrial Sales
IDS Indus & Distr Sales
D Distributor
BO Branch Office
GV Government Sales
R Representative
SE Sales Engineer

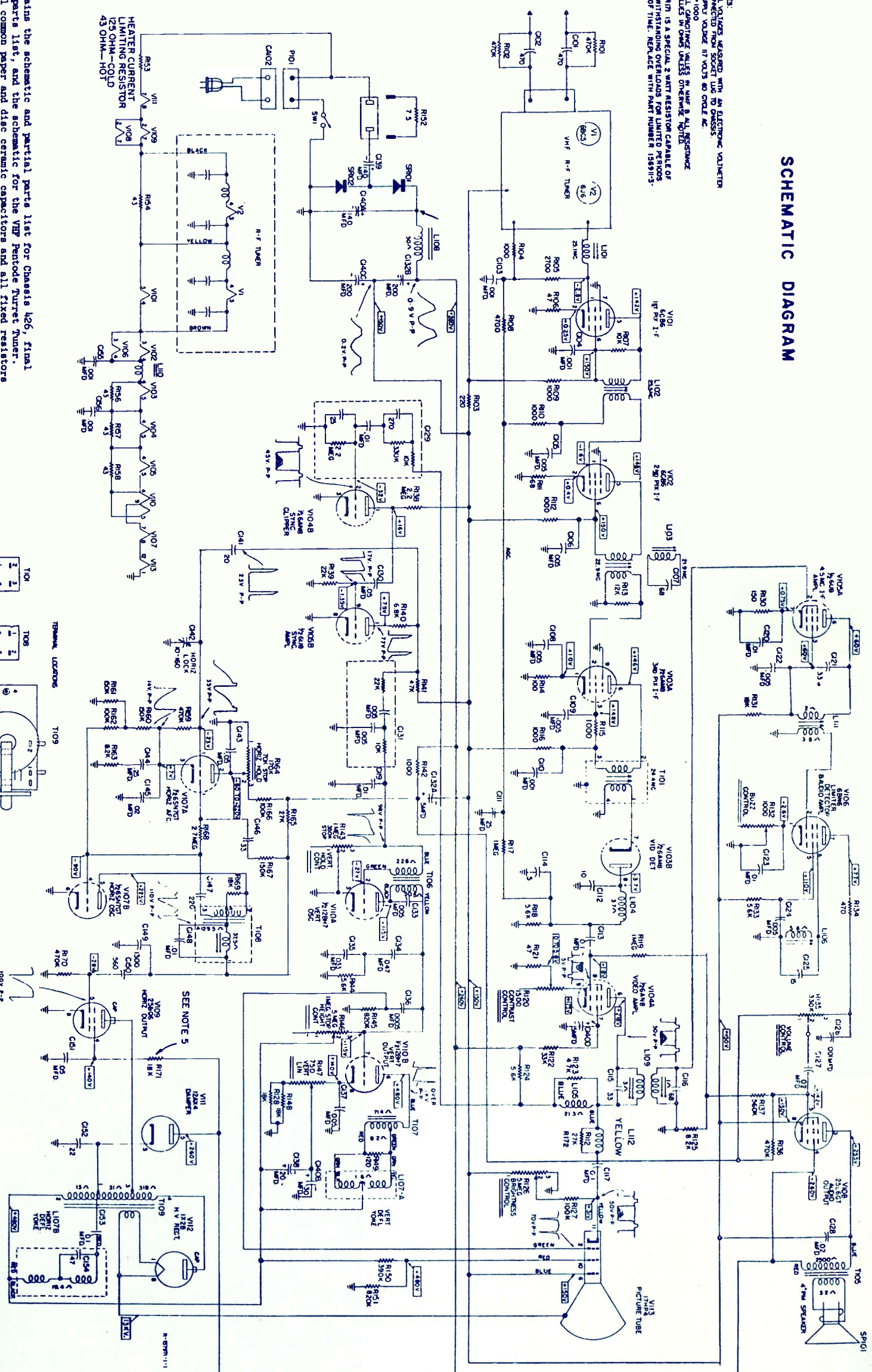
Flicks

**ELECTRICAL—ELECTRONIC
TEST EQUIPMENT
CHOICE OF THE EXPERTS**

Waldom Electronics Inc 4625 W 53rd St Chicago 32 Ill
Wallace Supplies Mfg 1300 Diversy Pkwy Chicago 14 Ill
Wall Mfg Co P O Box 71 Grove City Pa
Walnut Machine Co National Bank Bldg S Bond Ind
Waliso Electronics 3225 Exposition Pl Los Angeles Calif
Ward Leonard 115 MacQuesten Pkwy S Mt Vernon N Y
Ward Products Corp 1148 Euclid Ave Cleveland 15 Ohio
Atlanta—Maitland K Smith Co 317 Forrest Ave
WALnut 6094 Covers Alabama; Florida; Geo-
rgia; North Carolina; South Carolina
Boston—Anderson Sales Co 177 State St CAPitol
7-2980 Covers Connecticut; Maine; Massachu-
setts; New Hampshire; Rhode Island; Vermont
Chicago—William M Linz Co 7115 North Mobile
RO 3-3326 Covers Illinois; East Wisconsin
Columbus—C L Pugh Co 45 Dublin Road Kingswood
4855 Covers Ohio; West Pa; West Virginia
Dallas—Crackett-Lund Co 2204 Griffin St Covers
Oklahoma; Texas—except El Paso; Tex-
Arkana-Ark

SCHEMATIC DIAGRAM

- 1. ALL VOLTAGE MEASUREMENTS WITH AN ELECTRONIC VOLTMETER CONNECTED FROM SOCKET LUG TO GROUND.
- 2. 500V VOLTAGE IN 7 VOLTS AC CIRCLE AC.
- 3. 1.000
- 4. ALL CAPACITANCE VALUES IN MICRO FARADS UNLESS OTHERWISE NOTED.
- 5. RFI IS A SPECIAL 2 WATT RESISTOR CAPABLE OF WITHSTANDING OVERLOADS FOR LIMITED PERIODS OF TIME. REPLACE WITH PART NUMBER 1589113.



This information contains the schematic and partial parts list for Chassis 426, final assembly and cabinet parts list, and the schematic for the VHF Pentode Tuner. In the parts list, all common paper and disc ceramic capacitors and all fixed resistors have been omitted.

UHF strips for the Pentode Tuner are marked with the channel number and the letter "H". They are available in pairs under part number 158023-*. Only strips marked "H" can be used in the tuner. Replacement coils for VHF operation are available separately under part number 158021-* for the Antenna Coil Assembly, and part number 158022-* for the RF and Oscillator Coil Assembly.

*Dash numbers indicate the channel number desired. Example: 158023-43, UHF Strips (one pair) for Channel 43.

A bulletin containing schematics and full parts lists, including alignment and UHF tuner schematic, will soon be available in permanent form, superseding this information.

NOTE: Do not have the receiver turned on when any tube is removed from its socket. Failure to observe this precaution may cause damage to another tube filament.

Chassis 426: Models
G-1770M, G-1770B, G-1770H

Technician
CIRCUIT DIGEST
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The quieting control is located on the back of the receiver and is adjusted by means of a screw-driver inserted through the hole in the back cover. This control, which determines the AM rejection characteristics of the sound system, is normally adjusted during alignment of the sound system as

Classis Assembly V-2263

Several variations of the V-2263 chassis are used in current production. The differences will be found in the type of VHF tuner used and method by which the VHF tuner is coupled to the first IF stage. Figure 14 is a complete schematic diagram of the V-2263-12 chassis which uses a V-12400-1 UHF tuner assembly. Schematic diagrams of the other VHF tuner assemblies are shown in Figs. 13, 15 and 17. The following chart identifies the variations of the V-2263 chassis and the type of VHF tuner used.

