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MANAGEMENT

TELEVISION • ELECTRONICS • RADIO • AUDIO

Volume 2 Number 7

April 1953



IMF ELECTRON GUN

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YOU can measure your "welcome rating" on the basis of how many times you have to visit a customer to satisfactorily complete one service call. The *less frequently* you are called back, the *more* your good services are appreciated. Fewer call-backs cut overhead . . . build confidence . . . leave you *more* time for *more* satisfied customers. Cutting call-backs is the most effective way of snowballing your profits.

The RCA trade-mark makes your call doubly effective. First, because customers have confidence in products bearing the RCA trade-mark. Second, because experience has proven that the superior quality of RCA Receiving Tubes and Kinescopes is your best measure of protection against costly call-backs due to premature tube failures. You can be sure that, with RCA Tubes, the job is well done.

Helping you to safeguard your reputation is a vital, everyday service of RCA Tubes. And that protection is yours at no extra cost.



Unlock the
door to
bigger profits

Here's *your* key to better business . . . RCA's dynamic Dealer Identification Program. Ask your **RCA Tube Distributor** for your copy of the colorful, 16-page booklet "A Magic Pass-Key to Customer Confidence." It tells you how—for the first time—you can become a Registered Dealer . . . and get *extra* sales benefits.



RADIO CORPORATION of AMERICA
ELECTRON TUBES

HARRISON, N. J.

How much of your profit "dribbles away" like this?



A good many Radio-TV Service Organizations have found that keeping active service account records in old-fashioned "hunt and pick" files means a continual loss of time and money. See if it isn't happening in *your* office!



WATCH THOSE drawer files, or *any* files that contain active service records. See how much card-hopping and hunting your file clerks do from 9 to 5. Figure the cost in lost time and motion... in clerk fatigue, errors, inefficiency. That's what Revo-File saves you!



MODERN REVO-FILES may be used singly, or arranged in batteries. Each occupies about 3 feet of floor space. Variety of models available to accommodate all standard card sizes.

Modern Revo-File Eliminates Lost Time, Lost Motion... Instantly "Turns Up" Needed Records!

Here's a *proved* way to give your clerks *finger-tip* control over all your service account cards, and any other card records you use constantly. Revo-File "rounds them up" into a compact, mobile unit your clerks use with top efficiency—from an easy sitting position. No costly transposition job required. You use the same records you have now.

It'll be worth a lot to you (especially if you have 3,000 or more active service accounts) to get the whole Revo-File story. Find out why so many businesses have adopted Revo-File. Why it is recommended by "Markem Service Systems." Why it can increase efficiency, reduce costs, save you time and money. Mail coupon, today, for eye-opening details!

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World's largest builders of safes and bank vaults... Mosler built the U.S. Gold Storage Vaults at Fort Knox and the famous bank vaults that withstood the Atomic Bomb at Hiroshima



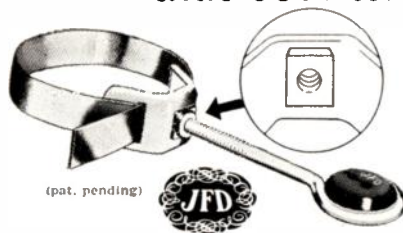
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Please send me your free illustrated folder, giving full details on Revo-File, the world's finest revolving card file.

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Nut universal STAND-OFF INSULATOR

greatest improvement in
screw-eyes since TV began!

6 full, machined threads provide "bull-dog" grip, anchor the screw-eye for good! No stripping of any screw-eye, no slipping of strap! Reinforced "arch-bridge" construction prevents bending or buckling of clamp no matter how much the stand-off is tightened. Ultra-low loss polyethylene insert and sturdy electro-galvanized steel strap for universal mounting on any mast up to 2½" od. Available for both single and dual lead-ins in 3½", 5½", 7½" and 12" sizes.

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of TV antennas & accessories

HVO-II for under chassis replacement in Zenith sets having 12" to 19" round tubes. **HVO-9** Autoformer for RCA, Hoffman and Hallicrafters sets designed for picture tubes 21" and up. **HVO-10** for "fast retrace". Merit TV Replacement Guide No. 405 covering practical recommendations for replacements in over 6000 models and chassis; Auto Radio Replacement Guide Form No. 3 can be obtained from your Jobber or by writing:
MERIT COIL AND TRANSFORMER CORP.
4425 N. Clark Street, Chicago 40.

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RIDER'S TEK-FILE & SAMS' PHOTOFAC
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ORIGINATED BY MERIT.
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Index to Advertisers

American Phenolic Corp. Second Cover Agency — Burton Browne Adv.	
Brand Names Foundation	31
Federal Telephone & Radio Corp. Agency — J. M. Mathes, Inc.	32
Fretco, Incorporated Agency — di Fonzo Advertising	37
General Electric Company Agency — Maxon, Incorporated	6
Jersey Specialty Company Agency — George Gero Advertising	10
JFD Manufacturing Co. Agency — Burton Browne Adv.	42
Littelfuse, Incorporated Agency — Burton Browne Adv.	7
Markem Service Systems Agency — George Gero Advertising	38
Merit Coil & Transformer Corp. Agency — Burton Browne Adv.	42
Mosler Safe Company Third Cover Agency — Stockton W. Burkhardt, Inc.	
Philco Corporation, Accessory Div. Agency — Hutchins Advertising	4
Pyramid Electric Company Agency — Sylvan A. Wolin & Assoc.	5
Radio City Products Co., Inc. Agency — George Gero Adv.	39
Radio Corp. of America Back Cover Agency — J. Walter Thompson, Inc.	
Radio Engineering Company	42
Regency Division, I.D.E.A. Agency — Burton Browne Adv.	10
Simpson Electric Company Agency — Burton Browne Adv.	10
Snyder Manufacturing Company Agency — Brooks & London Adv.	40
Sprague Products Company Agency — The Harry P. Bridge Co.	35
Sylvania Electric Products, Inc. Agency — Cecil & Presbrey, Inc.	41
Television Technicians Lecture Bu.	29
Triplett Electrical Instrument Co. Agency — Western Adv. Agency	8
Tung-Sol Electric, Inc. Agency — E. M. Freystad & Assoc.	3
University Loudspeakers, Inc. Agency — George Gero Adv.	33

PRODUCT PREVIEW

(Continued from page 29)

New Raytheon Tubes

Raytheon Manufacturing Co., 55 Chapel St., Newton 58, Mass. has announced the addition of 6AJ4 and 6SN-7GTA and 21AP4 and 21MP4 picture tubes to its replacement tube line available through distributors. The 6AJ4 is a nine pin miniature triode for use as a grounded-grid amplifier in uhf TV receivers. The 6SN-7GTA is a dual triode vertical oscillator and vertical deflection amplifier. Both the 21AP4 and the 21MP4 are rectangular faced metal types with magnetic focus and deflection.

Tele-Coupler

Vidaire Electronics Mfg. Co., Lynbrook, N. Y., is making deliveries of their "tele-coupler" for operation of two television receivers on one antenna. Design of the coupler permits transfer of maximum signal from a single antenna without interaction between receivers. It is also said to reduce effects of local oscillator radiation and to cut interference at i-f by providing filter action. Model C-2 measures only 3½" x 2¾" x 1¼" supplied for set or wall mounting.

Three-Way Crossover Network

British Industries Corporation, 164 Duane St., New York 13, N. Y., has announced the availability of a new Wharfedale three-way crossover network for proper division and separation of frequencies between the low or woofer, midrange and the high or tweeter speaker in audio systems. The crossover points are at 800 and 5000 cycles. The unit may also be used as a two-way crossover by ignoring its treble terminal. Maximum input is 30 watts; attenuation is at the rate of 12 db per octave. The unit is built in England by the Wharfedale Wireless Works.

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**FACSIMILE TELEPHONE
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Note — We have a special immediate need of Facsimile Equipment for Intra-Office and Plant use.

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What have you to offer?

RADIO ENGINEERING CO.
INQUIRER BLDG. PHILA. 30, PA.

12 reasons why it pays to replace with SYLVANIA PICTURE TUBES

Independent laboratory tests show these 12 outstanding qualities of Sylvania Picture Tubes

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|---|---|
| 1. No tube failures (after 1500 hours). | 7. No stray emission. |
| 2. No trend toward slumping emission or low light output. | 8. Low electrical breakdown. |
| 3. No excessive leakage. | 9. Very good color control. |
| 4. No excessive gas present. | 10. Excellent spot centering. |
| 5. Excellent grid control. | 11. Low screen burning (no rejections). |
| 6. Excellent emission characteristics. | 12. Excellent physical conditions. |

**Only Sylvania showed
no tube failures**

Here is proof that Sylvania Picture Tubes are *first* in long life and *finest* in all around performance of all tubes tested.

The above record was established in comparison tests of the tubes of 9 different manufacturers. All tests were conducted under identical conditions by an outside testing agency.

Set owners everywhere are being told again and again about Sylvania's superiority on the big, nationwide TV show "Beat the Clock."

The Picture Tube for Reliable Replacement

Of course, the name Sylvania has always stood for highest quality. Now, more than ever before, Sylvania Picture Tubes mean better business for jobbers and service-dealers alike. If you would like the full story of these recent tests to show your customers how Sylvania Picture Tubes won over all others tested, simply mail the coupon now.



**Send
for this
report**



Sylvania Electric Products Inc.
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Company _____

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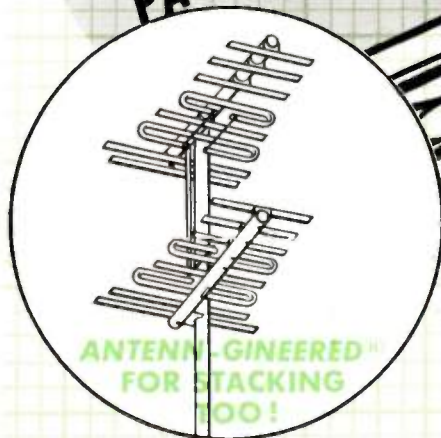
"A"—14 TO 48

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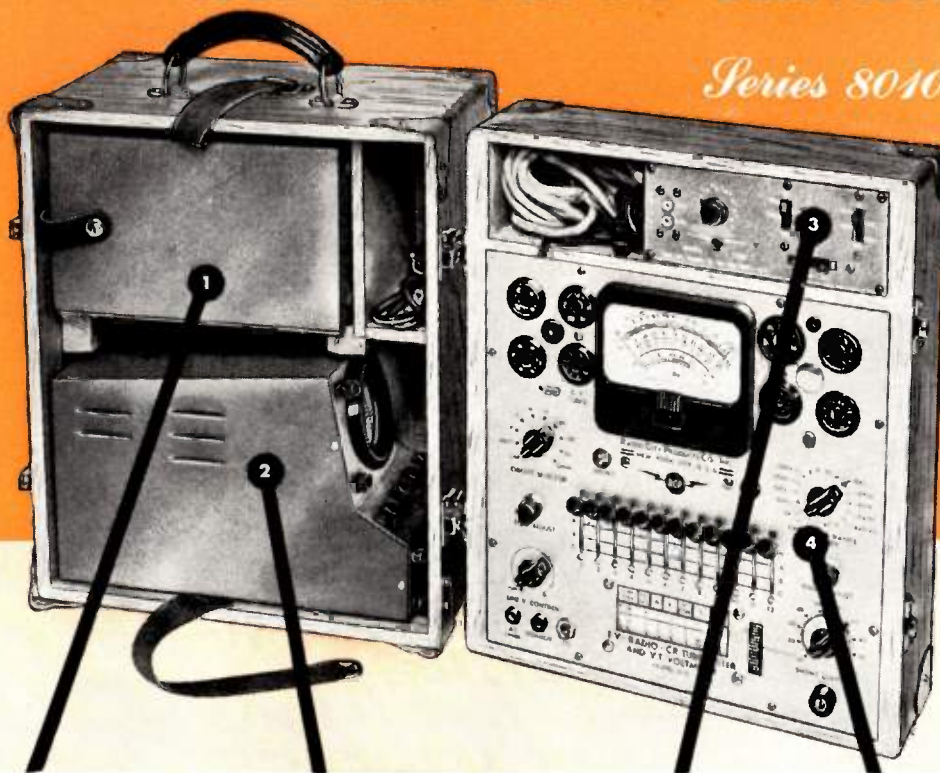
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THE AMAZING NEW RCP·AM·FM·TV SERVISHOP

Series 8010



MODEL 740A



MODEL 533M



MODEL 730



MODEL 808

A LONG TIME COMING — Worth waiting for! This complete TV.-FM-AM Service outfit can go with you to the receiver — or use the units individually in your shop or home. Check, test and align the set quickly, from antenna to picture tube or speaker. All the instruments for necessary measurements right at your fingertips. The Series 8010 Servishop includes:

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2. MODEL 533M . . . MIDGETSCOPE (A High Sensitivity 3" Scope)
3. MODEL 730 . . . UNIVERSAL SIGNALIGNER (AF-AM (RF)-FM Signal Generator)
4. MODEL 808 . . . TV-RADIO-CR TUBE TESTER, REACTIVATOR AND VTVM
5. MODEL HVMP-1 . . . A High Voltage Multiplier Probe
6. HAND RUBBED — FINELY FINISHED NATURAL OAK CASE

If bought separately these units would cost over \$30.00 more

In ONE practical portable case of finely finished hand rubbed natural oak, with a compartment for tools, tubes, leads, etc.; SIZE: 15-3/4" x 13-5/16" x 11". WT. 35 lbs. (approx.) SERIES 8010 — Complete, ready to operate.

\$310.00 NET

**SEE IT AT YOUR
JOBBER TODAY!**

Write for the new, colorful fully illustrated 1953 RCP catalog giving detailed specifications on the Series 8010 and other top-quality instruments in the RCP line. Address all requests to Dept. SM-4.

RADIO CITY PRODUCTS CO., Inc.

152 WEST 25th STREET • NEW YORK 1, N. Y.



KEEP YOUR SERVICE BUSINESS IN THE *BLACK*....

Here is a paper control system that fully meets the needs of the complex TV Service Business. It is the only system accepted on a national scale employing the same standard forms.

Whether your service operations is small or large; whether your account list is 100 or 50,000, Markem Service Systems has a control system to meet your needs. The money it cost you will draw interest just like a savings account. Every day you will see the impact of Markem over your entire business. The profit in television service will make itself felt as never before.



Complete Markem System with desk, tray, and schedule rack allows for efficient handling of service accounts by a minimum of clerical help.



Three operators handle approximately 13,000 active accounts with Markem Service Systems. Firm previously had eight telephone operators and three file clerks.

**Order Your MARKEM
Service System Today...**

Profit By It Tomorrow!

Check or money order — No c.o.d.'s

**MARKEM
SERVICE SYSTEMS**

145 Hudson Street, New York 13, N. Y.

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for as little as

\$ 67.50

You Can Buy

- 1 Markem Desk Tray
- 200 Carbonized Master Sets
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- 150 Printed and Taped Out-guides
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Markem Service Systems is also available for Air Conditioning Service

MARKEM SERVICE SYSTEMS

1. Will reduce the number of telephone operators required to service a given number of accounts.
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4. Will eliminate the possibility of sending a service technician to a wrong address.
5. Will enable you to set up all the required service records at one typing or writing merely by inserting the proper number of units.
6. Will reduce paper work and papers and require less space.
7. Will eliminate individual customers' folders and files.
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9. Will enable telephone operators to do all of the following operations without leaving seat or phone.
 - a. Catch duplicate service calls
 - b. Catch nuisance calls
 - c. Stop service to delinquent accounts
 - d. Identify type of service to be rendered immediately
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To: MARKEM SERVICE SYSTEMS
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- ☐ \$67.50 Package—Basic Unit (1 Markem Desk Tray, 150 Printed and Taped outguides, 1 set—A to Z two-sided guides), 200 Carbonized Master Sets, 500 Two-Part Carbonized Blank Receipt Forms.
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- ☐ \$118.00 Package—Basic Unit (same as above) Cover and Lock for Markem Desk Tray, 1 Schedule Rack, 200 Carbonized Master Sets, 1000 Two-Part Carbonized Receipt Forms.