CHASSIS NUMBER	VHF TUNER
V-2263-11	V-11794-1 - 16 position Capacity coupling
V-2263-12	V-12400-1 - 16 position Capacity coupling
V-2263-13	V-12100-1 - 13 position Link coupling
V-2263-14	V-12415-1 - 12 position Capacity coupling

HORIZONTAL RINGING COIL

The horizontal ringing coil (L400) should be adjusted as follows:

1. Short out the ringing coil with a short jumper wire.
2. Set the horizontal hold control to the middle of its range, and leave it in this position during the steps that follow.
3. Connect a VTVM to the pin #2 grid circuit of the horizontal multivibrator, so as to measure the DC voltage between this point and ground.
4. With the receiver tuned to a TV station, adjust C121 (located on the rear of the chassis) for zero voltage on the meter. If zero voltage can be approached but not quite reached at one extreme of the C421 adjustment, it may be necessary to set the horizontal hold control slightly to one side of mid-position to obtain zero voltage.

5. Remove the jumper from across the ringing coil.
6. Adjust the ringing coil for zero voltage on the meter, and check the adjustment by switching to another channel and then back again. The receiver should pull into horizontal synchronization on all channels.

AGC CONTROL

Allow the receiver to warm up for at least five minutes before adjusting the AGC control. With the receiver tuned to the strongest signal in the area, rotate the AGC control clockwise until the receiver begins to overload or, if the signal is weak, until snow on the picture becomes more pronounced. Then rotate the control counterclockwise to the position where the best picture with minimum snow and no sign of overload is obtained. Make certain that overload does not occur on any channel. If evidence of overload is noticed, rotate the AGC control counterclockwise until the condition disappears.

It is recommended that the strongest signal in the area be used when adjusting the AGC control. If a weak signal is used during the adjustment, the control may be set too far in a clockwise direction to permit reception of a strong signal without overload.

SECOND DETECTOR LOCATION

The second detector (1N64 or CK706 crystal) and its associated components are located in the 3rd IF transformer shield can. The crystal, L304 and C112 can be replaced without installing an entire new 3rd IF transformer assembly. The replacement should be exactly the same as the original part. This applies to both its electrical characteristics and physical dimensions.

CRITICAL LEAD DRESS

All leads located near the horizontal multivibrator trimmer capacitor, C421, must be dressed away from the capacitor and close to the chassis. All resistors rated above one watt must be dressed away from each other and clear of other wires and components.

Video peaking coils should be dressed away from the chassis and clear of adjacent parts. All leads in the high voltage transformer to prevent arcing. Keep all leads in the IF and video circuits as short as possible.

REFLECTION ELIMINATION

Light reflection from the pilot lamp can appear on the lower right hand corner of the CRT and the safety glass unless preventive measures are taken. To eliminate the reflection, one piece of electrical tape (1/4 x 10") is applied to the lower, right edge of the CRT face, and another piece of tape (1/8") is applied to the lower, right edge of the front glass plate.

Chassis Assembly V-2263;
Models H-830R21, H-831X21

WESTINGHOUSE
Chassis Assembly
V-2263

Technician
CIRCUIT DIGEST

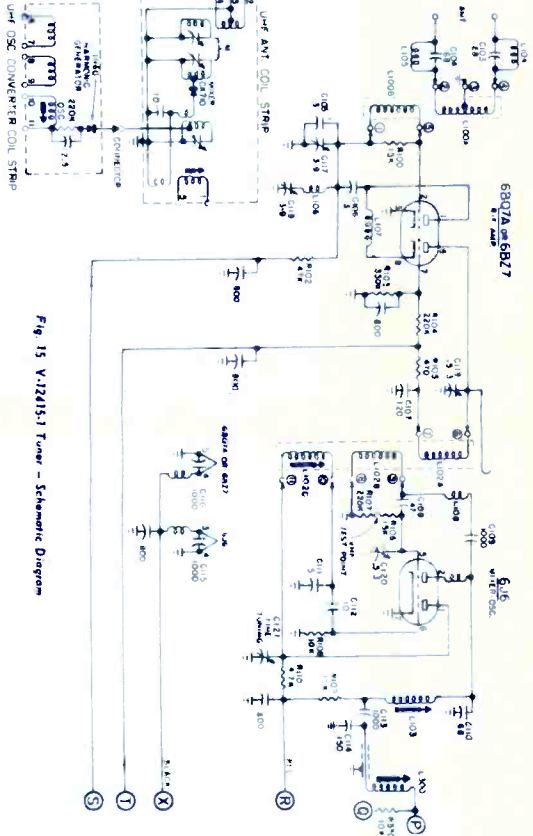
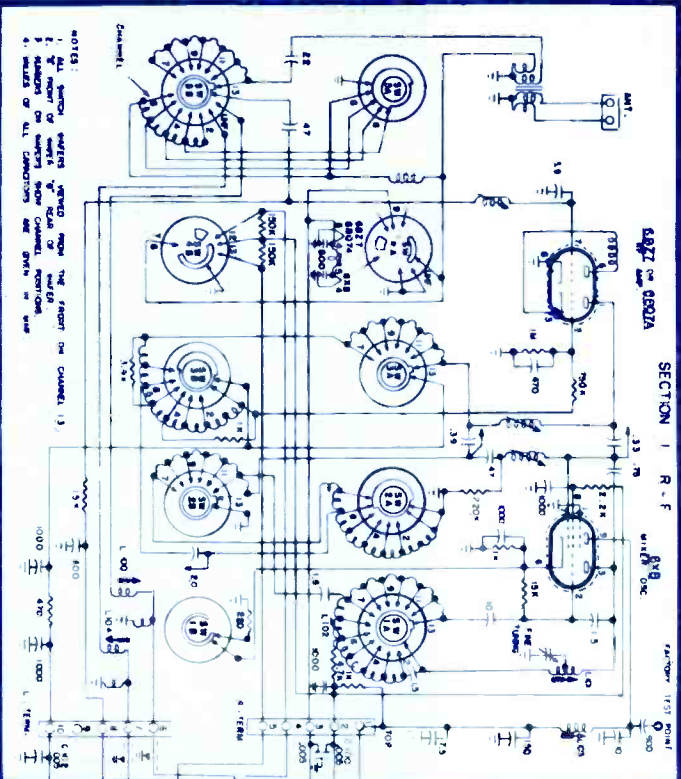
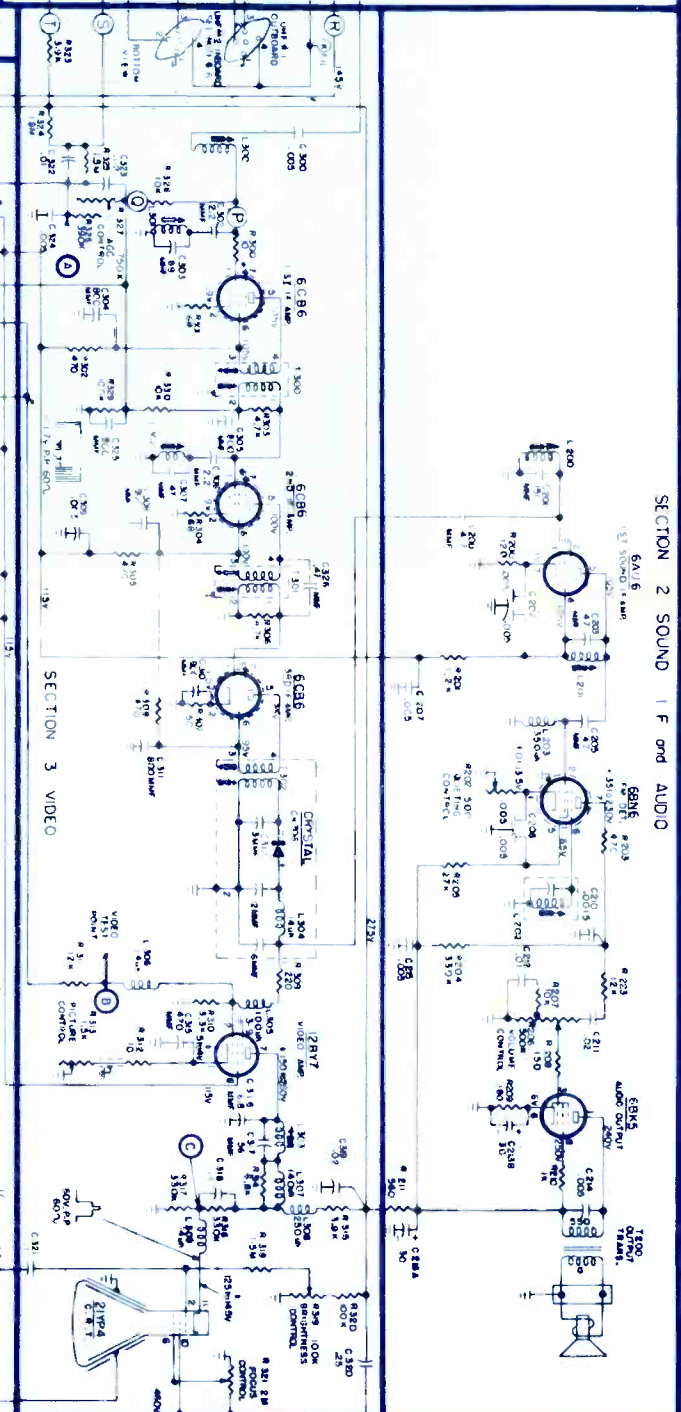


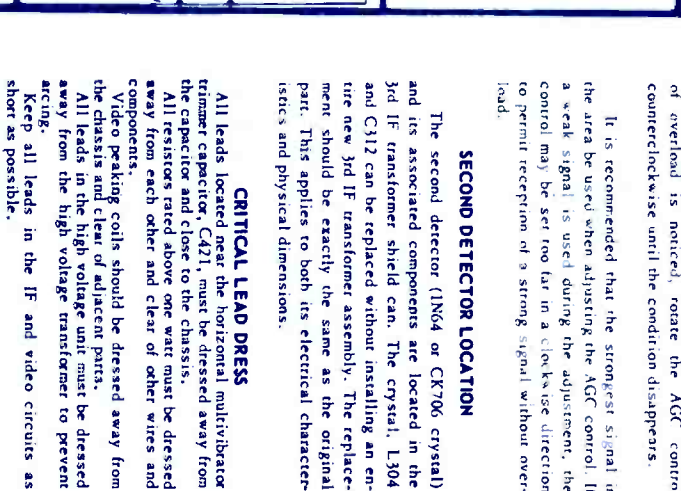
Fig. 15 V-12415-1 Tuner - Schematic Diagram



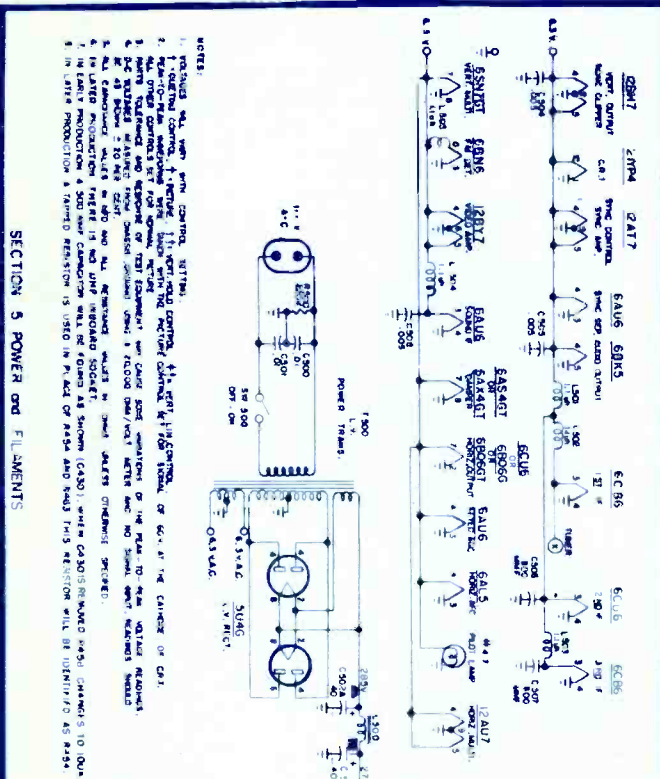
SECTION 1 R - F



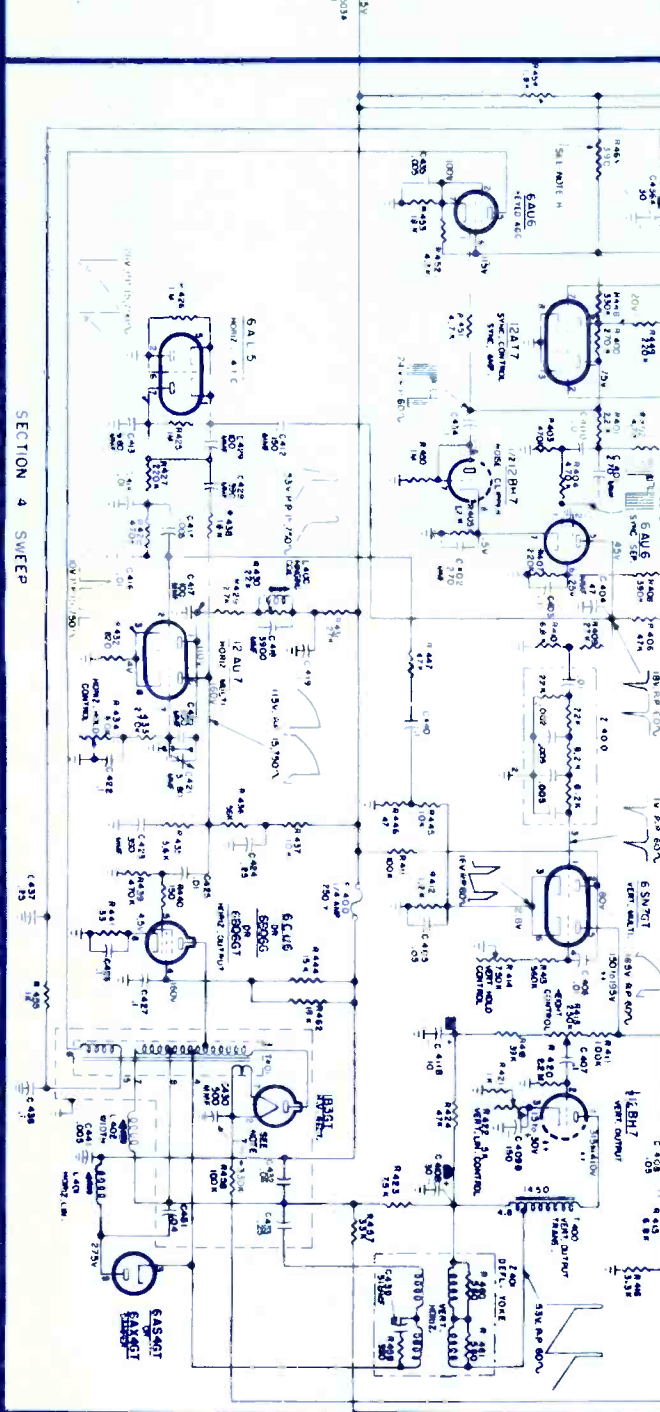
SECTION 2 SOUND I F and AUDIO



SECTION 3 VIDEO



SECTION 5 POWER and FILAMENT



SECTION 4 SWEEP



SECTION 6 CRT

- NOTES:**
1. VARIOUS VHF TUNER CONTROL SETTINGS.
 2. QUETING CONTROL: TURNING LEFT INCREASES CONTROL; TURNING RIGHT DECREASES CONTROL.
 3. HORIZONTAL HOLD CONTROL: TURNING LEFT INCREASES CONTROL; TURNING RIGHT DECREASES CONTROL.
 4. AGC CONTROL: TURNING LEFT INCREASES CONTROL; TURNING RIGHT DECREASES CONTROL.
 5. VIDEO PEAKING COILS: TURNING LEFT INCREASES CONTROL; TURNING RIGHT DECREASES CONTROL.
 6. ALL RESISTORS RATED ABOVE ONE WATT MUST BE DRESSED AWAY FROM EACH OTHER AND CLEAR OF OTHER WIRES AND COMPONENTS.
 7. VIDEO PEAKING COILS SHOULD BE DRESSED AWAY FROM THE CHASSIS AND CLEAR OF ADJACENT PARTS.
 8. ALL LEADS IN THE HIGH VOLTAGE TRANSFORMER TO PREVENT ARCING.
 9. KEEP ALL LEADS IN THE IF AND VIDEO CIRCUITS AS SHORT AS POSSIBLE.