Name.....

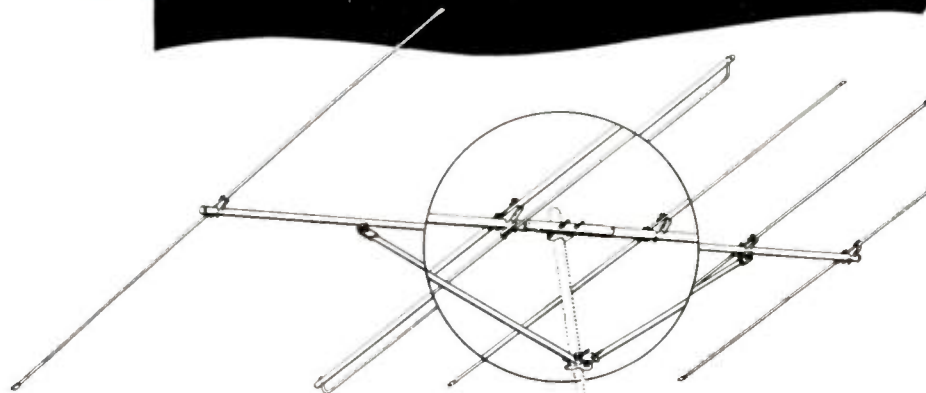
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City..... State.....

Total amount enclosed \$..... Check ☐ Money Order ☐

...WHEN THE **REACH** IS IMPORTANT
 INSIST ON THE ALL *New...*
STRATO-RAY*

YAGI ANTENNA

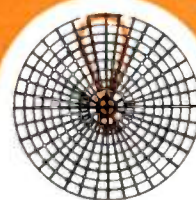
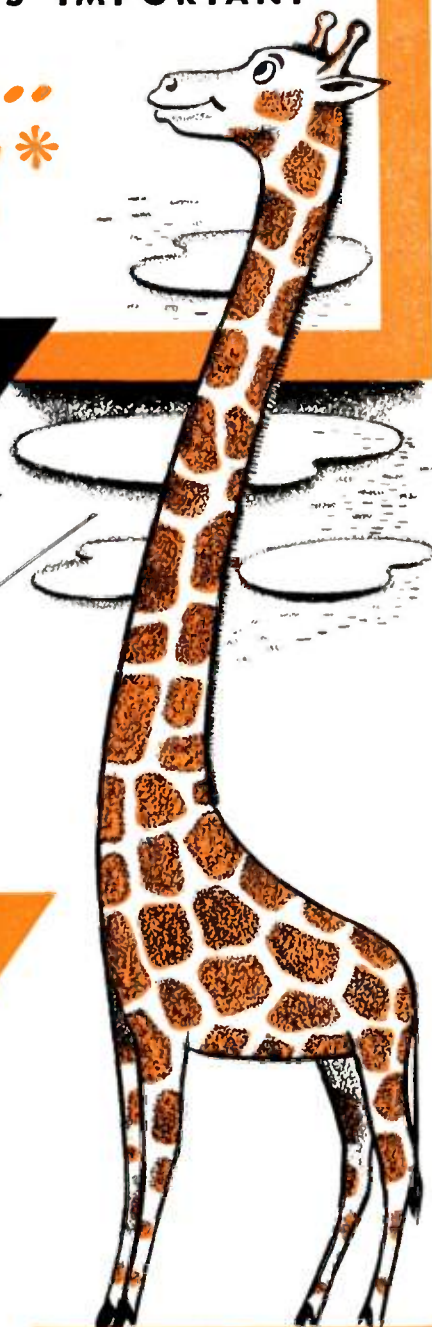


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COLLAPSED • PARTIALLY EXTENDED • FULLY EXTENDED

● As simple as 1-2-3-no fitting, no splicing, no joining, tighten and you're ready to mount—Now from the Fretco engineering department an all new high gain Yagi antenna. The STRATO-RAY is designed for reception up to 300 miles. Features the new "Jiffy lock" coupling. Available in 5, 8, 10 elements.



Fretco

INCORPORATED

* Trade Mark
Copyright 1953

406 North Craig St. Pittsburgh 13, Penna.

RCA TRANSISTOR DEVELOPMENTS

Transistor Counter

The application of transistors to electronic computers has been anticipated for some time because of the transistor's smaller size, lower power, less heating, and eventually lower cost. An electronic counter is a standard element of many computers and radioactivity measuring devices. The experimental transistor counter, which utilizes 66 developmental point-contact transistors, is capable of a million individual counting actions per second.

It requires 2 watts while a counter doing the same job with tubes would consume 60 watts. Weight of the transistor counter is $\frac{1}{2}$ pound as against 4 pounds; 20 cubic inches as against 200 cubic inches for a tube counter.

Transistor Adder

Another important element of a computer is an electronic adder. Point-contact transistors in an experimental adder have given 100,000 additions per second. The transistor adder requires one-quarter the power, one-seventh the size and one-fifth the weight of a comparable unit using tubes.

Transistor Application in RCA "Walkie-Lookie."

Since "Walkie-Lookie" TV equipment must be completely portable, weight, size and power drain on self-contained batteries are extremely important considerations. Initial use of 17 developmental point-contact transistors in four circuits reduced power consumption by more than one-third, promising reductions in battery size and weight. By transistorizing more than half of the tubes in the unit, it should be possible to cut total power consumption and over-all volume by at least 50%.

Transistor Applications in a Standard TV Receiver

Developmental transistors were tried only in those circuits of a standard TV receiver where transistors, at their present stage, appeared most feasible.

Five junction transistors perform the functions of four tubes. The transistors are used in three of the eight principal stages. The picture received on a 17-inch screen approximates that on an all-tube set.

A Portable, Battery-Operated TV Receiver

This item represents a pioneering attempt to build a completely portable television set using transistors in the place of all tubes except the picture tube. The purpose was to try transistors in all circuits to uncover problems and make an initial effort towards their solution.

The preliminary result was a single-channel receiver, with a five-inch screen. In recent tests, the 27-pound battery-operated receiver produced a satisfactory picture when operated off its self-contained loop antenna five miles from the transmitter. With a small "rabbit-ear" antenna a similar picture was obtained fifteen miles from the transmitter.

The experimental receiver has 37 experimental junction and point-contact transistors.

TECHNICAL TOPICS

(Continued from page 27)

toward the station. However, on occasion, a usable signal can be picked off by reflection from a near-by ridge. The reflected signal varies substantially with the state of the reflecting surface as it is changed by weather conditions. Use this indirect means of signal pickup only where necessary.

3. We have elaborated upon the proper choice of antenna type a number of times and, in previous articles, have compared characteristics. Find the antenna type best suited to your needs and channels. Proper UHF line and careful installation is necessary to retain reliable coverage and uniform reception with changes in weather conditions.

4. At present converter sensitivity depends on mixer crystal sensitivity and proper local oscillator injection. Thus crystal and local oscillator substitution often help to bring up weak signal level.

5. Use of a stub on the UHF line was mentioned previously as a means of deriving peak signal. Some additional improvement can be attained by peaking line between converter and receiver, Fig. 2. We have also found it helpful to change over to a piece of 300 ohm flat line right ahead of converter and position stub on it instead of a heavier dielectric cover of UHF lines.

6. In tests so far the UHF-VHF coupling devices have been found satisfactory in areas where signal levels are adequately high. However, in weak UHF and/or weak VHF locations they do not permit attainment of peak performance and the versatility of the entirely separate VHF and UHF installation. With separate installations each can be oriented and positioned for peak signal. There are no exchange losses at antenna or converter if separate lines are run for each antenna.

NEW CONVERTER TYPES

One of the newer converters employed in a number of combination UHF-VHF receivers is the General Instrument unit, Fig. 3. It employs three coaxial (a quarter wave length shorted) resonant circuits—double tuned input transformer and local oscillator. The coaxial resonant circuits are end-tuned over the UHF range by ganged capaci-

tors. This type of tuned circuit has a rising Q with frequency—so a more uniform band width can be attained over the UHF band.

Coupling between resonant circuits of input transformer is via small coupling links—large one for optimum coupling at low end of UHF band; small one, for high end. The secondary is coupled to a crystal mixer through a small choke that is self resonant below UHF band, rejecting lower frequency interference and holding crystal circuit impedance uniform. Local oscillator injection signal is applied to crystal via identical coil.

The output of the crystal mixer is applied to i-f output transformer. The unit can be designed to supply any desired VHF output frequency—General Instrument unit uses channel 5-6 range selected by a rear slider switch. A test point is provided for attachment of scope for alignment or VTVM for testing crystal current and injection.

Crystal injection has much to do with the sensitivity and noise factor of UHF devices and it is a general trend to include points of test and even injection controls for adjustments to specified injection levels.

The unusual feature of the General Instrument converter is the use of a half-frequency local oscillator. A conventional and stable oscillator can be designed using a 6J6 operating at a rather low frequency. Output of the oscillator is applied to a doubler resonant circuit (third coaxial tank circuit) that develops the proper crystal injection frequency. A second crystal is employed to emphasize the second harmonic output of the local oscillator.

New Television Dealers Association Formed in Philadelphia, Pa.

The Northeast Television Dealers Association has been formed in the Northeast section of Philadelphia to bring together an effort to combat difficulties caused by price cutting and other bad business practices. The association plans to initiate a consumer educational program.

Reginald H. Cherrill, one of the organizers, has been elected president. Other officers elected include Henry Whalen, vice president; John S. McCloy, secretary, and Edwin C. Shaffer, treasurer. Other members include Albert M. Haas, president of the Television Contractors Association; Harvey Morris; D. Imperio; Bud McCullom, and Earl Fletcher.

The association has developed a code of ethics and a mode of operation. It is planning newspaper advertising to carry its message to the public.

SPRAGUE

A
LOOK
INSIDE
PROVES

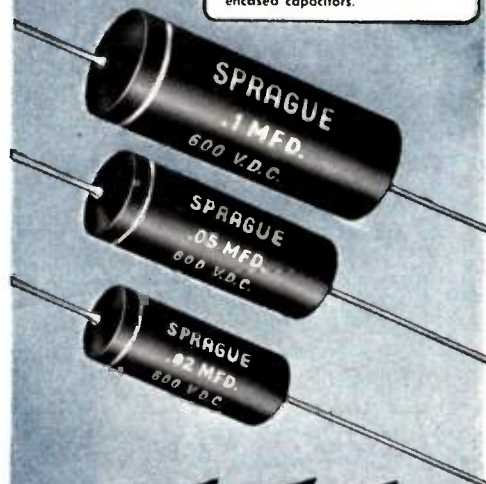
WHY

Sprague dry molding keeps the high purity paper and foil windings uncontaminated during manufacture.

Enlarged cut-away view of Sprague Telecap.

This exclusive hollow eyelet terminal permits OIL impregnation after the capacitor is molded.

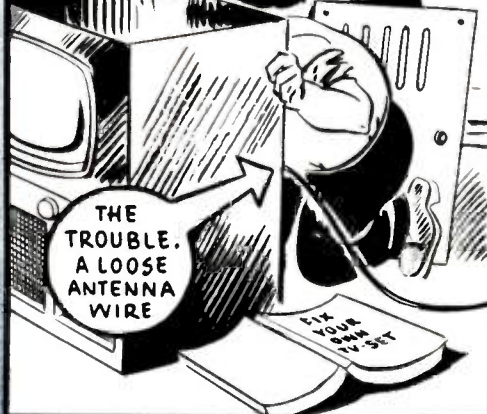
Solder-seal construction formerly used only in costly, large metal-encased capacitors.



SPRAGUE

SERVICEMAN'S DIARY...by Ben Grim

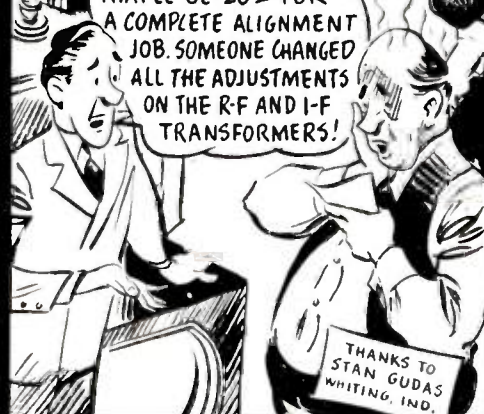
WHY PAY A SERVICE-MAN 5 BUCKS FOR A SIMPLE ADJUSTMENT I CAN MAKE MYSELF? WHILE I'M AT IT, I THINK I'LL JUST TIGHTEN THESE LOOSE SCREWS INSIDE!



AFTER HE TACKLED THE CAR, LAST YEAR, WE HAD THE ONLY CAR IN TOWN WITH 3 REVERSE GEARS AND 1 FORWARD!

WE'RE STILL SENDING CLOTHES TO THE LAUNDRY SINCE HE FIXED THE WASHING MACHINE LAST MONTH!

THAT'LL BE \$20.00 FOR A COMPLETE ALIGNMENT JOB. SOMEONE CHANGED ALL THE ADJUSTMENTS ON THE R-F AND I-F TRANSFORMERS!



BLACK BEAUTY TELECAPS® ARE TOPS!

★ Molded *dry* into their tough non-flammable Bakelite phenolic cases, Sprague Black Beauty Telecaps are mineral-oil* impregnated through a tiny metal eyelet under high vacuum *after* molding—the same as expensive metal-encased oil-filled jobs! No dust or moisture can contaminate the capacitor sections. This exclusive Sprague *dry assembly process* assures maximum insulation resistance, superior capacitance stability and capacitance retrace†, plus l-o-n-g life under high heat (185°F) and humidity.

★ More than 250 million Black Beauties are on the job today! Used in the most critical TV and radio circuits, they have an unprecedented failure-free service record.

★ Ask for these Black Beauty Capacitors by name and accept no substitute. *There is no other capacitor "just as good."*

★ Do you have the new Sprague TV Replacement Capacitor Manual? If not, write today to: Sprague Products Company, 331 Marshall Street, North Adams, Massachusetts.

*All units from 600 to 12,500 volts are mineral-oil impregnated.

†Only Sprague Black Beauties consistently return to the same capacitance at the same temperature time after time.

WORLD'S LARGEST CAPACITOR MANUFACTURER

SPRAGUE PRODUCTS COMPANY IS THE DISTRIBUTORS' DIVISION OF SPRAGUE ELECTRIC COMPANY

Trade Literature

TV SERVICE BOOKLET

The facts of television service life have been prepared for TV set owners in a pocket-sized eight page booklet for distribution to the public by television service dealers. The booklet, published by **General Electric** and available free from G. E. tube distributors, discusses in simple, non-technical language, the complexity of the TV receiver, the implosion and high voltage dangers involved when unskilled persons tamper with a set and gives good reasons for calling a skilled service technician when TV repairs are necessary. The booklet will accommodate service-dealer imprints and is suitable for use as a mailing piece.

UHF INSTALLATION BOOKLET

Practical tips on uhf installations for technicians are given in a twelve-page illustrated booklet published by the **Technical Appliance Corporation** of Sherburne, N. Y. The pocket sized booklet covers basic characteristics of uhf reception and transmission, transmission line handling, "do's and don'ts" for technicians and other information that is presented in a practical work-day manner. Copies may be obtained from Taco distributors or by writing directly to the Technical Appliance Corporation.

DATA ON UHF CONVERTERS

A new forty-four page, 8½" x 11" book describing the design and operation of uhf converters of twenty-one manufacturers, including: Arvin, Crosley, Du Mont, General Electric, Mallory, RCA, Raytheon, Regency, Sarkes Tarzian, Standard Coil, Stromberg, Sutco and Sylvania, will be published by **Howard W. Sams & Co., Inc.**, 2201 East 45th St., Indianapolis, Indiana, on or about April 1st. Copies of the uhf converter book may be obtained by remitting \$1.00 to Howard W. Sams & Co., Inc.

TV TOWER CIRCULAR

An 8½" x 11" circular with many illustrations of TV towers and accessory hardware has been published by **Penn Boiler & Burner Mfg. Corp.** of Lancaster, Pa. Copies of the circular and complete engineering data on products shown are available on request to the manufacturer.

STORAGE AND DISPLAY EQUIPMENT CATALOG

An 8½" x 11" eight-page catalog listing many benches, catalog racks, chassis stands, counters, drawers, shelving, test stands, trucks and other equipments specially designed for the electronic industries has been published by the **Equipto Division of Aurora Equipment Company**, Aurora, Illinois.

ASSOCIATION NEWS

(Continued from page 22)

service organizations have formed a NARDA Chapter in Appleton, Wisconsin. Membership will include dealers from Menasha, Neenah, Kaukauna and other towns. Establishment of a CTIS program was the organization's initial activity.

George Karras is president; Dallas Jansen, vice-president; E. R. Wiskircher, secretary-treasurer; George Haag, recording secretary; Joe Trudell, promotion and publicity; and Wendal Lewis is chairman of the grievance committee.

Norman K. Brahmstedt, NARDA director of member services, presented the CTIS program at its organizational meeting urging the grievance committee

quire horizontal and vertical dimensions of a television screen to be specified in ads in which screen-size is mentioned as a sales feature.

Mr. Joerndt, listing NARDA objections to the bill, requested the judiciary committee to make any regulation of screen-size advertising coincide with the trade practice rules of the Federal Trade Commission. He pointed out that a substantial portion of TV advertising is cooperative and prepared by factories. He said that special Wisconsin regulation, not coinciding with national practice, would place the burden on set manufacturers, forcing them to develop separate ads for Wisconsin dealers.

The National Electronic Distributors Association is opposing Wisconsin's proposed "implied warranty" bill. L. B.



RTSEA Anderson, Indiana

Left to right, front row: Joe Groves, president; Clyde Nottingham, vice-president; Harold Scott, trustee; William Combs, trustee; John Hoppes, treasurer. Back row: Russell Cole, trustee; Arthur Schwenk, trustee; John Emory, sergeant at arms; and Everett J. Deilks, secretary.

to cooperate with local building and electrical inspectors and the Chamber of Commerce in reviewing and handling service complaints.

Later the group met with city inspectors and other officials. They agreed that licensing would be unnecessary and are exploring a practical ordinance to regulate outdoor antenna installations.

TWIN PORTS TV DEALERS ASSN.

Dealers in the Duluth, Minn. and Superior, Wis. area met recently to form the Twin Ports TV Dealers Association. Objectives of the newly formed organization are to strive for better trade practices and a sane servicing program.

Mel Cohen, Mel's Sales & Service in Duluth, is president of the group. Other officers are Hank Olson, vice-president; E. W. Brander, secretary and Howard S. Watts, treasurer. On the board of directors are William Paul, Eric Nyland, Floyd Valleneune, James Springer, and Roy Springer.

MADISON, WISCONSIN

NARDA Secretary, Victor P. Joerndt, of Kenosha, Wisconsin, has informally forwarded its objections to a bill now pending in the judiciary committee of the Wisconsin senate which would re-

Calamaras, NEDA executive vice-president, appeared before the hearing on the bill in Madison. Mr. Calamaras stated that the proposed law would bankrupt most of the dealers or force them to withdraw from business, because it would compel them to service, without compensation, all sets sold by them for six months and also to continue to be responsible for all parts failures and labor for three months beyond the usual factory warranty of 90 days.

KEYSTONE CHAPTER OF NEDA

The April meeting of the Keystone Chapter of NEDA will be held in Williamsport, Pa. This session will honor their Williamsport member, John B. Voelker, who due to ill health is not able to travel to Philadelphia for the regular chapter meetings.

Keystone president, Morris Green, appointed Dahl W. Mack as program chairman of the April meeting. An invitation has been extended to NEDA president, W. D. Jenkins, to attend as guest speaker.

Mr. Green also appointed a membership committee including George Hautenschild, Amil Gumula, Ty Yonkers, and Donald R. Shover.

INDUSTRIAL AUDIO

(Continued from page 12)

reported: "music, when played at proper sound level is supplemental rather than distracting."

MUSIC AND OCCUPATION

From this brief review of Metropolitan Life's study it can be seen that music is beneficial to a varying degree and, in some instances, may not be beneficial in certain types of work that require considerable concentration.

In another test conducted by Burris-Meyer, music was played to sixteen experienced workers. During a two-day period with music, production increased 6.7%. In a group of one hundred workers output per man-hour increased 11.4%. A lesser increase in production, in an operation requiring considerable manual dexterity and good sense of timing, average man-power output during a three-week period increased only 4.1% with music. In a nine-week test, production dropped slightly during one week.

A school study by M. B. Jensen and reported in the *Journal of Educational Psychology* typing proficiency was noticeably reduced by jazz and dirge music.

As a general rule: the average factory worker responds favorably to music; the office worker tends to shun music, feeling that it interferes with his thinking. However, an individual office worker, exposed to reasonable periods of planned music at the proper level, will usually admit that music relieves tension and provides beneficial relaxation.

PLANNED VS. UNPLANNED MUSIC

The effectiveness of planned programs has been studied by the Industrial Recreation Association. Here is the result of one of their tests in which maximum worker efficiency was measured:

Before Music	72.0%
After Music	80.0%
Increase	8.0%
After Planned Music	86.8%
Planned Increase	14.8%

When music programs were planned the value of music as a production tool almost doubled.

PROGRAM FACTORS

With reasonable consideration of the work, worker intelligence and temperament, the organization of a productive music program is not difficult. While it is of interest, worker preference is not a determining factor. Left to their own choice, workers may give suggestions that provide too much distraction from their work, for example: they may wish to have baseball games soundcast. Or the other extreme: they may suggest slow, profound classics that certainly will tend to produce a slow-down on the

This **TECHNICAL INDEX** is one reason you need this 28-page volume!

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TECHNILOG

The new 1952 compilation of valuable information that explains and simplifies the application of loudspeakers. A real time and money saver for dealers, contractors, service men and installation designers. The most authoritative, single piece of literature ever published on loudspeakers. It's yours FREE.



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TECHNICAL INDEX

SELECTING THE PROPER LOUDSPEAKER

SYSTEM	Page 4
METHODS OF CONNECTING SPEAKERS	
TO THE AMPLIFIER	Page 8
IMPEDANCE MATCHING	Page 9
CONSTANT VOLTAGE DISTRIBUTION SYSTEM	Page 12
IMPEDANCE MATCHING TRANSFORMERS	Page 16
EFFECTS OF MISMATCH UPON POWER	
TRANSFER	Page 16
CONTROLLING LOUDSPEAKER VOLUME	Page 20
OVERLOAD PROTECTION OF LOUDSPEAKERS	Page 22
PHASING LOUDSPEAKERS	Page 23
REVERBERATION	Page 23
BAFFLING A CONE SPEAKER	Page 26

ADDRESS REQUESTS TO YOUR DISTRIBUTOR



UNIVERSITY LOUDSPEAKERS • INC
80 SO. KENSICO AVE., WHITE PLAINS, NEW YORK

production line. The importance of worker preference is interesting principally as an index to a **communication approach to the human mechanism.**

SELECTION OF MUSIC

Familiarity, tempo, orchestration, appeal and mood are considerations in the selection of industrial music. The program should be checked against these factors to match, as far as possible, the needs of the specific audience.

Several studies agree that popular even-tempoed dance music is best. Other studies favor particular types of music geared closely to the average intelligence of listeners.

W. A. Kerr has reported an observation of nineteen factory glee club members, thirty stenographers, and forty factory workers. Each of these groups favored "hit-parade" music. Hawaiian music received a high rating from factory workers. Stenographers appeared to dislike fast dance music to which the factory group was indifferent. All groups liked semi-classical music with the greatest response from glee club members and the least response from factory workers.

Waltzes were acceptable to all groups but polkas and square dances were rejected by glee club members and office workers. Spirituals were not popular. Marches received a fair rating but were

least preferred by factory workers. Novelty and humorous music did not rate very well.

Other studies have revealed that there is a trend in which men prefer instrumental selections while women like to hear popular vocal selections rendered by men.

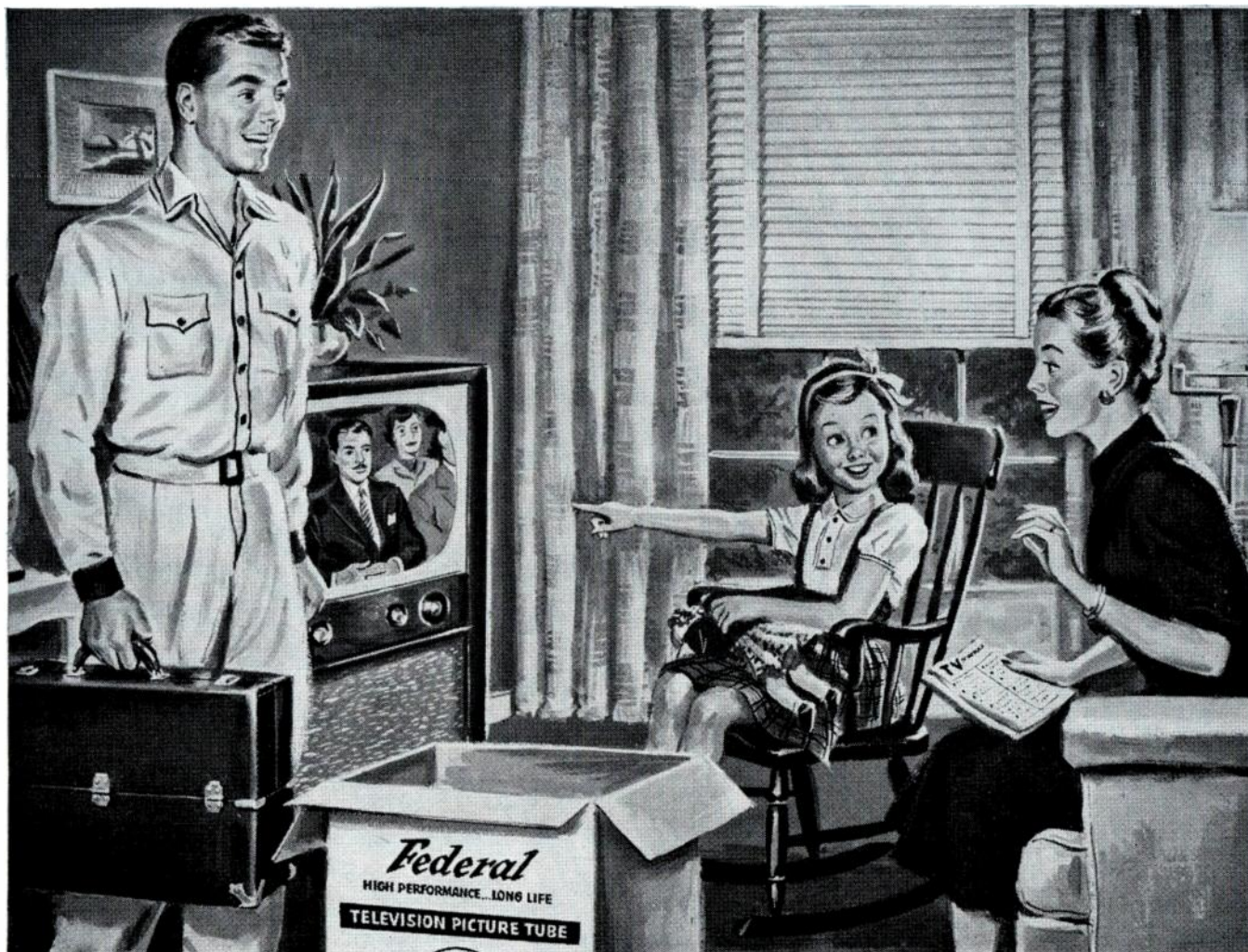
JITTERBUG & BOOGIE-WOOGIE

The jitterbug and boogie-woogie are too stimulating for industrial application. They disrupt the work cycle — are too distracting for concentration and accurate work. Another good tune that does not fit industrial needs is **Deep in the Heart of Texas**. It is too compelling. It tempts workers, makes them want to drop their work and clap their hands.

In general fast or extreme tempos should be avoided in favor of music with moderate, well-defined and consistent rhythm — to maintain interest, morale and production at high levels.

TV CONTROL REPLACEMENT MANUAL

The second edition of the Clarostat TV Control Replacement Manual has been published with over 262 pages of factual control replacement information. The manual is available on payment of \$1.00 to electronic parts distributors or direct to the **Clarostat Mfg. Co., Inc.**, Dover, New Hampshire.



The man who brought back a smile

EXCITED? Cynthia was practically bursting! Last thing Dad said was "Now you look close, Cindy.

You'll see me right there in the audience tonight, and I'll wave to you." (They always do!)

Long about three o'clock Cynthia's mother turned on the set . . . "just to make sure."

Well, there was a picture, if you could call it that . . . but so dim and fuzzy they'd never even recognize Dad that evening. And Cindy . . . disappointed? She was brokenhearted!

But, you know the happy ending . . . the serviceman's competent analysis . . . replacement of a worn-out tube with a Federal "Best-in-Sight" Picture Tube . . . and there are smiles again.



Federal's

Line of Popular-Size Picture Tubes will take care of over 90% of all TV replacements.

Write for free copy of Federal's TV Picture Tube Data Book, Dept. N-25.

THE SERVICEMAN gives his customers years of experience and expert technical ability. His business is knowing what's best . . . and giving the best. Customers rely on his judgment just as thoroughly as he relies on Federal "Best-in-Sight" Picture Tubes for the sharpest, brightest, clean-cut pictures possible. He *knows* that when he picks up the carton with the blue and white Federal label, he's going to make some customer a lot happier for a long, long time.



Consult your local Federal Distributor or write to

Federal Telephone and Radio Corporation

VACUUM TUBE DIVISION

100 KINGSLAND ROAD, CLIFTON, N. J.

In Canada: Federal Electric Manufacturing Company, Ltd., Montreal, P. Q.

Export Distributors: International Standard Electric Corp., 67 Broad St., N. Y.

EIGHT NICE PEOPLE



*But Brother—
how they can ruin you!*

The people we are talking about are your customers—the eight out of nine of them who, according to nationwide surveys—prefer to buy manufacturers' brands—and no others!

Lose those eight out of nine customers—and where would your business be?

On the other hand, you can actually *increase* your volume and your profits, as hundreds of other stores have done, by these three steps:

- 1 Tie in manufacturers' brands with your own advertising and cash in on the millions the makers spend to promote their products.
- 2 Feature manufacturers' brands—and pinpoint the prestige of the makers.
- 3 Utilize these brands for self-help and self-service for your customers have already been pre-sold on the merchandise.

Do as the majority of America's most successful stores do—get on the brand bandwagon for your own sake—as well as your customers'.

*Brand Names
Foundation*
INCORPORATED

A NON-PROFIT EDUCATIONAL FOUNDATION • 37 WEST 57 STREET, NEW YORK 19, N.Y.

SELLING SERVICE

By HAROLD CHASE

Selling Service begins on the phone. Put your best foot forward answer promptly and pleasantly. How a bright smile lights up a person's face! It makes it pleasant to look at, even though it



may be a plain face. And how contagious a smile is! You usually respond with a smile of your own.

It's much the same with your voice. **The voice with a smile wins!** The kind of a

voice we mean indicates desire to serve courteously. Personality is an asset in any selling. You can have a good telephone personality if you'll be careful about just one thing — **your speech.**

Your **ONLY** means of making a good impression is a pleasing voice, together with a clear and correct way of speaking. Your voice over the telephone is **YOU.** Though no smile or gesture can be seen, you can put a tone or "sparkle" in your voice that will serve you well. I recall a conversation with a blind man who, in the course of the conversation said: "He had a smirk on his face when he told me" Then he hastened to explain that the blind can feel through your tone of voice, feel the smile you have on your face.