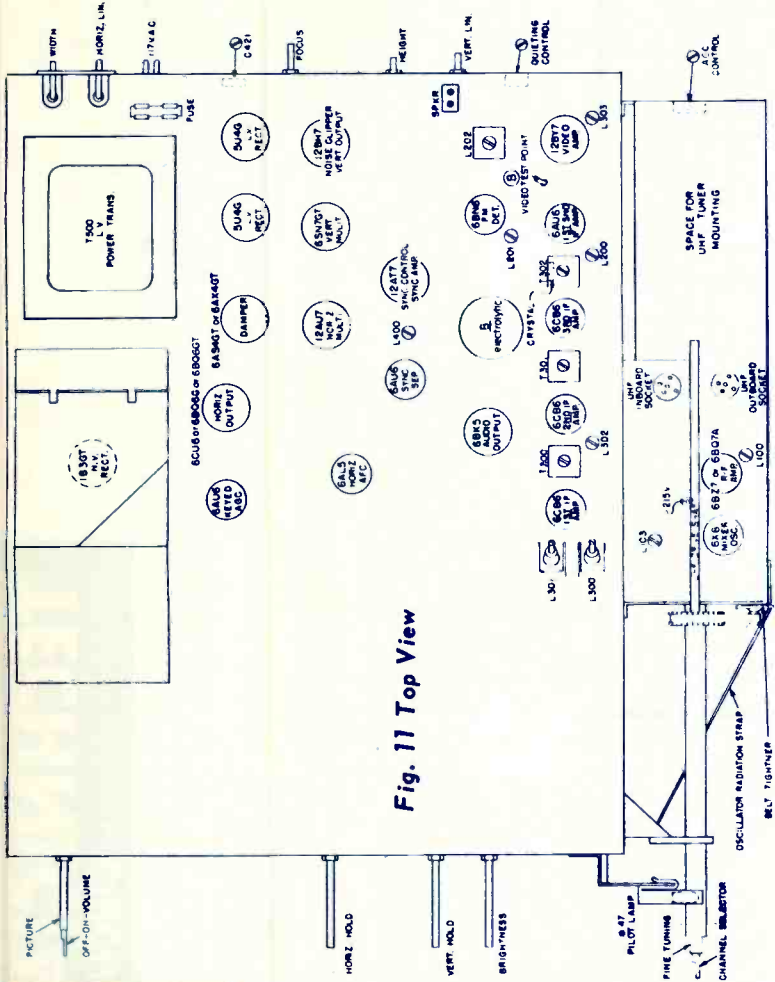


Fig. 11 Top View

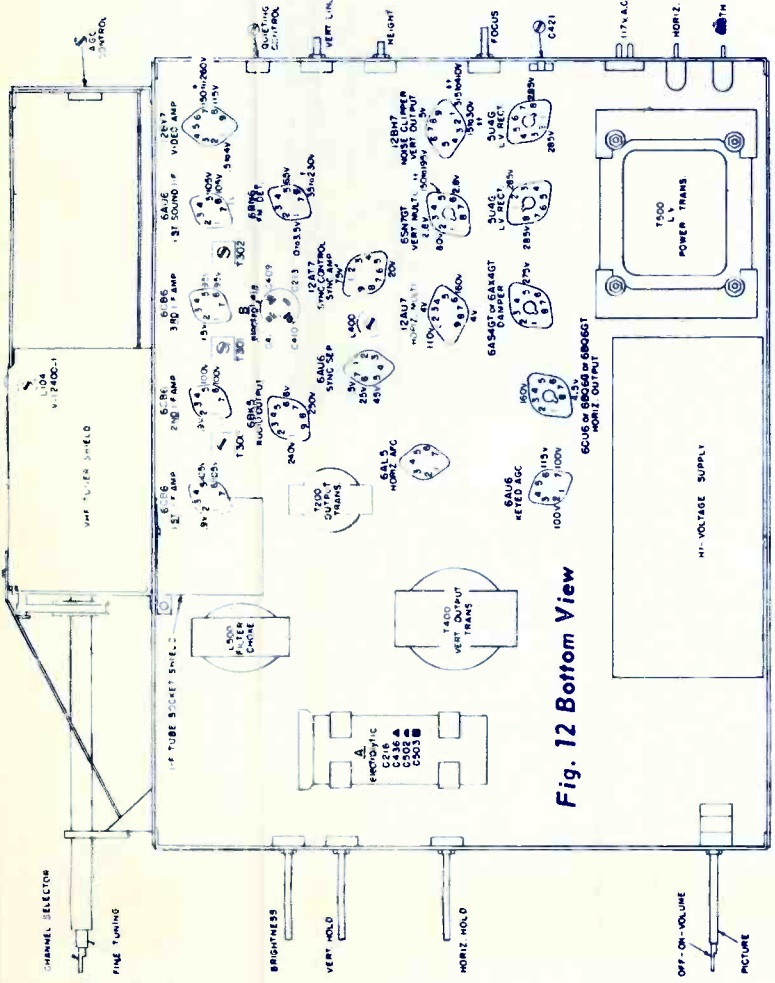


Fig. 12 Bottom View

TUNER ASSEMBLY CLEANING AND LUBRICATING

When necessary, the coil strip contacts and the stationary contact fingers should be cleaned with a stiff toothbrush dipped in carbon tetrachloride. After drying wipe off any deposit with a lint-free cloth. The stationary contact fingers can be exposed for cleaning by removing several coil strips. After cleaning, contacts should be lubricated with a lubricant free of sulphur and acid. Do not use so called "noise eliminating" lubricant or cleaner. Moving parts, other than electrical contacts should be lubricated with a light grade of vaseline.

PARTS REPLACEMENT

When it becomes necessary to replace electrical parts in the tuner, extreme care must be exercised. The replacement part must be exactly like the original. This applies to its electrical value, tolerance, temperature coefficient, physical dimensions, lead length and lead dress. The lead dress is extremely important. Observe lead dress arrangements before making parts changes. Fixed resistors must be replaced with the identical type originally used in the tuner.