Next time you have a customer on the phone, and you want to sweeten him, just try talking all the way through a big smile on your face. It works, I know, I use the smile every time to help smooth a way toward understanding with an irate or unhappy customer. Develop a "personal interest tone" — the **voice with a smile** — and you have learned the lesson of telephone **SELLING SERVICE.**

INDIANAPOLIS STUDY

(Continued from page 15)

that TV Service operators tend to concentrate effort on TV sets almost to the exclusion of radios and record players. Many instances have been reported in which TV technicians, on home service calls, have been asked to take up to five radios for shop service.

During the survey of Indianapolis set owners there was every indication that independent TV Service operators will have to create sales promotion programs to establish acceptance by set owners. A way must be found to "expose" set owners to reasonable charges

for competent TV service because TV set owners tend to evaluate TV Service in terms of what they used to pay for radio service. An effort should be made to arouse set-owner interest in TV picture quality — an **after-sale** promotion best made by service operators and parts distributors.

TV Service operators and parts distributors should give strong support at the local level to industry programs that serve broad objectives and serve to build prestige for TV Service operators as a whole.

SYSTEMS vs. FORMS

(Continued from page 17)

tomer. Upon receipt of the set the bin number is put on all copies in one writing. The first two copies are put in a small customer desk file and the shop card is placed on the production board. This enables the office and the shop to locate the set quickly and it assures the production order.

After the repair is completed, the shop card is put in the office for billing. After billing it is placed in the customer desk file for safe keeping until the money is turned in by the serviceman. The first two copies are placed in the delivery and routing bin. Upon delivery the customer signs that the work is satisfactory and receives the itemized bill marked paid.

ACCOUNTING AND FILING

The serviceman returns the office copy and the money to the office where the copy is run through the register on its way to the accounting department. Shop cards are filed alphabetically so that should a customer call the next day, all information will be available at once. After accounting, the office copy is filed numerically. Every call or job can be located by number or by name.

Another feature of this form is its convenient size. No special filing equipment is needed because two rows can be filed side by side in a standard letter file cabinet. This system has been adopted for successful operation in several other shops. Tie your operation together with a system rather than by just using a service form.

OUACHITA PHILOSOPHER

(Continued from page 19)

that I have made it a point to stay with the manufacturers mentioned, because I was so well satisfied with their stuff.

From the serviceman's viewpoint, he should **insist** on sellin' only the very best parts he can buy. Especially material like TV antennas and rotators that are exposed to the worst possible weather. This principle should be applied to every piece of merchandise

he sells, even though it ain't no bigger than a pilot light.

His reputation is only as good as the quality of his merchandise! If one of his jobs falls apart, the average customer does **not** say, "Oh, that cheap Signal-Snatcher antenna fell all to pieces!" No, sir. What he says is, "Oh, that antenna that John Serviceman sold me fell all to pieces!" Notice the serviceman's name in there, instead of the manufacturer's? You're the one he associates with any piece of merchandise you sell him, and that's all as it should be.

SELL PERFORMANCE

If you're selling him anything, and making a profit, he is entitled to performance. It should be the best item of its kind you can find on the market. He is depending on you, with your technical knowledge of the field, to select and install the very best item of its kind.

What you should be selling is not price, but **performance!** Performance, meaning not only design, but durability. Your item must not only deliver the goods when it's new, it's gotta keep on deliverin' 'em throughout the years. Remember what we just said: he may not know the brand-name of that antenna that fell apart, but he don't have to think very long to think of **yours!** You're the one that is inescapably associated with it, in his mind.

Let that be a good example to you. I've been tryin' it out for over twenty years now. So far as I can see, it's been a howling success. I hope I've kinda got 'em believin', around here, that if I'm willin' to stick my neck out and say something's all right, that it's bound to be all right!

You can do the same thing, if you always insist on buying only the highest quality merchandise, in anything from little teeny resistors to TV sets. Some ol' boy once said, "Quality pays!" — and believe you me, Hiram, he was never more right than in the radio-TV business!

LOOK RIGHT SHARP

The hunting season jist opened up, down here, and I live kinda in the woods. Got m' dawgs locked up in th' woodshed, the cows all shut up in the barn. I caught the ol' mule and painted "MULE" in big white letters, right on his sides, and keep him right up close to th' house. Me an' the ol' woman look right sharp in all directions 'fore we go out of the house, too. Some of these city hunters don't give a dern what they shoot at, if'n it's movin'. They wouldn't bother Uncle Clem, though. Don't reckon he's moved for nigh on a year now, since he found that comfortable place on the porch-post, that jist fits his back.

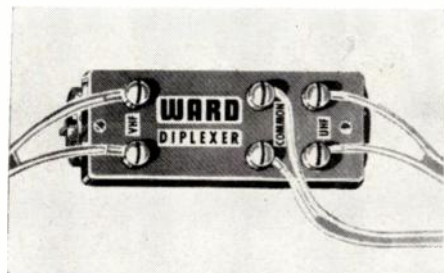
See you all next month. Y'all come

chassis mounting and wiring. The relay is only $2\frac{1}{16}$ inches long and may be supplied with plug-in and dust cover features for use in panels and annunciator racks.



Phono-Cartridge Dispenser

Electro-Voice, Inc., Buchanan, Michigan, is distributing a cartridge dispenser that holds six units in yellow plastic boxes for 92% of all replacement needs. The dispenser is a part of "professional phonograph service" being promoted with a cartridge replacement guide and a new transparent decal for doors and windows.



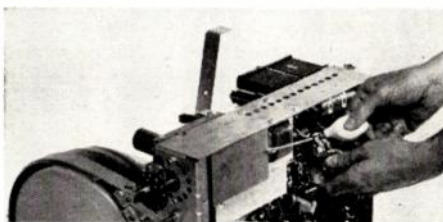
Diplexer for UHF-VHF Antennas

Ward Products Corp., 1148 Euclid Ave., Cleveland, Ohio, has announced a diplexer for use in conversions of vhf installations to uhf; for use with receivers and converters with separate uhf and vhf terminals and where separate antennas are used in fringe areas. The diplexer is a printed circuit using a "twin-tee" filter that combines to provide uniform response over all uhf and vhf channels with minimum insertion loss. The unit is less than two inches square to prevent resonance on short uhf wave lengths. It is sealed in a water-proof plastic case with a mast mounting strap.

Tantalum Foil Capacitors

Cornell-Dubilier Electric Corp., South Plainfield, N. J., has announced new

electrolytic capacitors that utilize tantalum instead of aluminum foil that are reported to provide compactness, ruggedness and the combined advantages of aluminum and tantalum foil. Type TAN electrolytic capacitors use an electrolyte that is non-corrosive. They are available in a wide range of capacity and voltage ratings through electronic parts distributors.

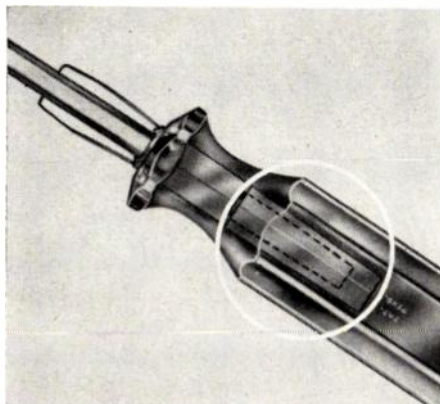


TV Tuner Cleaner

Chemical Electronic Engineering, Inc., 283 Main St., Matawan, N. J., has developed a new TV tuner cleaner that is applied with an atomizer and is reported to leave a protective film unaffected by heat, cold, oil or corrosive solutions. The cleaner, called "Hush," is sprayed directly on the TV tuner to provide a lubricating action that will not build-up dirt layers or arcing surfaces in contact points.

Coupler for VHF-UHF Antennas

JFD Manufacturing Co., Inc., 6106 16th Ave., Brooklyn 4, N. Y., is producing a hermetically sealed printed-circuit coupler for up to three uhf and vhf antennas used with one down-lead. The silver plated printed-circuit is sealed in a moisture resistant, dust-proof transparent butyrate case. This electronic divider network is supplied for attachment to any TV antenna mast with nut stand-offs and is a part of JFD's Jet283 antenna package.



Twist-Proof Screwdriver

Upson Bros., Inc., Rochester 14, N. Y., has announced a new blade-locking method that is reported to increase resistance to torque in screwdrivers far beyond normal requirements. The new method features a precision-molded hexagonal block of tough plastic that drive-fits with close tolerance in a hexagonal cavity in a transparent handle.

(Continued on page 42)

Build your own . . .

TV CAMERA

Industrial television, the next and biggest phase of TV, will provide unusual opportunities for independent service contractors and technicians.

Learn TV camera circuitry NOW by building your own inexpensive TV camera. All parts available from your Parts Distributor.

Put on your own demonstrations and TV promotions. Low cost Television Technicians Lecture Bureau course tells you how.


**Do not delay —
ACT TODAY!**

For information write to:

EDWARD M. NOLL
Technical Director — TTLB
Box 94
Hatboro, Pa.

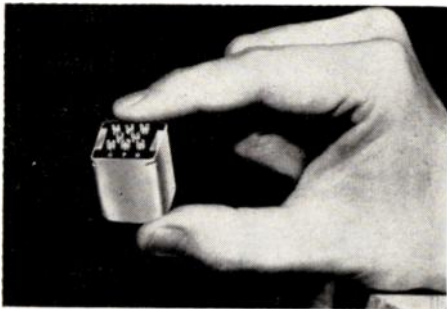
(For quick action, send \$1.00 for first lesson. Money refunded if not satisfied.)

P RODUCT REVIEWS



Miniature Volume Control Switches

Electronic Components Div., Stackpole Carbon Co., St. Marys, Pa., has announced several new miniature switches for attachment to their LP and LR or other standard volume controls. The switches are only $\frac{7}{8}$ " wide and $\frac{9}{32}$ " deep, exclusive of terminals. Type A-10 is dpst rated at 3 amperes at 125 volts or 1 ampere at 250 volts, a-c or d-c. Type A-15 is rated at 1 ampere at 125 volts, a-c or d-c. Type A-11 is an spst switch rated at 3 amperes at 125 volts d-c, or 5 amperes at 125 volts a-c. It is available with or without a dummy terminal.



Miniature Audio Transformers

Standard Transformer Corporation, 3580 Elston Ave., Chicago 18, Ill. has announced a new line of miniature high fidelity audio transformers with exceptional frequency response of plus or minus one db, 30 to 15,000 cycles. These "tinytrans" are sealed and potted in $\frac{7}{8}$ " square, anodized aluminum cases with phenolic terminal boards. "Tinytrans" listed by Stancor include TT-11 for microphone, pickup or line to single grid application; TT-12 for microphone, pickup or line to push-pull grids; TT-13 for dynamic microphone to single grid; and TT-14 for single plate to single grid.

Masonry Drill

Holub Industries, Inc., Sycamore, Illinois, has announced a new masonry drill that can be used for continuous drilling of concrete, stone, brick or other masonry materials and soft metals. The new drill eliminates dust packing and stalling by use of the proper combination of oval flutes, narrow lands and fast spiral. Less pressure is required without removal of drill to clean the hole. The drill may be used with any tool. It is made of tough alloy steel with a Carboloy tip. Sizes range from $1\frac{1}{4}$ " to 1" for spiral fluted drills to $1\frac{1}{8}$ " to $1\frac{1}{2}$ " for straight fluted drills.

UHF Antenna

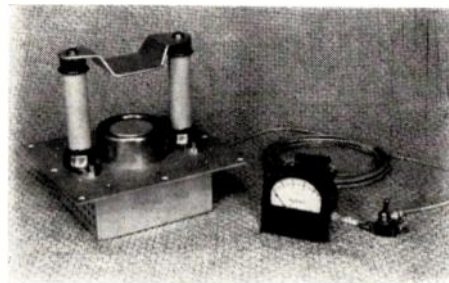
Danforth Manufacturing Co., Monmouth, Illinois, has announced a new uhf antenna constructed with a heavy $\frac{3}{4}$ " aluminum tubular boom with $\frac{3}{8}$ " diameter elements with crimped ends — to eliminate vibration and whistle. It is said to provide high forward gain, excellent front and back ratio and directivity.

Pocket-Size Volt-Ammeters

Pyramid Instrument Co., Inc., Lynbrook, N. Y., has announced a series of three pocket-size volt-ammeters with a "snap-around" feature that permits



current measurement without connection to the conductor. Readings can be taken without circuit interruption or shut-down of electrical equipment. They are suitable for determining load conditions, motor overloads, balancing loads, the location of grounds, tracing shorts, checking motor windings, voltage losses and controllers. Amprobe model 300 has nine ranges up to 300 amperes a-c and 600 volts d-c; model 600 ranges up to 600 amperes and 600 volts; model 1200 ranges up to 1200 amperes and 600 volts.



Radio Frequency Voltmeter

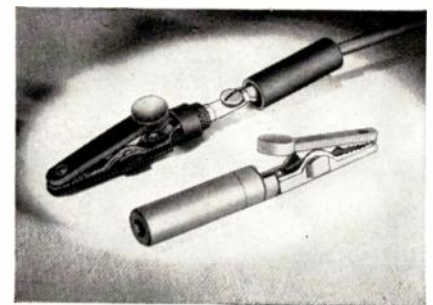
Westinghouse Electric Corporation, Box 2099, Pittsburgh 30, Pa., is manufacturing a voltmeter that measures rms values of r-f voltage that is suitable for measurement of dielectric heating loads. Its use eliminates trial and error methods to determine the amount of heat applied to electrodes. The volt-

meter consists of a capacity voltage divider and a crystal rectifier unit connected to a kilovoltmeter. Two scales are used for rms values up to 10 kv. The instrument is available in two styles: for use at 200 to 3000 kc; and for use at 3 to 50 mc.



High Melting Point Solder

Multicore Sales Corp., 164 Duane St., New York 13, N. Y. has announced the availability of a multicore solder with a melting point approximately 113° C. above that of conventional tin/lead alloys. This special soft silver solder is manufactured in England in the form of a three core wire solder with a non-corrosive, active flux. The new solder is said to be as easy to use as tin/lead — with soldering iron or torch.

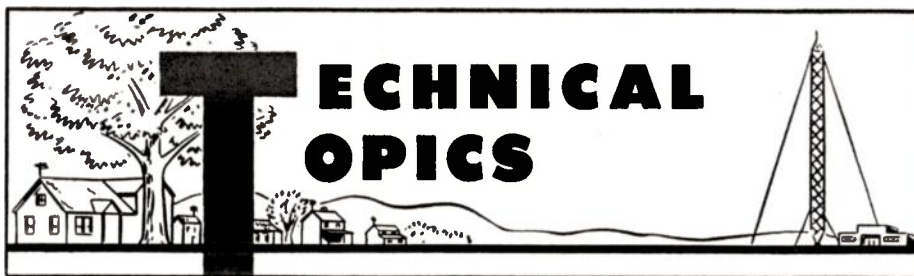


Insulated Test Clips

Industrial Devices, Inc., Edgewater, N. J., has announced new insulated test clips that utilize plastic insulation over the entire clip, including the nose, but without the bulkiness of rubber boots or insulating tape. Nylon insulation conforms to the shape of the clip so that it has the same degree of flexibility and ease of handling as a bare clip. A nylon sleeve is threaded to the clip for simple connection of leads. Terminals are supplied for soldered or screw terminal connections.

Compact Sensitive Relay

Phillips Control Corp., Joliet, Ill., has announced a new compact relay that is said to provide performance equal to that of larger telephone relays for under



The Effect of Technical Developments and Products Upon Your Present and Future Business Activities

By EDWARD M. NOLI

WHAT UHF NEEDS

Two primary problems of UHF propagation are the extension of effective UHF coverage area and the fill-in of dead-spot areas behind ridges and obstacles. There are a number of avenues of improvement for each—improvements and methods that will evolve during the next few years. Effective coverage can be extended with the development of UHF devices with lower noise factors and receiving antennas of higher gain.

UHF antennas of strictly UHF design with gains of 20-40 db must be developed for the weak locations. We must progress beyond the use of modified or reduced size versions of present VHF antennas for these locations. The antenna

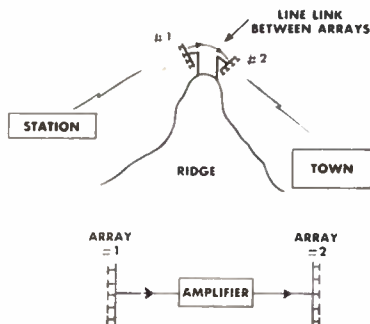


FIG. 1. Fill-in of UHF Propagation Pockets.

mounted UHF amplifier or conversion unit is an encouraging hope for these weak spots where antenna height can help. This method permits us to intercept the UHF signal at peak and minimizes or avoids the severe line losses at UHF.

A satellite system could certainly be used to fill in dead pockets. A small 100 to 200 watt ridge-mounted transmitter fed direct or via microwave can bring coverage to propagation-isolated communities. It would have a highly directional antenna system that would aim signal into pocket area. With care transmitter could operate on same or adjacent channel. It could be station or community owned.

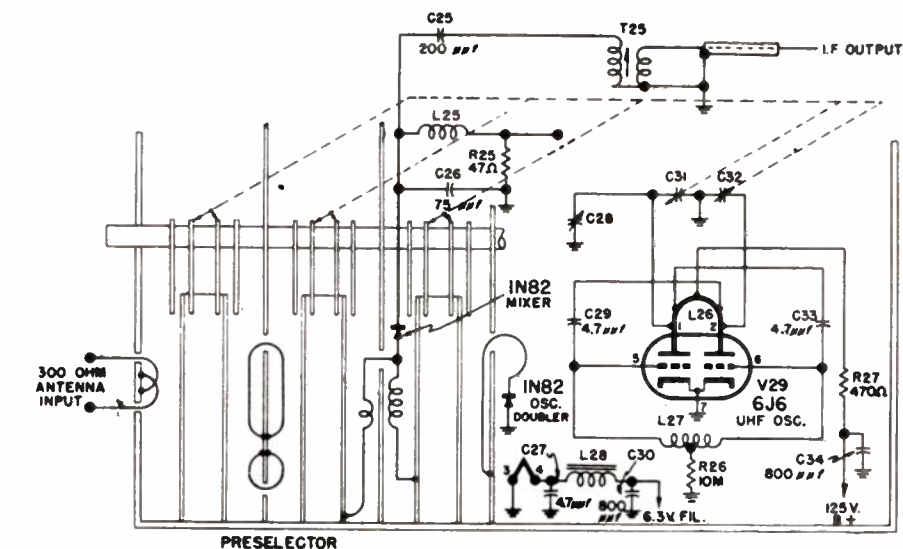


FIG. 3. General Instrument UHF Converter

Passive antenna systems, Fig. 1, have demonstrated their possibilities for dead spots in communication systems. In this system a high gain array of antennas is aimed at transmitter from high signal level location on top of a ridge. A transmission line connects this antenna group with another group that is aimed down the other side into an isolated town. A battery of these installations along the ridge could improve general reception conditions in the area.

To go a step beyond, a booster ampli-

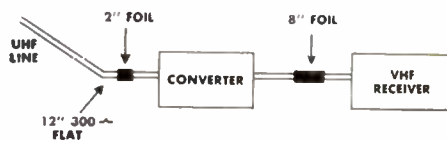


FIG. 2. Peaking of UHF Signal

fier could be inserted between each pair of antenna arrays to further increase signal levels. At present, use of such an amplifier is an illegal process. Certainly, if initial experiments prove this to be a successful approach to more uniform and extended coverage patterns in the UHF primary areas, the FCC must recognize its potential and set up controls

for its widespread application. The systems of limited relay have too long been withheld from rendering full public service. Certainly, in the UHF band with the use of limited powers and directional antennas, there can be little possibility for interference.

SQUEEZING THE UHF SIGNAL

At present it is our responsibility to use to best advantage the UHF devices available operating at the signal levels which exist. UHF is hard work in weak signal locations. An installation is a time-consuming job if the most is to be derived from the available signal.

1. Proper positioning of antenna is more important than the type antenna used. We can't overemphasize the importance of probing the location horizontally and vertically as a ten times improvement in signal level can be attained—a substantially greater improvement than can be obtained with a change from a simple dipole to a high gain antenna.

2. In some locations in valleys and in back of ridges an unusable signal is obtained when the antenna is directed

(Continued on page 36)

MARKEM SERVICE SYSTEMS

The tangible and intangible operating factors which make up a Television Service business are woven together by a paper control system. Whether you handle 100 or 50,000 accounts, you are using some form of paper control. More than likely the method that you have set up is proving inadequate.

Evaluate Your Service Operation

Evaluate your service operation thoroughly and ask yourself these questions. Are there hidden costs, unnecessary expenses or poor inventory controls? Are there excessive administrative and overhead costs — out of proportion to the scope of actual service operations? Is there a lack of control over incoming money?

Answer These Questions

The answers to these questions are your keys to continued success or failure. No business can long remain profitable when the number of office personnel is out of proportion to the number of active service personnel. Service is the part of the business on which it is founded — the part that produces profits. If only half or slightly more than half of the business is productive, your administrative approach needs to be completely overhauled.

Follow the Leaders

It has often been stated that, to be a leader — follow the course of the leaders. You will find that all over the country

key service operators are switching to Markem Service Systems.

Obtain These Advantages

These successful service organizations have installed the Markem Service System because it enables telephone operators, without leaving their seats, to receive, post and schedule all incoming calls or service requests; reduces the number of operators for any given number of accounts; gives service technicians a complete history of each receiver; sets up all required service records in one writing; reduces paper work and requires less space; eliminates individual customer's files and folders; reduces the time to route servicemen to predesignated areas; catches duplicate and nuisance calls; and identifies, immediately, the type of service to be rendered to the particular customer.

Lasting Benefits

These are a few of the many advantages which result from the use of a Markem Service System. Its success is proven by the fact that no service organization adopting this system has ever seen fit to drop it. Al Posoff, treasurer of AAA Television Maintenance Co., Inc., of Brooklyn, N. Y. states the facts like this: "Markem Service Systems have enabled us to reduce our office personnel and increase the efficiency of our entire organization."

MORE TEST IN EACH PIECE

By BURT LEVY, Sales Manager,
Radio City Products Co., Inc.

The design of Radio City Products test line has been guided by the axiom: "maximum test value in each instrument." This thinking has prevailed in the engineering of the Radio City Products "Do-All" test group. We place within each instrument the test facilities of many instruments. Whether the product be a tube tester, signal generator or vacuum tube voltmeter, you will find that each Radio City Products "Do-All" provides the productivity of many instruments — at the cost of only one.



At the Parts Show in Chicago we are introducing an advanced line of "Do-All" instruments, highlighted by a UHF-VHF TV signal generator, Model 750. Whether you presently have UHF in your area, or expect to have it in the near future, here is an instrument that meets the demands of tomorrow — as well as today. The 750, we feel, will be the test hit of the Show.

Imagine one instrument designed to provide the output of a signal generator, a marker generator and a pattern generator — covering all UHF and VHF channels for every TV and FM receiver. There's value in the RCP model 750 beyond its cost. We hope to have it available at your local parts distributor during the latter part of the summer.

For area serviced by VHF channels only, we suggest that you examine the RCP TV "Do-all" generator, model 740-A. Another model prominently featured at the Parts Show in Chicago is the latest in the Radio City Products Line of combination tube testers. An all-around tube and battery tester, RCP model 324 will mean extra service profit because of its extreme versatility. It will test all receiving type tubes, cathode ray tubes, batteries and may be used as a reactivator. Recognizing the counter use of tube testers, Radio City Products has styled a special counter model.



Probably nothing else in test equipment has attracted so much attention in recent years as the Radio City Products Servishop, series 8010. Virtually a complete service package, the TV Serviceman is given a combination that can meet any servicing need in TV, AM radio, FM radio or audio. The Servishop is of portable design. It can be taken into the home where more than 75% of TV servicing is done. See the Radio Service Products advertisement featuring the Servishop in this issue of *Service Management*. Every operator should consider home servicing as the most important phase of his operation — to maintain a high level of profit.

SELL THE BRAND NAME

By L. S. THEES, General Sales Manager,
RCA Tube Department

Aware of the magnetic qualities of a good brand name, they invest considerable time and effort in helping the dealer capitalize on the reputation of the product he sells. For example, the RCA Tube Department is currently sponsoring several promotion programs designed to spotlight the service dealer as neighborhood headquarters for parts and tubes bearing the "RCA" hallmark of quality.

The dealer identification plaque, which is the heart of one promotion on RCA radio and TV tubes, is designed to help the dealer inform his trading area — that the products he sells have a brand name he has faith in and is proud to offer.

Service dealers who make effective use of such promotion material understand one of the major tenets of American merchandising. The American public buys primarily by brand name.

Few consumers are qualified to judge the technical merits of different makes of tubes. Most consumers select products on the strength of their faith in the manufacturer's brand name. This is no less true for electron tubes than it is for candy bars or cough syrup. The average consumer will probably never be able to judge the technical merits of electron tubes, but he will always recognize and more readily accept brand names which have been synonymous with quality.

Shakespeare's assertion that "a rose by any other name would smell as sweet" may hold true for roses, but it doesn't follow that all electron tubes, regardless of brand name, operate with equal efficiency.

Consumers are fastidious about their brands of food, clothing and radio and television sets. Yet, some of these people know little and care less about the brand of replacement tubes for their receivers.

Is this brand unconsciousness advantageous to the service industry? Fortunately, many service dealers take a long-range view. They are aware of the importance of selling brand names. They recognize that their prestige is enhanced by use of brand-name products. They are aware that they operate in a brand-conscious society, that the average consumer insists on products that have long-established reputations for quality.

Dealers who do not use brand name products, or who fail to capitalize on the fact that they do, are missing the benefits of never-ending promotion efforts at the manufacturer level. Companies like RCA have invested millions of dollars in establishing their particular trademarks and brand names as hallmarks of quality.

SNYDER ADDS AERIALS TO 1953 LINE

By BEN SNYDER, President,
Snyder Manufacturing Co.



To give our distributors and TV Servicemen what we consider the finest line of TV aerials, Snyder Manufacturing Co. is now producing improved models and completely new aerials.

Directronic UHF-TV Systems

High on our production schedule this year is the new Directronic UHF-TV Aerial System that has been designed by our engineers — for all channels, from 7 to 83. It employs the 360° electronically switched beam principle that utilizes a directronic beam selector switch without motors or moving parts.

Ultra-Fringe Super Directronic

This system has been designed to provide the finest reception in ultra-fringe areas where signals come from more than one direction. It utilizes the new Snyder AX-548 aerial system. The AX-548 is a four-bay, forty-eight element aerial with high gain that is superior to standard broadband aerials with greater gain on lowband channels.

Snyder has also introduced new models for UHF — with emphasis on the new UHF-3 which is designed for stacking in ultra-fringe areas. It is supplied in three models for channels 14 to 48; 27 to 62; and 47 to 83.

VHF-2 Bow Screen types for VHF channels utilize screen material instead of the solid sheet in conventional bow-tie types — to minimize wind resistance. They are supplied for channels 7 to 13 and 14 to 83.

"Snap-Up" Conical

For low and highband reception, we have developed a dual bay aerial with Speed Clip construction. Type AX-622 is supplied completely preassembled so that elements can be snapped into permanent position on a superstructure locking plate.

Two-Set TV Coupler

Snyder AC-800 two-set coupler has been designed for use with two TV receivers on a single aerial. It is fully automatic, requires no adjustment and has no switches. It may be mounted on either receiver or at any convenient place between them. Maximum gain is provided for each receiver with minimum interaction by means of a specially designed long-lines transformer arrangement.

YOU, TOO, ARE MR. STANDARD BRAND

By HARRY KALKER, Sales Manager, Sprague Products Co.

Did you ever stop to think why you have a name on your place of business? Why you have a letter-head that carries your name? Why you may have a slogan to go with these? In other words: you are selling a standard brand product: you to your customers, the set owners. If you didn't, your prospective customers wouldn't know how to get in touch with you. If you were known as Mr. X and your competition was known as Mr. X, only a flip of a coin would ring your telephone for a service call.

The same holds true with companies such as ourselves, whether we sell Sprague Capacitors or just capacitors. You would never know whose capacitors you were getting. You would never know who to blame if you had trouble with the product. The distributor, in turn, would never know where to return merchandise in case of trouble.

It is because all of us operate under some name that we go to the limit to make sure that our service or our product is the best. We all know that our name or "standard brand" can cause trouble as well as bring us good. If our service and our product are good, we benefit by our standard brand name. Customers do business with us confident that they are getting the best possible for each dollar they spend.

It is the desire of all of us to see that our name is well thought of — to make our standard brand name stand out, head and shoulders, over our competition. The value of our service and products is set in accordance with our relative position in the competitive field.

If you have the No. 1 standard brand name in your field in your territory, you can demand a higher price for your service,



over Joe Doak's whose standard brand name stands a little lower on the list. Your customers also have greater confidence in you as a businessman, as a reliable source of service—when you call their attention to the fact that you are using standard brand products in your service work.

Naturally, it is up to you to capitalize on these things — but they will repay you many fold in goodwill and in dollars.

The use of a standard brand product relieves you of the personal responsibility of guaranteeing the workmanship and performance of a replacement part. It is up to us, the manufacturers, to guarantee that the Sprague Capacitors you purchase through Sprague distributors, are of the highest quality and workmanship and electrical characteristics — and indirectly guarantee to your customer that *both of us* stand behind the product.

A friend has told me that standard brands filter into his home life. When his daughter was leaving home for the first time to go to college, not knowing what to tell her, he reminded himself of a standard brand of mayonnaise. He rushed to the refrigerator, opened the door, pulled out the jar of mayonnaise. There was the answer. It said: "Keep cool but don't freeze."

So I say to you when buying replacement parts to carry on your business: "Stay cool and don't freeze when a standard brand product is offered to you."

To quote John Ruskin:

There is hardly a thing in this world that some men cannot make a little worse and a little cheaper, and he who buys by price alone is the natural prey of such men.

FRETCO EXPANDS ANTENNA PRODUCTION

By JOSEPH E. FISHER, President,
Fretco, Incorporated

Fretaray all-channel antennas with a built-in UHF bay are being featured in displays at the Electronic Parts Show. We have entered the UHF field with exhaustive tests for the development of our Mi-Tee and Bow-Tie series of antennas.

The Mi-Tee series of UHF antennas includes a Mi-Tee screen type and a Mi-Tee corner reflector type. The Bow-Tie series includes a Bow-Tie, a Bow-Tie reflector and a Bow-Tie corner reflector.