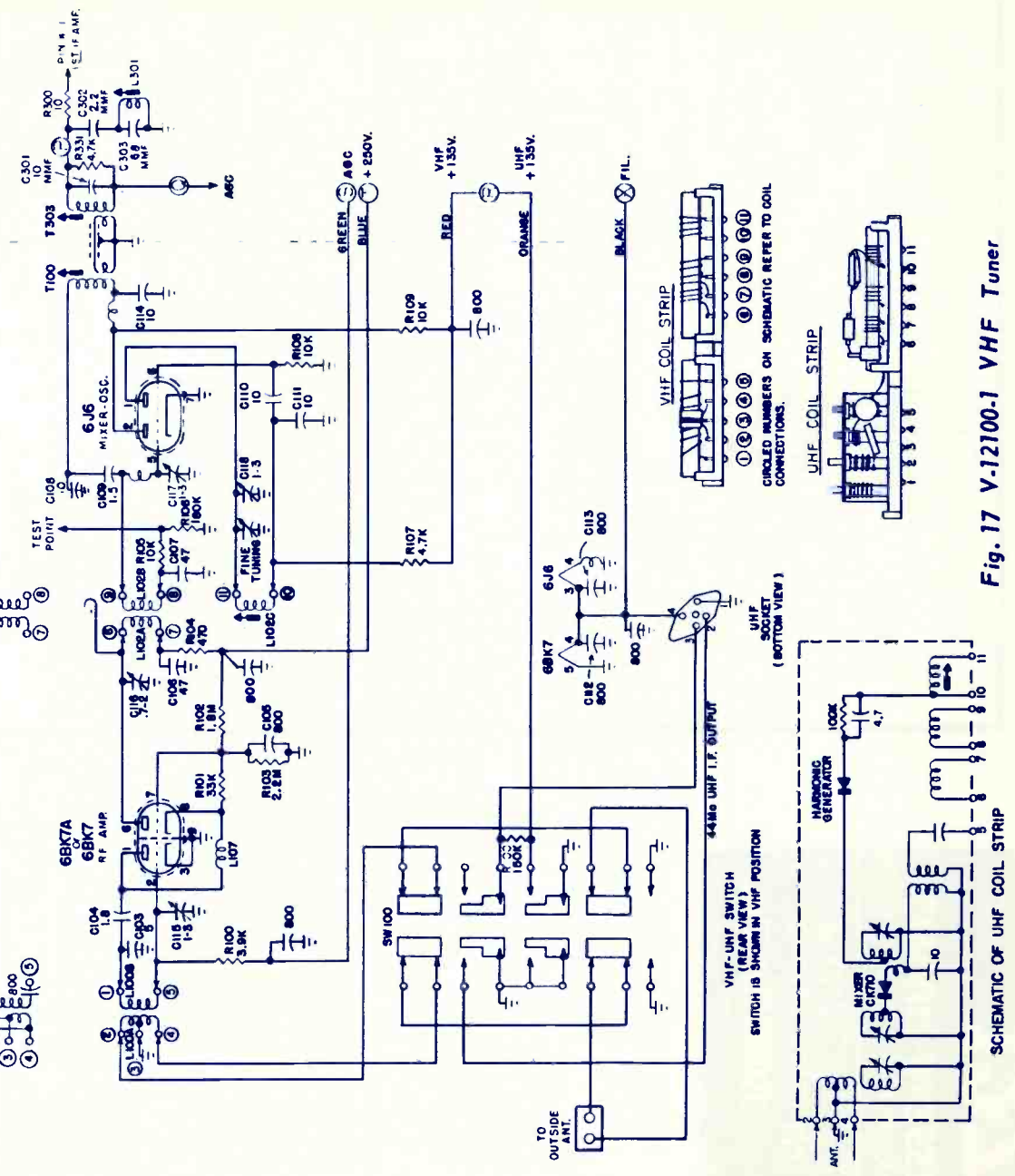


Fig. 17 V-12100-1 VHF Tuner

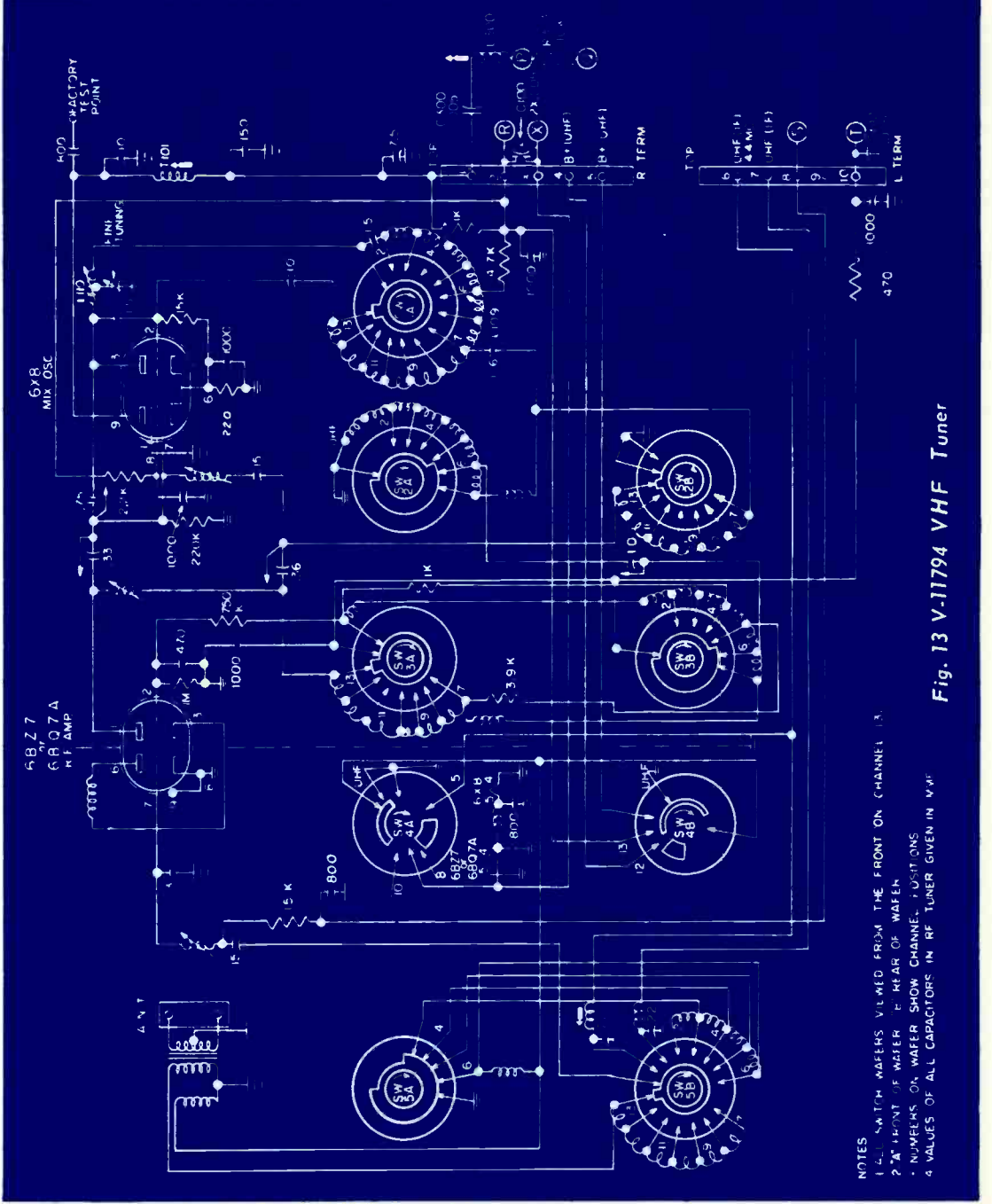
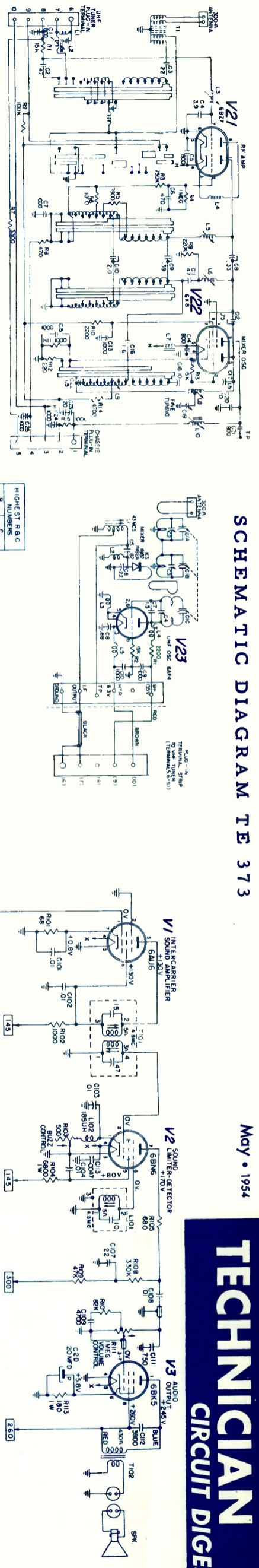