One of the newest developments in our Yagi series is the Strat-o-Ray which is constructed with five, eight and ten elements for high and low channels. The Strat-o-Ray series features "jiffy lock" coupling for quick assembly and easy



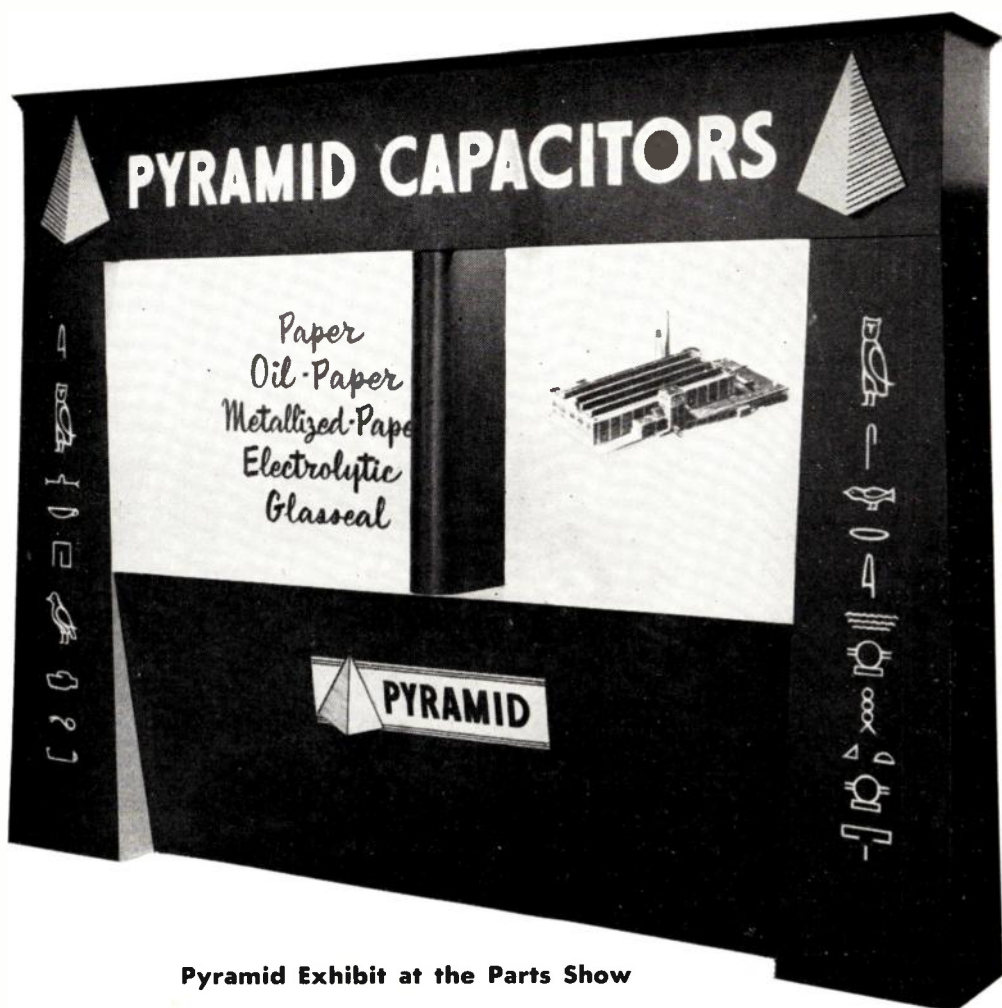
packing. It also includes a sturdy "V" harness for support of multi-element models.

To meet increased demand for these and other Fretco Products, we have consolidated our facilities in a new 50,000 square foot plant at 406 North Craig Street, Pittsburgh 13, Pa. Production, shipping and research are localized under one roof. In our production departments we are

utilizing many innovations in design, construction and assembly—to assist in meeting the increasing demand for Fretco Products.

Our new facilities, and our known desire for research and product improvement, can be expected to result in continued high quality and increased production rates in the future.

MANUFACTURERS SHOW REPORTS



Pyramid Exhibit at the Parts Show

The Pyramid Electric Company is exhibiting at the Electronic Parts Show at the Conrad Hilton Hotel in Booth 509. Its attractive new blue and gold display booth, styled after ancient Egyptian pylons, carries out an "Egyptian theme." Company representatives will attend the exhibit booth to provide information on Pyramid capacitors, and to issue copies of all catalogs.

The latest catalogs describing Pyramid capacitors are offered free of charge. These include: Catalog IMP-1 on IMPs; Catalog MP-2 describing metallized paper capacitors; Catalog J-7 which covers Pyramid's complete line; and Catalog PG-3 providing detailed information on "Glasseal" capacitors that are hermetically sealed subminiature units in metal tubular cases for operation at temperatures up to 125° C.

FTR PRODUCTS AT THE PARTS SHOW

Federal's television picture tubes; new lead-in for UHF television, as well as a full line of cable, and selenium rectifiers, including Federal's new rectifier assembly kit, are being featured at the Electronic Parts Show, Conrad Hilton Hotel, Chicago. Federal will occupy Booth 11 in the Exhibition Hall and Rooms 639-640 in the display room area.

GENERAL ELECTRIC BUSINESS BUILDING AIDS

The General Electric Tube Department exhibit in Booth 209 at the Electronic Parts Show is featuring new service dealer "business building aids" including illuminated indoor and outdoor service signs and a new self-contained dealer window display.

General Electric's public relations program for the service industry is being outlined to distributors in Room 522 of the Conrad Hilton. G.E. is showing a series of advertisements, publicity material and promotional matter that forms a part of their comprehensive public relations program — designed to increase public understanding and respect for the service industry.

The G.E. display at the Conrad Hilton includes copies of advertisements that have appeared in *Life*, *Look* and *Collier's* in behalf of the service industry — and special pamphlets prepared for distribution to consumers.

Distributor Showing of IMF Tube

The first distributor showing of the new General Electric internal magnetic focus picture tube development is scheduled. John T. Thompson, manager of General Electric's replacement tube sales, predicts that the IMF picture tube will eventually have a significant effect on the replacement field.

Major features of the new IMF tube are found in its electron gun design which contains focusing and ion trap units that eliminate need for external focus coils and ion traps.

TEST EQUIPMENT SPEEDS SERVICE

**By N. A. TRIPLETT, Sales Manager
Triplett Electrical Instrument Co.**

Emphasis in the Triplett display, Booth 685, at the May Parts Show demonstrates how complete equipment speeds up the entire cycle in radio and TV Service — and how it contributes, substantially, to the profitable operations of TV Servicemen.

How good test equipment, complete equipment, pays for itself by shortening the whole test procedure, by keeping charges within the reasonable expectations of customers and by preventing call-backs — is a story that bears constant repetition.

The Triplett booth will show our latest tester models including volt-ohm-milliammeters, signal generators, sweep generators, oscilloscopes, vacuum tube voltmeters, tube testers and Triplett electrical measuring instruments.

TV ASSOCIATION NEWS

Transcripts from Service Management's party line

By PENNY MARTIN

Hi! While visiting a friend the other day I was envying her new electric dish washer. Admiring a gleaming stemware glass I had taken from the machine, I exclaimed, "Look how beautifully it dries the dishes!"

"Yeah," replied my host dryly, "now if it would only wash them . . ."

ANDERSON, INDIANA

Radio and television engineers and their families from over the state numbered nearly a hundred at the sixth anniversary observance of the founding of the Radio and Television Service Engineers' Association, Inc. recently.

The observance was in the form of a dinner meeting and party. Roy H. Shephard, one of the founders of the organization, and its first president, was toastmaster.

Since the association's start some of the highest executives in the industry have come to Anderson to address the group which meets the second Tuesday night of each month, said president Joe Groves.

Ray G. Casto was the general chairman of the anniversary celebration. He was assisted by Vernal Layton, Russell Cole, Joe Groves, Everett Deilks and John Emory.

Mr. Shell Ballinger, Field Supervisor of Westinghouse was the speaker at the March meeting of RTSEA. His subject was UHF.

MINNEAPOLIS, & ST. PAUL

New Officers were chosen for both sections of the Twin City Appliance Dealers Association, and affiliate of NARDA, at a meeting which set an all-time high for attendance. New president of the Minneapolis Appliance Dealers Association is George "Bud" Holmes. Vice-president is Phil Moser, H. A. MacDowell is treasurer, and William Warmington is secretary. Members of the Board are Harold Huey, Jim Forsythe, Charles Ecklen and Elmer Olson.

The new president of the St. Paul Appliance Dealers Association is Ernie Hientz. Les Lessard is vice-president and C. Schmidt, treasurer. Members of the Board are Richard Denning, Ray Neuenfeldt and Harold Kunze.

Henry Mayall is Executive Secretary of the combined organizations.

Attendance at the Annual Convention of the dealers was well over 200. Don



Gabbert, retiring president of the Minneapolis group, presided at the afternoon meeting in the Northern States Power Company Auditorium. Speakers included A. W. Bernsohn, NARDA managing director; Morgan Greenwood, advertising manager, Electronics Division, the Philco Corporation; Homer Travis, manager, Retail Distribution, the Kelvinator Division of Nash-Kelvinator, and Burton Paulu, Minneapolis authority on educational television. The DuMont film featuring Elmer Wheeler was shown in the afternoon.

H. B. Price, Jr., of Norfolk, Va., NARDA vice-president, was the banquet speaker. Perry Dotson, sales promotion manager of Schunemans, Inc., was chairman of the banquet meeting.

BILLINGS, MONTANA

At their February meeting the Billings, Montana Appliance & Radio Dealers Association voted to join NARDA. The Association was organized in November, 1951. Their officers are J. R. Westwood, NARDA Director, president; E. F. Carlson, vice-president; Mrs. B. T. Bergeson, secretary, and W. B. Spencer, treasurer. Mrs. Bergeson said, "We hope by affiliating with the National Appliance & Radio-TV Dealers Association to accomplish a great deal more in the future."

ROCKFORD, ILLINOIS

Dealers must educate the public to beware of the exaggerated low prices ad-

vertised for services and over-generous trade-in allowances, otherwise the consumer, the industry and brand names will suffer, Wallace Johnston, president of NARDA, told the Rockford Appliance Dealers Association at a recent meeting.

Holding up examples of ads offering three years free service, two television receivers (one a traded-in 10 or 12 inch unit) for the price of one, free antennas, and a lifetime service guarantee, he said they "show the trickery, the deception, the concealed discounts and the bribes offered customers to buy from one retailer in preference to another. And, knowing the modest mark-ups television allows, we know who's going to pay for those extra offers in the end . . . the customer, although the charge may be disguised, the industry, although the culprits who did the damage may be out of it before then, and the brand names that presented a cloak of respectability behind which the sharpsters could hide."

He emphasized the importance of closer dealer-service contractor cooperation to:

1. Get service data simultaneously with the introduction of new models.
2. Have an adequate reserve of replacement parts, particularly newly introduced ones, at the time new models are first offered,
3. Work for faster and more efficient in-warranty parts replacement including a standardized parts-replacement tag,
4. Secure a full year's life for lines so that servicemen will have longer periods in which to apply knowledge of models they have gained and fewer models will be introduced each year.
5. Team up in adopting codes of ethics such as the Certified Television Installation & Service Program which NARDA introduced two years ago.
6. Develop an efficient and economical trade-in servicing program to facilitate the sale and service of trade-ins, and
7. Give their combined forces responsible, high-level representation in both government and manufacturer relations.

APPLETON, WISCONSIN

Thirty-four television dealers and
(Continued on page 34)

MANUFACTURING

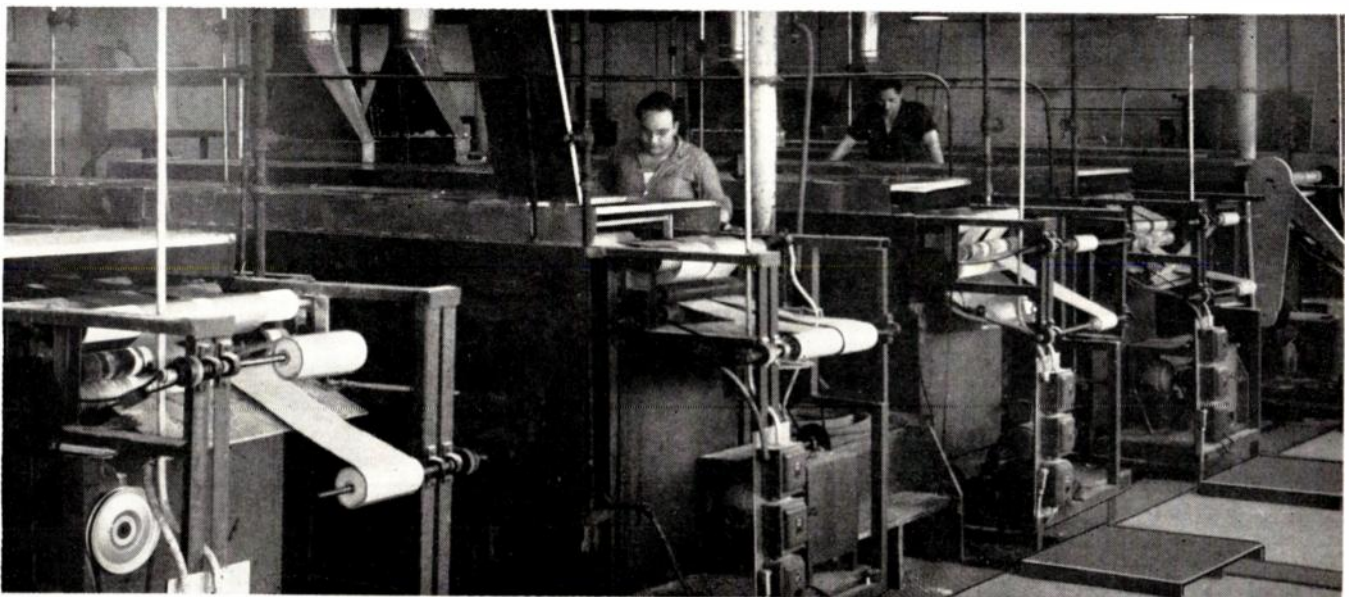
*MANY STEPS IN PRODUCTION CONTROL AND
PLANT OF PYRAMID ELECTRIC COMPANY*



High frequency soldering of glass-to-metal ends hermetically seals subminiature "Glas-seal" types.



Formed aluminum foil is tested for characteristics required by rigid production specifications.



Care taken in the formation of oxide layers on aluminum foil for dielectric properties prevents contamination.

QUALITY CAPACITOR

*A PICTURE STORY SHOWING A FEW OF THE
TESTING IN THE NORTH BERGEN, N. J.*

THE mass-production of high quality capacitors is a complicated process from initial testing of foil and paper to final inspection. Many production factors, including perspiration, soot, invisible carbon particles and atmospheric conditions, can result in breakdown of units.

Many types of capacitors are produced for the service industry, electronic equipment manufacturers and the military, in the 137,000 square foot plant of Pyramid Electric at North Bergen, N. J. Types produced include paper, oil-paper, metallized-paper, aluminum and ceramic. For high temperature operation "Glasseal" types provide reliable service in operations up to 125° C. These units are hermetically sealed with glass-to-metal end seals.

Some of the production operations not shown here are impregnation, plastic molding, aging, the attachment of leads and many inspections. The company research staff is actively engaged in the development of new and improved methods of impregnation, section and casing materials and other features that contribute to long, reliable service in adverse conditions.



Rubber gloves are worn by operators winding capacitor sections — to prevent foil contamination by perspiration.



In Pyramid dry electrolytic section-winding departments each machine turns out thousands of sections every day.

OUACHITA SERVICE PHILOSOPHER

Talks about Brand-Names

By JACK DARR

Y'know, I just been readin' the lick the Colonel hit 'em in his editorial in this here periodical. He sure spoke himself a mouthful there, too. Boiled down, what he says was that the parts manufacturers have been selling the distributor.

Spending their money on a sales effort meant primarily to influence him, instead of concentrating on two more important things: selling the service-man, and making a good, high-quality line of parts.

Out of th' two things, I kinda believe that the last should be first, and the first last, in the order I mentioned 'em. When you git right down to it, the distributor solders in dang few bypass condensers.

What I mean is this: We're the final market. The type and brands of parts that we buy determines the distributor's volume on any item, from resistors to TV antennas. An ever-increasing proportion of TV Servicemen are ordering by brand-names; a much larger proportion should be!