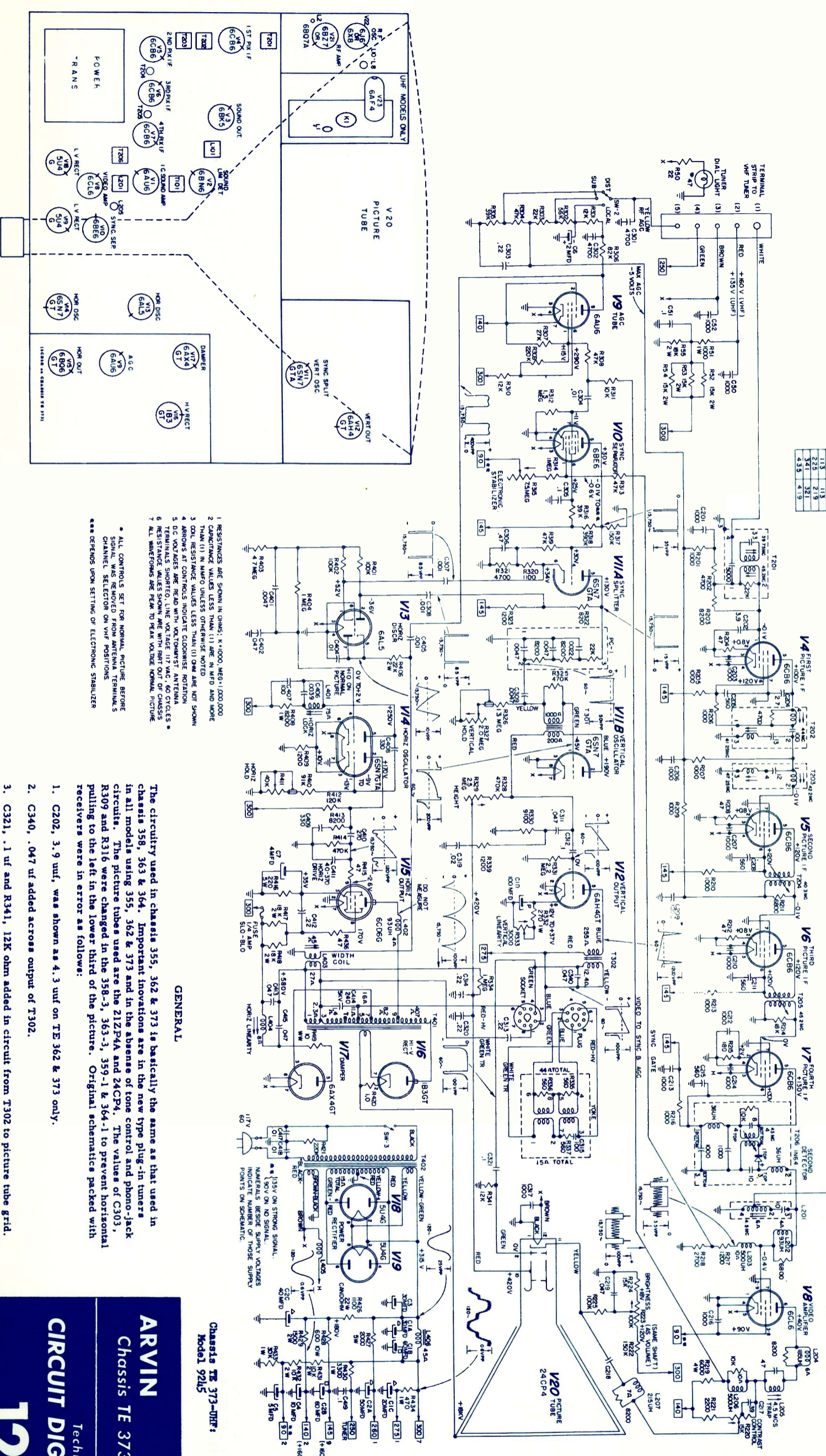
Fig. 13 V-11794 VHF Tuner

- 1. SWITCH WAFERS FILMED FROM THE FRONT ON CHANNEL 13.
- 2. AT FRONT OF WAFER. R REAR OF WAFER.
- 3. NUMBERS ON WAFER SHOW CHANNEL POSITIONS.
- 4. VALUES OF ALL CAPACITORS IN RF TUNER GIVEN IN VHF.



HIGHEST R.B.C. NUMBERS

R	16
C	11
T	2.5
S	3.41
L	3.21
W	4.9



1. RESISTANCES ARE SHOWN IN OHMS: K=1000, MEG=1,000,000
2. CAPACITANCE VALUES LESS THAN (1) ARE IN PFD AND MORE THAN (1) IN MFD UNLESS OTHERWISE NOTED
3. COIL RESISTANCE VALUES LESS THAN (1) OHM ARE NOT SHOWN
4. ARROWS AT CONTROLS INDICATE CLOCKWISE ROTATION
5. D.C. VOLTAGES ARE READ WITH VOLTAHMMETER ANTENNA TERMINALS SHORTED. LINE VOLTAGE 117 VAC, 60 CYCLES
6. RESISTANCE VALUES SHOWN ARE WITH PART OUT OF CIRCUIT
7. ALL WAVEFORMS ARE PEAK TO PEAK VOLTS UNLESS OTHERWISE INDICATED

GENERAL

The circuitry used in chassis 355, 362 & 373 is basically the same as that used in chassis 358, 363 & 364. Important innovations are in the new type plug-in tuners in all models using 355, 362 & 373 and in the absence of tone control and phono-jack circuit. The picture tubes used are the 21ZP4A and 24CP4. The values of C303, R309 and R316 were changed in the 358-3, 363-3, 359-1 & 364-1 to prevent horizontal pulling to the left in the lower third of the picture. Original schematics packed with receivers were in error as follows:

1. C202, 3.9 uuf, was shown as 4.3 uuf on TE 362 & 373 only.
2. C340, .047 uf added across output of T302.
3. C321, .1 uf and R341, 12K ohm added in circuit from T302 to picture tube grid.

Chassis TE 373-DMT
Model 9215

In This Issue (No. 21)

Circuit Digest No. 128

ARVIN

Chassis TE 373-UHF; Model 9245

CROSLY

Chassis 426; Models G-17TOMH, G-17TOBH, G-17TOWH

HOFFMAN

Chassis 406-21; Models 21M160, 21B161, 21M333, 21B334

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MAGNAVOX

Series 106C; Models CT 381C, CU 381C & CMU 381C

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WESTINGHOUSE

Chassis Assembly V-2263; Models H-830K21, H-831K21



For complete Index to all earlier Circuit Digests, see main section of magazine

(Continued from reverse side)

1. Ratio Detector Primary
2. 4.5 mc Sound Take-Off
3. Ratio Detector Secondary
4. 4.5 mc Video Trap
5. Tune Co-Sound Trap (L202) for minimum output indication at 41.25 mc
6. Tune adjacent channel soundtrap (L201) for minimum indication at 47.25 mc
7. Tune 4th I-F coil (L204) for maximum output indication at 43 mc
8. Tune 3rd I-F coil (L203) for maximum output indication at 44.75 mc
9. Tune 2nd I-F coil (L202) for maximum output indication at 42.5 mc
10. Tune 1st I-F coil (L201) for maximum output indication at 45.6 mc
11. Tune Converter Coil (L9) for minimum output indication at 43 mc
12. Tune Input Coil (L201) for maximum output indication at 43 mc
13. Tune Converter Coil (L9) for maximum output indication at 45 mc

Repeat steps (5) to (11) until adjustments do not change.

The maximum voltage reading should be held at about 4 to 7 volts by decreasing the generator output as the transformer windings are turned to resonance.

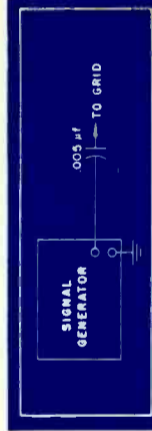


Figure 2. Signal Generator Isolation

Sound I-F Alignment

Equipment: Connect the "hot" lead of the CW signal generator to the grid, pin 2, of V301, the video amplifier tube, through a .005 uF isolating condenser as shown in Figure 2. Tune the generator frequency to 4.5 mc, unmodulated. Connect the voltmeter negative lead in series with a 10K isolating resistor, as shown in Figure 3. It is important that the 10K ohm isolating resistor be at the very end of the meter lead to avoid regeneration. Connect the positive voltmeter lead to ground.

Procedure: Adjust L101 and T101 primary (bottom), to obtain a maximum voltmeter reading.

Ratio Detector Alignment

Equipment: Generator input remains unchanged from the level that produced 4 to 7 volts in the preceding step. Connect the voltmeter across the junction of R105 and C108; polarity will depend upon which side of resonance the secondary winding of T101 is tuned. If a VTVM is being used, set the zero voltage point up scale so that plus and minus readings may be observed without changing the polarity selector switch on the VTVM. Start with one of the higher scales of the VTVM and decrease the scale setting as the null point is obtained.

Procedure: Tune the secondary (top) of T101 for a zero reading on the voltmeter. Do not change the generator output level from that which produced the 4 to 7 volts in the first step. Repeat tuning of T101 primary and secondary until adjustments do not change.