REWARDS AND PENALTIES

By brand-name ordering, you reward the manufacturer who has given you a quality product, and you penalize the one who has let you down. Please don't git the idea that I want you to keep on buying only the kind of parts you were buying ten or fifteen years ago. Uh-uh! Whenever any new item comes out, that looks good, looks like it could do some little job better than an old type, why, give 'er a fair trial. Order a few, and give 'em the works. Test 'em on your own instruments; install one in a set, and see how it works.

F'rinstance, here a few years ago, comes these ceramic bypass condensers. First glance, they looked awful good. Ordered me five or six of 'em, and give 'em a test. Checked 'em on my own condenser-check for leakage, capacity, etc., and used 'em for coupling condensers in a few sets. Figgered from the way they looked, and the name that was on 'em that they oughta do pretty much what they claimed for 'em, and I believe they have. Leastwise, I've been usin' 'em for couplers for about four or five years now, and I ain't replaced one yet!

Only trouble I ever had was a year ago. Got some .05's, of a well-known brand, and the leads busted off when I



tried to mount 'em. Couldn't see as how it was my fault, 'cause I was handlin' 'em as gentle as I knew how. Turned 'em back to my distributor, and he in turn gave 'em back to the feller that made 'em, I guess. Anyhow, the next batch of them I got, the leads stayed with 'em, and we ain't had that trouble since.

IT DON'T HAPPEN NO MORE

Moral of that is, if you have unusual trouble with parts, made by a respectable manufacturer, don't hesitate to let him know about it. Do just like you'd like your customers to do with you; bring 'em back, and give you the details on how it failed. He hasn't got any way of even knowing they're going bad, unless you tell him. If you'll do that, and give him the history of each failure, he'll take steps to see that it don't happen no more.

IN FRINGE OF FRINGE AREA

Speakin' of brand-names, I'd like to hit a couple of licks myself, right about now, for some people who are doing a mighty good job, as far as I'm concerned. Y'know, I live in the fringe of a fringe area, so far as TV is concerned. Our "local" is 40 kw, 195 miles airline, as th' signal flies. Tain't like a crow flies; these Arkansasw crows don't fly that straight! Leastwise when I'm shootin' at 'em, they don't! Our signal runs just a mite faint and noisy most of the time, but still we get a surprisin' amount of pictures. Saw the

whole thing, election night, clear as a bell. There I go, gittin' off the subject again, dang it.

What I started to say was that Taco, with their 980-series antennas (Yagis; we cain't use nothin' else), Radiart, with their big Tele-Roto rotator, Masco, with their Super-Sky-Chief boosters, Astatic, with their CT-1 cascode boosters, Channel-Master, with their Yagis, etc., are sure doing their best to put out pretty good stuff.

All of the products named have been personally tested by me, and have delivered the goods, both as to performance and durability. Of course, there are just a lot of other fellers makin' just as good stuff; I mentioned these because they are the ones with whom I have come in contact — and I'm mighty well pleased with 'em.

DANGED THING FELL ALL TO PIECES

One thing that makes me appreciate 'em so much is an experience I had couple of years ago. Got a two-bay Yagi for one of my good customers, and the danged thing fell all to pieces whilst I was puttin' it up! Really, it did! O' course, I managed to git it stuck back together and in the air, but I've lived in fear an' tremblin' ever since, for fear that dang thing is goin' to come unstuck some windy night and bean somebody.

Naturally, when one of my customers moved and had to move his TV set, guess which one it was! Yep. You guessed it. Thing fell apart while I was takin' it down, too. Got it patched up and into the air again, somehow, but I sure hope we don't have much wind this summer!

On t'other hand, I very cleverly dropped a Taco 980-4 all full-rigged, off'n a ten-foot roof, and the only thing that happened, it bent a couple of directors. Straightened them out, and away we went. That was three years ago, and she's still up. It would be my own antenna I dropped!

Now that's an example of what I was a talkin' about a while ago. If a manufacturer builds a good high-quality product, one that he's willin' to stand behind, I believe that we, who are the ultimate consumers of all that kind of product, will buy it — and buy it in quantities to make that kind of work well worth his while. I do know

(Continued on page 30)

FOIL THE SHOP BURGLAR

Insurance never fully covers damage that can be avoided by making theft uninviting

By ERNEST W. FAIR

TV Service managers who feel that they have no worries because they have adequate burglary insurance are indulging in a false sense of security. Burglary insurance is nice to have. It minimizes the shock of financial loss when robberies take place. But no burglary insurance policy can make immediate replacement of vital supplies, materials or tools that are stolen or damaged. Insurance policies do not replace valuable records which may be destroyed.

BURGLARY PREVENTION

However, TV Service managers can do a great deal to assure freedom from burglaries by preventing them and making theft unattractive. In many instances large plants and shops have effective protection systems which eliminate the problem. When they are burglarized it usually turns out to be an "inside" job.

The situation is different in small shops. Hardly a day passes in metropolitan areas where more than one small establishment is not burglarized. The victims are selected by thieves who prefer the easiest "touches."

Absolute protection is difficult but — it is easy to reduce losses by the practice of a few simple and inexpensive precautions. They will deter most burglars by making prospects look discouraging when they "case" the situation.

A good place to begin a burglary-precaution study is at points of entrance to the shop. Thousands of case histories show that burglars follow a predictable pattern of approach. Over 95% of all burglaries in small establishments follow this pattern.

THE BURGLAR'S BLUEPRINT

Breaking and entering, according to pattern, is made by forcing windows and doors; by removal of pin hinges and unhinging doors; by breaking padlocks with heavy tools; and by picking locks or latches.

Steel bars make it difficult to force windows or doors, particularly at basement or floor level. They will discourage many thieves. Wired alarm systems have merit. Many crooks admit to the police that they have avoided establishments with burglar alarms — because risk of capture is too great.

USE NIGHT LIGHTS

The lighting of areas close to windows and doors is good practice if the illumination is maintained all night. When police prowls see night lights out



they see a trouble signal. Burglars avoid working under or near lights.

Many burglaries have been made easy because of a lack of simple maintenance of doors and windows. Rusty, ancient fastenings are easy to force. Solid, well maintained doors and windows are one of the best forms of burglar insurance. Regular inspections of all windows and doors will assure ordinary protection at all times.

Windows that are hidden from the street and no longer provide efficient daytime shop lighting should be eliminated. In the past every window contributed to natural lighting of the premises. Today modern artificial lighting reduces the need of light from windows. For increased protection from burglars, brick or board up all unnecessary shop windows.

Carelessness is a prime cause of burglary losses. Keys left in locks invite anyone to "pull a job." Keep keys in their place — away from employees, visitors or unauthorized persons. It is also good practice to hammer hinge-pins flat so that they cannot be removed easily. By the same token, screw heads on door locks may be filed down — so that they cannot be worked loose by a quick twist of a screwdriver.

THE POLICE WILL HELP

Periodic checks on the establishment by disinterested people is good policy.

It is standard procedure with many companies. The local police are usually glad to assist in inspections. Insurance companies have inspectors who will be glad to cooperate with helpful suggestions. These disinterested persons are often able to spot dangerous situations quickly. Unlike proprietors, they are not familiar with the premises, are, therefore, less apt to overlook danger spots.

FROM TOP TO BOTTOM

Many establishments have been burglar-proofed below the roof while roof protection has been overlooked. Make certain that the roof is in good repair. Vents should be protected with steel bars. Locks should be fixed to trap doors and other possible points of entry.

Burglaries often begin with the thief hiding in the premises before they are locked for the night. Managements and employees should be alerted to this possibility. It is good practice to quietly check everybody in and out — just to make sure.

Efficient locks are inexpensive. They should be used to replace old or outmoded locks on doors, windows and other points of possible entry. A few dollars spent for good locks is one of the least expensive forms of burglar insurance.

If the company safe is not used to store valuables it is a good idea to leave it unlocked. Should prowlers become inquisitive about its contents they won't have to destroy it to find out what it contains. The company safe should be lighted by night and located so that it is visible from the street. The police frequently recommend a step further — that office safes be imbedded in concrete to prevent removal from lighted areas — or from the premises.

Foil the shop burglar by close attention to these details. Correct the little situations that offer standing invitations to thieves.

Why Some Businesses Go Broke

Running a business is something like flying an airplane. There is a lot of clear weather when only the knowledge of the rules is necessary for safety. But during storms you must adjust yourself to the situation, make sound decisions and employ know-how to get through safely.

— H. B. Price, Jr.

Business Systems vs. Service Forms

Four-copy service forms provide business control system for Chase Television Service, Inc., Detroit

By PAUL H. WENDEL, Editor, *Service Management*

Many times throughout the year Television Service managers receive sample service forms, many of which have merit. Quite a number of these samples are fantastic nightmares, since in their effort to cover all information, they also cover half of a desk—and require so much detailed handling that they add materially to the cost of operation.

A service form must, of course, be complete in its information. It must also be designed to save time. Time saving is of great importance today with high labor costs and low production. However, neither of these points is the major point in considering service forms.

A service form should not be designed as a form but rather as a part of a system to tie the whole service operation together. With this thought in mind several years ago, Harold Chase of Chase Television Service, Detroit, Michigan, designed just such a system.

THE CHASE SYSTEM

The Chase system is tied together and controlled by four-copy service forms. This system consists of: a customer invoice, a filing or office copy and a customer claim check—which is used when the set is taken to the shop. These are backed by a shop card which is printed on both sides. The four forms are gathered and booked, making each set a separate piece with each copy separated by a one-time carbon.

The top parts of all four forms are identical with name, address, telephone number, near, postal zone, make, model, serial number, type of service and the customer complaint. There are also special features incorporated such as guarantee and two places for the customer's signature, one of which the customer signs before any work is done.

ELIMINATES CUSTOMER ARGUMENTS

This eliminates arguments about work done without order. The other signature is proof of work delivered or completed. The bottom half of the customer invoice, and the office copy, are the same to provide billing space for parts and labor in a total. The third copy is the customer's receipt or claim check. The bottom half explains the guarantee, charges for estimates, and other information—so the customer

will understand the service.

SHOP CARD RECORD

The big change comes in the fourth copy, the shop card printed on both sides of light cardboard. The bottom is for billing. It separates the parts and labor for tax and accounting purposes. The back of the shop card carries a form to record the details and the complaint of the last call. The complaint is used only if the customer thinks that the call should be covered by guarantee.

Below this is space for the serviceman's complaint which saves benchmen time on shop jobs. The balance is used for shop repair, parts, operations

and circuits worked on—with space for the job time clock to record.

Briefly, these are the major points in the Chase Service form. There are many other parts to the forms such as date, time of call and the serviceman's name. All calls are recorded on the form with a typewriter or ballpoint pen. All copies carry all the information taken from the customer.

ROUTING FROM FORMS

Routes are made from these forms. Servicemen use them on home calls. When a set is brought into the shop, the claim check is left with the cus-

(Continued on page 30)

REPORT ON BUSINESS CONTROL

*Good management is obtained through
control from efficient paper work*

By LAWRENCE KANOVER, Management Consultant

As a result of the series of articles on business control in **SERVICE MANAGEMENT**, hundreds of requests for information have been pouring in from TV Service organizations all over the country. These requests have shown widespread interest in improved office methods and systems. In response to many requests, visits have been made to several major television centers to obtain first-hand information about the individual problems of TV Service operators. Results of a few of these visits are reported to reveal the need for efficient business control systems.

DETROIT, MICHIGAN

Initial contacts with TV Service operators who requested information began in Detroit where a week was spent visiting large and small operators. One of the most interesting operations was found at Diamond Television Service, Inc., an operation controlled by Mr. Gene Gillis. His operations are typical of those of a large contractor. He sells many kinds of service including: pre-paid; 30-60-90 day contracts; yearly pre-paid contracts; straight COD work; club plans; and parts plans.

He deals directly with the public through advertising and does a substantial amount of dealer and department store work. Mr. Gillis originally used a register form system which became progressively inefficient as his business increased. He, therefore, turned to **Markem Service Systems**. Diamond Television is now using one type of master set for all television service work and is operating out of a central **Revo-File**. This arrangement provides maintenance of an active customer master file for thousands of accounts.

Ballard Radio and Television, operated by Mr. Garland Ballard, was using a plain 5 x 8 card with loose service order forms. When technicians were sent out on calls with a name and address — they had no information about the set requiring repairs. When they returned, this information was transcribed to a 5 x 8 card and the cycle was complete.

With the **Markem Service System** technicians make calls with a full history. In one writing the master card, the customer's receipt and an accounting copy are completed. Mr. Ballard no longer takes time to transcribe informa-



tion. His telephone operator has complete customer information at her fingertips, when a request for service is received.

PITTSBURGH, PENNSYLVANIA

Business control problems in Detroit were the same as those found in Pittsburgh. A service operator reported his problems in servicing two major appliances. Each of the appliances required case histories to guide servicemen. The company was using a continuous form service order in three parts distributed as follows: To the customer; to the bookkeeper; for alphabetical filing in a folder in a standard draw cabinet.

Locating case histories proved to be the greatest problem — because activity in the 'phone section required two clerks to refile service orders. **Markem Service Systems** were installed to eliminate the continuous forms, file folders, file cabinets and **two file clerks**.

CHICAGO, ILLINOIS

Television Service companies in Chicago have the same problem that prevails in large metropolitan areas. In a nutshell, the problem may be defined as: the reduction of overhead costs to meet competition — and stay in business. To a large extent the fight for survival by the TV Service company depends on whether or not its operation is efficient — inside and out. Many service companies use a master card system with a service order. This type of system is cumbersome and about one

half as efficient as it could be.

WASHINGTON, D. C.

In relation to its size and population, Washington probably has more service companies than any other city in the United States. It has very little heavy industry and very keen competition for service business. Competition accents the need for economical operations.

One of the larger self-servicing dealers had a tremendous telephone-answering problem. Hundreds of incoming service requests came in on Monday mornings. To handle calls, the service manager installed a 22-trunk switchboard with seven pick-up sections for telephone operators.

The limiting factor in the number of calls taken by each operator was the amount of information she had to obtain from the customer to schedule a service call. Each service request required the posting of the following information by the 'phone operator:

1. Name and address.
2. Telephone number.
3. Make, model and type.
4. The complaint.
5. Place of purchase.
6. Age of receiver.
7. Type of installation.
8. Contract coverage.
9. Date of contract.

The average time for receiving and posting this information, by experienced operators, ranges from five to twelve minutes. With this physical limitation on receiving service calls, the cost exceeds twenty cents for labor.

This procedure has been replaced by the master card system. Telephone operators now receive, post and schedule service requests in less than two minutes. The cost of verifying information is eliminated. The "central file method" has reduced overhead in another successful and efficient service operation.

Regardless of geographical location — television and air conditioning service companies can solve the problem of inefficient operation. The basic requirements are the same in all areas. Business control systems, such as those described to meet individual needs, are now available in package form for every size of operation.

Good management is obtained through simplicity, flexibility and control from efficient paper work.

INDIANAPOLIS SET OWNER STUDY

*Service organizations have not sold their services to owners of TV,
home radios, record players, auto and portable radios*

By E. C. TOMPSON, Managing Editor,
Service Management

The editors of *SERVICE MANAGEMENT* have long recognized that some of the most serious problems of independent TV Service are due to conditions that only the people in the TV Service business can correct. Unfortunately a great deal of misinformation has been spread about service activities. It has been circulated in the hope of capturing the interest of TV Service operators. Little or no thought has been given to the fundamental problem involved in upgrading public opinion.

Some service associations have demanded that the industry underwrite various types of service training and public relations programs in the interest of independent service operators. Others have joined the ranks of non-industry elements who have been advocating municipal and state licensing.

To get first-hand facts about the public's attitude toward TV Service businesses, *SERVICE MANAGEMENT* has projected a series of set-owner surveys — to uncover data on the servicing of television, home radios, record players and auto and portable radio sets.

SERVICE MANAGEMENT INTERVIEWS

The first of these surveys has been made in Indianapolis, Indiana which has been served by a local TV station, WFBM on channel 6 since 1948. WTTV on channel 10 provides a good signal in the area when an adequate antenna is used.