Trap and Picture I-F Alignment

Equipment: Connect the CW generator through the .005 uF isolating condenser, to pin 2 of V301 (plate of video detector) and tune the generator to 4.5 mc. Connect the detector network and voltmeter between ground and the cathode of the picture tube as shown in Figure 4.

Procedure: Tune L302 (4.5 mc trap in plate circuit of video amplifier) for minimum indication on voltmeter.

TUNING 41.25 MC TRAP

Equipment: Couple the CW generator "hot" lead to the tuner mixer grid. This may be done in several ways. The .5-3 uF trimmer condenser (C12 in

When no further change takes place, replace the voltmeter with the oscilloscope and replace the CW generator with the sweep frequency generator. Use the same isolating condenser and input connection to the mixer grid. Loosely couple the CW generator (marker) to the input by clipping or touching the CW generator "hot" lead to the unshielded insulated end of the sweep generator "hot" lead. This will afford a small amount of capacitive coupling. If the CW and sweep generators are connected in the same instrument, it will only be necessary to switch on the sweep frequency generator in order to continue the procedure. Tune the sweep frequency generator to a center frequency of approximately 43.5 mc. Use a sweep width of approximately 10 mc so that the base of each of the two response curve skirts is well within the ends of the oscilloscope trace. Check the overall bandwidth, position of the picture carrier, dip in bandwidth, and trapage by using the marker pip to locate frequency points on the response curve. See Figure 6. Tune the CW generator to 45.75 mc. The marker pip should appear at approximately the 50% point on the response curve skirt. Readjust individual coils to give proper band pass. Adjust 1st I-F coil to set video carrier (45.75 mc) at 50% (6db) response point. Adjust 2nd I-F coil to set the 50% bandwidth point (42.5 mc) on sound side. Adjust 3rd I-F coil to eliminate any tilt in the response shape. It should not be necessary to adjust converter or input coil. Once the picture carrier has been correctly positioned at the 50% response point, tune the CW generator to 42.5 mc, which should be the 50% point on the sound



Figure 6. Picture I-F Response Curve
This will give the proper bandwidth of 3.5 mc. The second I-F coil, L202, may be adjusted slightly to achieve the correct bandwidth.

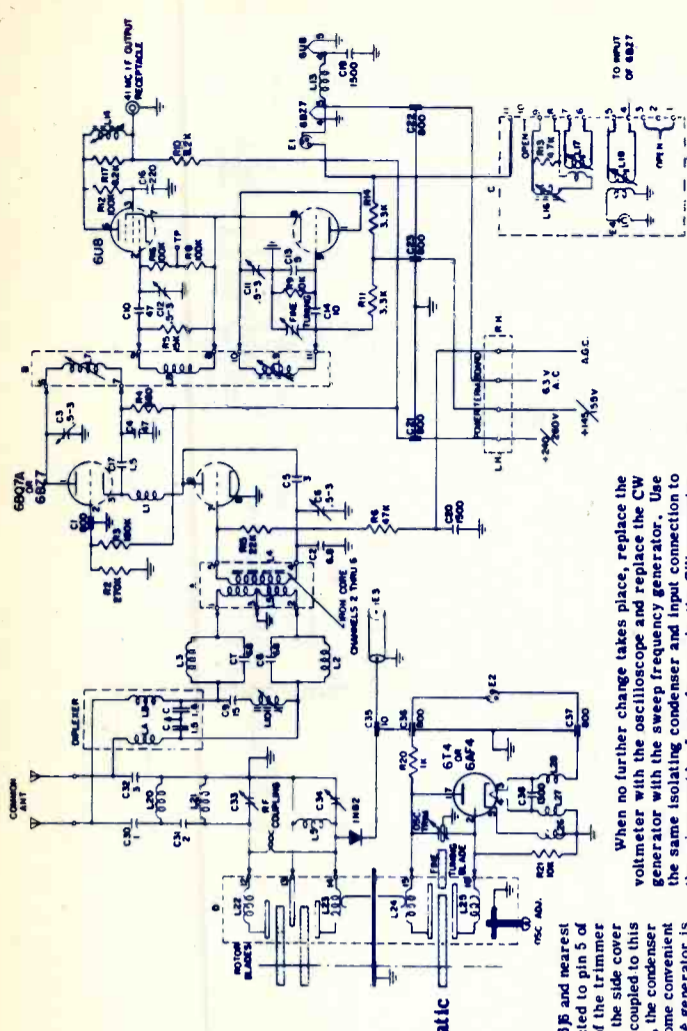


Figure 10. All Wave Tuner Schematic

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Chassis 406-21
Technician
CIRCUIT DIGEST
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1952 Bulletin 301) located in front of the 6B and nearest the contact side of the tuner is connected to pin 5 of the 6J6, the mixer grid. This plate of the trimmer condenser is accessible through a hole in the side cover plate. The "hot" generator lead may be coupled to this point through a .005 uF isolating condenser, the condenser means. Another method of coupling the generator is to remove the 6J6, wrap the isolating condenser pigtail around pin 5 of this tube, and replace it in its socket. In either method take care that the pigtail lead does not short to ground. A third method of coupling is to pull the 6B tube shield up on the tube until it is not grounded. Clip the "hot" lead of the generator directly to the tube shield. The tube shield and the tube electrodes form a condenser which capacitively couples the signal to the mixer grid. The capacity is much less than .005 uF, and a much higher level of generator output will be required if this method is utilized.

Connect the negative lead of the voltmeter across R216, the video amplifier load, using the 10K ohm isolating resistor at the end of the lead; connect the voltmeter positive lead to ground. Connect the negative terminal of the 3 volt bias source to the AGC bus; connect the bias source positive lead to ground.

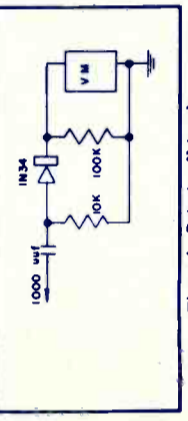


Figure 4. Detector Network

Procedure: Turn the CONTRAST control to its maximum position (extreme clockwise) for remainder of alignment. Tune the traps by setting the trap frequency on the CW generator and adjusting the trap slug for a minimum voltmeter reading. The order of tuning the traps is given in Table III. Keep signal low to avoid overloading I-F circuits.

TUNING PICTURE I-F COILS

Equipment: Instruments and set-up remain the same as for trap alignment during the first part of the procedure. For final adjustment the sweep frequency generator is also used and the voltmeter should be replaced by the oscilloscope. See Figure 5 for oscilloscope isolation details.

Procedure: Tune the I-F coils by setting the coil frequency on the CW generator and adjusting the coil for maximum voltmeter reading. The CW generator output must be attenuated so that the DC output voltage of the video detector (indicated on the voltmeter), remains at 1 volt as the I-F coils are tuned. The order of tuning is from the last I-F stage toward the tuner. Before tuning the grid coil of the 1st I-F stage, temporarily tune the tuner mixer plate coil for a minimum reading on the voltmeter at 43 mc. After the 1st picture I-F grid coil has been tuned, tune the I-F alignment procedure until no additional change in adjustments is necessary.

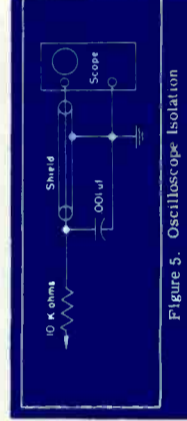


Figure 5. Oscilloscope Isolation

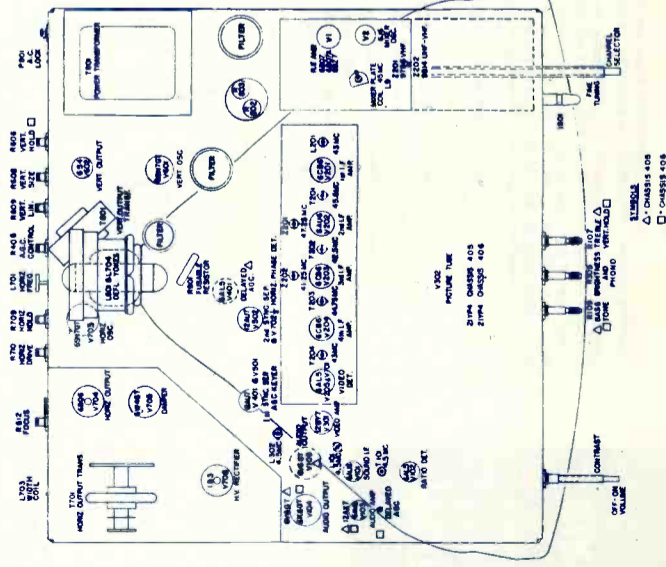


Figure 1. Top View Parts Layout

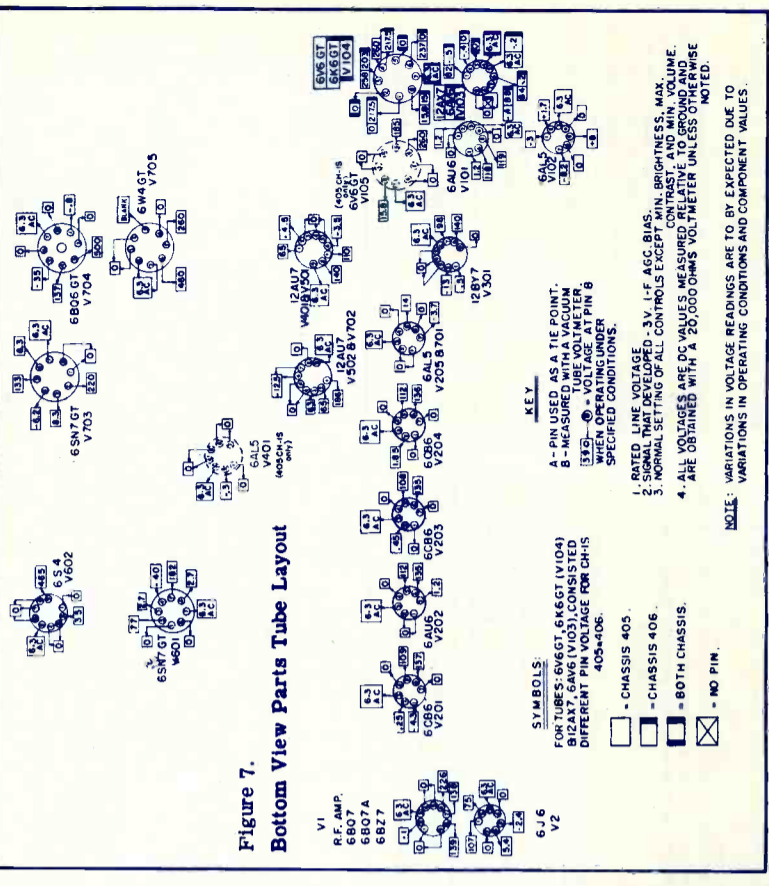


Figure 7. Bottom View Parts Tube Layout

- SYMBOLS:**
- FOR TUBES: 6807A (V104)
 - 6827 (V101)
 - 6877 (V102)
 - 6887 (V103)
 - 6897 (V104)
 - 6907 (V105)
 - 6907 (V106)
 - 6907 (V107)
 - 6907 (V108)
 - 6907 (V109)
 - 6907 (V110)
 - 6907 (V111)
 - 6907 (V112)
 - 6907 (V113)
 - 6907 (V114)
 - 6907 (V115)
 - 6907 (V116)
 - 6907 (V117)
 - 6907 (V118)
 - 6907 (V119)
 - 6907 (V120)
 - 6907 (V121)
 - 6907 (V122)
 - 6907 (V123)
 - 6907 (V124)
 - 6907 (V125)
 - 6907 (V126)
 - 6907 (V127)
 - 6907 (V128)
 - 6907 (V129)
 - 6907 (V130)
- KEY:**
- A - PIN USED AS A TIE POINT.
 - B - MEASURED WITH A VACUUM TUBE VOLTMETER WHEN OPERATING UNDER SPECIFIED CONDITIONS.
 - RATED LINE VOLTAGE
 - 1 - SIGNAL THAT DEVELOPED -3 V. I-F AGC BIAS.
 - 2 - SIGNAL THAT DEVELOPED -3 V. I-F AGC BIAS.
 - 3 - NORMAL SETTING OF ALL CONTROLS EXCEPT MIN. BRIGHTNESS, MAX. LINE.
 - 4 - ALL VOLTAGES ARE DC VALUES MEASURED RELATIVE TO GROUND AND ARE OBTAINED WITH A 20,000 OHMS VOLTMETER UNLESS OTHERWISE NOTED.
- NOTE:** VARIATIONS IN VOLTAGE READINGS ARE TO BE EXPECTED DUE TO VARIATIONS IN OPERATING CONDITIONS AND COMPONENT VALUES.

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Chassis 406-21
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CIRCUIT DIGEST
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capacitor replacements

CROSLLEY CHASSIS 426

Symbol No.	Rating MF @ WVDC	Crosley Part No.	Sprague Replacement
C132	200+5 @ 150	157836-1	TVL-2444
C138	20 @ 450	157903-1	TVA-1709
C139	140 @ 300	157837-1	TVL-1584
C140	140+5 @ 300/200+30 @ 150	157838-1	TVL-4563
C129	Sync Take Off Network	157813-1	102C17
C101 } C102 }	470 MMF @ 2 KV	156201-1	20GA-T47
C154	47 MMF @ 2 KV	154211-1	*20GA-Q47

* Contained in Sprague TV Yoke Capacitor Replacement Kit CK-1.

WESTINGHOUSE CHASSIS V-2263

Symbol No.	Rating MF @ WVDC	Westinghouse Part No.	Sprague Replacement
C213B } C409B } C410B } C411B }	30 @ 500/10 @ 450/ 150+30 @ 50	V-11535-1	R-1488
C216A } C436A } C502A } C503A }	40+40 @ 450/30+ 30 @ 350	V-9891-1	TVL-4720
Z400	Integrator Plate	V-11192-1	V-2

Sprague makes more capacitors . . . in more types . . . in more ratings . . . than any other capacitor manufacturer. Send 10c for 48-page TV Replacement Capacitor Manual to Sprague Products Co., 65 Marshall St., North Adams, Mass., or get it FREE from your Sprague distributor.

FOR SETS OF THE MONTH

ARVIN CHASSIS TE373

Symbol No.	Rating MF @ WVDC	Arvin Part No.	Sprague Replacement
C1	30 @ 400/60+20 @ 350/ 100 @ 50	22422-20	R-1457
C2	50 @ 400/60+40 @ 350/ 20 @ 25	22422-21	TVL-4707 TVA-1712
C3	30 @ 400	22422-22	TVL-1720
C4	10 @ 350	41429	TVA-1604
C5	5 @ 250	40002	TVA-1501
C6	2 @ 150	41534	TVA-1701
C7	4 @ 150	25453	TVA-1402
PC-1	Integrator Plate	C24166	V-1

MAGNAVOX SERIES 106C

Symbol No.	Rating MF @ WVDC	Magnavox Part No.	Sprague Replacement
C111	10 @ 50	270027-4	TVA-1304
C311	30+10+5 @ 350/200 @ 25	270021-46	TVL-4726
C413	10 @ 500	270027-19	TVA-1802
C501	40+35+30+30 @ 350	270021-43	TVL-4720
C502	40+5 @ 350/30 @ 25	*270021-49	TVL-3670
C504	30 @ 350	**270021-50	TVL-1617
RC301	Integrator Plate	250186-1	V-1

* Used in chassis CT381 A & B, CT383A & B only. Chassis 381C and 383C used 40+20+5 @ 350/30 @ 25, Magnavox part 270021-53. Use TVL-4621 with TVA-1205 to replace.
** Used in chassis 382A & B only. Chassis 382C used 30+20 @ 350, Magnavox part 270021-54. Use TVL-2627 to replace.

HOFFMAN CHASSIS 406-21

Symbol No.	Rating MF @ WVDC	Hoffman Part No.	Sprague Replacement
C105	5 @ 50	4209	TVA-1303
C112 } C605 } C802 } C804 } C113 } C717 } C803 }	140+40 @ 150/50+30 @ 50	4270	TVL-4408
C801 } C801 }	100+20+10 @ 300	4275	TVL-3584
Z501	140 @ 150 Integrator Plate	4245	TVL-1428 V-1

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