The study was made with a good representative cross-section of middle class homes. Interviewers found householders very cooperative. Phases of the study were cross-checked to assure accuracy of the data pattern.

During the study in one hundred home interviews we found the following:

- 84 homes had television receivers
- 16 homes had no television receiver
- 48 homes had radio consoles
- 147 homes had table model radios
- 23 homes had battery portable radios
- 62 homes had auto radios
- 62 homes had record players

The hundred homes were located in an area in which local dealers provide service during the first year. Dealers are not interested in building service business.



TELEVISION RECEIVERS

Of the eighty-four television sets in homes, twenty different brands were reported and with the following screen sizes:

- 3 have 10 inch screens
- 11 have 12 inch screens
- 1 has a 14 inch screen
- 7 have 16 inch screens
- 43 have 17 inch screens
- 1 has a 19 inch screen
- 4 have 20 inch screens
- 14 have 21 inch screens

To date twelve of the eighty four TV receivers have required no service. Eight have required one service call under warranty. Four are serviced by owners. The other sixty sets have been in operation for an average of 20.1 months. During that period they have averaged 2.9 service calls with an average cost of \$5.45 per call.

SERVICE CALLS

When we asked set owners whom they called for service, 80% said that they preferred service from their dealer. Local dealers sold 20% of the sets and set-owners call them for service.

Seven sets are serviced by the RCA Service Company; one is serviced by a major department store with an excellent service department but only eleven sets are serviced by independent TV Service companies.

None of the eight dealers reported interest in service work. They said that they would rather have it handled by

TV Service organizations — but they will not recommend any service company to their customers.

ANTENNAS NEEDED

In this area we found that only eleven of the eighty four TV set owners had an adequate antenna for reception from WTTV on channel 10. Dealers in the area are not interested in after-market equipment sales. They sold sets for one-station reception and they avoid sales of supplementary equipment.

The lack of sales promotion is reflected by the fact that only 13% of the TV set owners have adequate antennas. Since an adequate antenna would sell for about \$150, this relatively small area should represent a potential market for about \$10,000 worth of service.

RADIO SERVICE

In the hundred homes included in the study we found the following distribution of radios:

- 48 consoles
- 147 table models
- 23 battery portables

218 Total

The 48 consoles had an average age of 9.7 years. Twenty set owners said that their radios needed service. Four portables needed a complete set of batteries. Four of nine that reported calls to set dealers for service said that their radios were inoperative.

RECORD PLAYERS

The 62 record players reported in the hundred homes were reported to have an average age of 4.8 years. Twenty-six record player owners said that they play records regularly; twenty-four play records occasionally; and twelve do not use record players any more.

Although the climate in Indianapolis is not good for crystal devices, only three record player owners have replaced phono cartridges — and only ten said that they had ever replaced a phono needle!

SIGNIFICANCE OF FINDINGS

The Indianapolis study is not presented as an index of the service situation on a national basis but the results do confirm observations that have been reported by the **Television Technicians Lecture Bureau**. It has become evident

(Continued on page 30)

Standard Labor Charges for Television Service and Repairs

GENERAL SERVICE

1st ½ hour	\$ 5.00	minimum
After 1st ½ hour	5.00	per hour
Home call, pickup, delivery, pull, install and adjust up to 17"	7.50	
18" to 24"	7.50	
Projection	10.00	

Parts exchange — minimum per set	1.00
Picture tube, yoke, transformers, etc.	1.00
Operating tubes, resistors, by-passes	.25
Maximum per set	2.50

All call backs regardless of trouble	2.00 minimum
Call backs other trouble	5.00
Checkout and test at shop:	
when customer brings in and picks up	3.50 minimum
(over 1/2 hour add regularly hourly rate)	

Hourly rate	5.00
Minimum	5.00

Replacement, locate and replace defective tube.....	1.00 minimum
---	--------------

Install built-in	3.00
Locate and repair broken wire (built-in)	3.00
AC interlock — locate and install	1.50

RF tuner	hourly rate
Audio Section IF	2.50
Discriminator	2.50
Ratio detector	2.50
Complete	4.50
Video section	8.50

R.F. section	7.50	
Audio	5.50	
Sweep section	7.50	maximum
Video section	5.50	
Power section	5.00	
Filter unit power section	7.50	maximum
Filter unit sweep section	7.50	maximum

Power section	3.50	
Wave trap and adjustment	3.00	minimum
Audio section	4.00	
Sweep section	4.50	
Video section	5.50	
Focus coil	4.50	

Audio section — volume control, single	\$3.50
dual	4.50
Video section — single	3.50
dual	4.50
Clean controls	1.50

Loose — locate and repair	6.50
---------------------------------	------

Dial cord replacement	simple	3.00
	complex	5.00

	Pts.	Labor	
Modify to remove retrace65	2.50	3.15
Modify to prevent blooming		2.00	2.00
Modify GE 811 Hi V Labor			15.00

Resolder pins	2.00
Install and adjust CRT up to 9"	3.00
10" to 17"	7.50
18" to 24"	8.50
Projection	hourly rate
Rectifiers	
Selenium-replace	3.50

Selenium-replace	3.50
Short	
*All circuits — locate and clear	6.50
(* except tuner)	

*All circuits — locate and clear.....	6.50
(* except tuner)	

Audio section	4.50	
Power section — mounting charge \$4.50		
plus 25¢ per connection	8.00	minimum
Sweep section — output — horiz.	6.50	
oscillator, horiz.	6.50	
output, vertical	5.50	
oscillator, vertical	5.50	
IF transformer, video	6.00	

Pull and install.....	12.50
Clean, lubricate and adjust contacts.....	3.50
Locate and replace defective capacitor or resistor.....	7.50
Locate and repair loose connection or short.....	hourly rate
Yoke	4.50

Installed complete with, not to exceed 50 feet of 300 ohm lead-in, all necessary standoffs and mounting base, with 6 ft. mast on private two-story home.....	30.00
(This is outside installation of lead-in wires. Any fishing of wires between walls or special installation will be quoted on request and there will be additional time charges at \$7.50 per hour, plus material.)	
Installed on chimney with bracket and 6 ft. mast.....	35.00
Installations on large private homes and apartment buildings, prices are quoted.	

All antenna repair work hourly rate 9.00 minimum

Where more than one of the above operations are performed on an individual receiver the total labor charges will be less than the combined charges for the services listed because of the time saved in handling.

TYPICAL AUDIO PROGRAMMING

8:30 - 8:45

Purpose

Selections

Wake up, set pace
Marching Along Together
Beer Barrel Polka
Stein Song
Washington Post March
Riders in the Sky

9:15 - 9:30

Prefatigue, ward off
settled, in-the-rut
feeling.
Look for the Silver Lining
I'll Follow My Secret Heart
Perfidia
Two Guitars
Skater's Waltz

10:40 - 11:15

after rest period

Fatigue, overcome
boredom, stimulate
senses and interest.
Merry Widow Waltz
Cielito Linda
Chattanooga Choo Choo
La Comparsita
Mimi
Whistler and His Dog
Chinatown

12:00 - 1:00

Lunch. Aid diges-
tion, maintain good
frame of mind.
Afternoon of a Faun
Kalua Skies
I Didn't Know What Time It
Was
A Pretty Girl Is Like a Melody
Blue Danube
Zing Zing, Boom Boom

2:15 - 2:45

Prefatigue, combat
drowsiness.
Hello Frisco Hello
Sweet Sue
Green Eyes
Night and Day
Say Si Bon
In the Mood
Carioca

3:40 - 4:15

after rest period

Fatigue, beat bore-
dom, stimulate in-
terest and overcome
clockwatching.
California Here I Come
Careless
Some Enchanted Evening
Hawaiian War Chant
Come On 'a My House
My Bonnie Lies Over the
Ocean
This Is the Army Mr. Jones

5:10 - 5:30

Closing. Stimulate
mind and body to
combat weariness at
home.
There's Gonna Be a Great
Day
County Fair
Robert E. Lee
Victory Polka
Mexican Hat Dance
Happy-Go-Lucky
Sousa March



ARROW ELECTRONICS has opened a new store in Hempstead, N. Y. . . **FRIENDS OF SERVICE MANAGEMENT AWARD** was recently presented to John T. Thompson of General Electric for "outstanding contributions to service management in creating better customer relations" . . . **G & H WOOD PRODUCTS** has been licensed by Klipsch & Associates for manufacture and distribution of a Klipsch-designed loudspeaker . . . **GENERAL ELECTRIC** reports that its GL-5965 tube will play a major role in IBM's new electronic data processing machines; about 2700 will be used in the computer; Carboly Department has announced a new carbide-tipped, self-cleaning drill for boring holes in concrete, brick, plaster and other materials encountered in television antenna installation . . . **HYTRON RADIO & ELECTRONICS CO.** has become the CBS-Hytron Division of Columbia Broadcasting System . . . **MOSLER SAFE COMPANY** has received an unsolicited testimonial via Quentin Reynolds' book **I, WILLIE SUTTON** in which the bank robber says: "The two safes were there just as Tate had said they would be, but my heart sank when I saw them. These were Mosler safes. We can never punch these open." . . . **NATIONAL UNION RADIO CORPORATION** has announced its line of



Old WD-11 & Young Richard Saunders point-contact germanium diodes for computer and television applications . . . **QUAM-NICHOLS COMPANY** has announced that its new factory and executive offices on Chicago's south side will be fully occupied by mid-July . . . **RADIO MERCHANDISE SALES** educational aid program recently included a TV panel discussion in the interest of TV Servicemen's organizations and parts distributors, telecast over KXLY-

TV, Spokane, Wash. . . **RAYTHEON MANUFACTURING CO.** receiving tube division, has made its 250 millionth tube and has completed thirty years of operation; recently presented its new Microlink equipment, reported to be the nearest thing to a vest-pocket television



RCA Plaque . . . for prestige

broadcasting station; has announced new television microwave equipments . . . **RCA TUBE DEPARTMENT** has designed a personalized identification plaque to enhance service-dealer prestige (see cut) . . . **RCA VICTOR** has received the Freedoms Foundation's George Washington Honor Medal for "outstanding achievement in bringing about better understanding of the American Way of Life during 1952;" has announced five components for its industrial camera tube; a deflecting yoke, focusing coil, alignment coil, horizontal-deflection output transformer and vertical-deflection output transformer has reported that its 6146 tube is finding a wide range of applications in new uhf and vhf television transmitters; has unveiled a new line of low-priced radio-phono consoles; has credited television for stimulating important postwar advances in the design and production of radio receiving tubes . . . **TALK-A-PHONE CO.** is featuring "the intercom with the built-in brain" in its Booth 409 at the Parts Show; is displaying a new line in Rooms 619-620 at the Conrad Hilton Hotel . . . **VEE-D-X** cooperative advertising plan has been announced for distributors in a comprehensive brochure containing suggested ads and radio-tv commercials . . . **WESTINGHOUSE** WD-11 tube saved for thirty years by Professor Frederick Saunders of New York Military Academy was recently reactivated in a one-tube receiver by his nine year old son Richard (see cut).

INDUSTRIAL AUDIO APPLICATIONS

Selection of suitable program material follows a definite pattern for greatest utilization of music as a production tool

By **LAWRENCE J. EPSTEIN**, Sales Manager
University Loudspeakers, Inc.

When music in industry is fully appreciated it is regarded as a production tool. It is also recognized as having as great a value as hand and machine tools—to maintain production at a high level. Unlike hand or machine tools, the skill with which it is used depends on industrial management rather than on industrial workers. Workers must be **trained** to get the highest quality and quantity from machines. Music must be **directed** to workers so that they will do their work better, **unconsciously**.

Because of this, industrial music should never be used indiscriminately. Careful planning and application is necessary—to gain maximum benefits on the production line. Knowing this alert managements have evolved a pattern of programming and a technique of presentation. At least one industrial record library has **classified** presentations into four basic groups: opening music, fatigue music, luncheon music and special music.

OPENING MUSIC

Marches, patriotic airs, polkas and cheerful tunes are played for fifteen minutes at the beginning of the workday or shift. These selections are also played at the end of the workday or shift. In this way workers are **invigorated** whenever they arrive at or depart from their work.

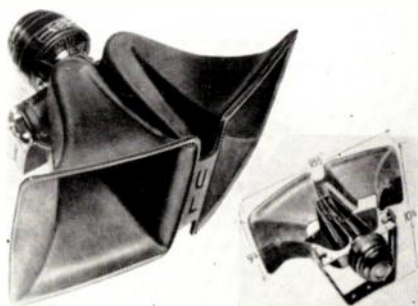
FATIGUE MUSIC

Name bands, popular dance music and musical comedy favorites are played for periods before and after lunch when there is a normal let-down of productivity. The purpose of these programs is to **refresh** workers. Results from this technique have been reported by Burris-Meyer in an address to the American Society of Mechanical Engineers. Stressing the advantages of planned programming according to basic principles, they reported instances where music had increased production by 8% and, with planned programming, 14.8%.

They also noted that, even with the beneficial application of music, there was a consistent production dip at about 2:15 p. m. By refining the program, to combat the afternoon fatigue period, the production dip was reduced 20% and production during other periods was improved by about 6.8%.

LUNCHEON MUSIC

During lunch periods classics, semi



A speaker, amplifier and signal source make a public address system. The variety of commercial types makes it easy for alert sound men to meet competition.

classics, salon music, ballads and works of vocal and instrumental artists are fitting. Music can effectively add to the recreational activities of employees — if dancing is feasible and moderate

dance music is supplied. Special music has been found fitting for use during holiday seasons and for other specific purposes.

INDUSTRIAL AUDIO STUDIES

Research has been conducted by the Policy Holders Service Bureau, Group Insurance Division of the Metropolitan Life Insurance Co. to determine results obtained through the application of industrial music. At the Botany Worsted Mills they found "some very high noise level areas, probably as high as can be found in any industry" but "by specially - designed loudspeakers and proper selection of music, with respect to frequency and continuity of volume" employees look forward to music "even under the worst noise circumstances."

At the Bristol Meyers Company they reported that the company was more than pleased with results that **counteract fatigue, raise morale and increase production**. A similar finding was reported from the Monroe Calculating Machine Co. with mention of the importance of the **right type of music played at the right time**.

In the manufacture of high precision apparatus at Carl L. Norden, Inc. investigators found that no vocals were played — to avoid distracting workers — but suitable selections were played twice an hour during the workday to counteract fatigue—particularly during the late afternoon.

At the Research Institute of America, Inc. music is used in offices, shipping and stock rooms. The company polled its employees and found that 70% approved the use of music without reservation; 3% did not like music; and the balance criticized programming because of "too much repetition, old selections or too many Hawaiian selections." The company concluded that music was "definitely helpful in counteracting fatigue" particularly for employees doing routine work.

Studies were extended to the drafting department of the Chemical Construction Company where it was reported that music relieved employee monotony, fatigue and boredom. At SKF Industries, satisfaction of results from the use of wired music resulted in consideration of the purchase of a plant audio system. Weston Electric Instrument Co.

(Continued on page 33)

Editorial

"OUR OPINION"

A goodly part of this issue of *SERVICE MANAGEMENT* is devoted to products that are being shown at this year's trade show at the Conrad Hilton hotel in Chicago. The Conrad Hilton is the former Stevens. This famous hotel has housed the annual trade show ever since the Stevens was built. Many old-timer remember the first show in the new Stevens that time not quite completed.

The broad growth of the industry in recent years is reflected in the change in the name of the show this year. From the start in the 20's it had been known as the annual Radio Parts Show. Under this name the show gathered the appurtenances of television when TV started to dominate the replacement parts picture several years ago. Few questioned then whether the title Radio Parts Show adequately described the scope of exhibits. Perhaps everyone felt that radio would absorb television and the business would settle down to radios with pictures.

The change of name this year to Electronic Parts Show is very significant. It is significant because it reflects the tremendous change in the basic character of the entire industry. This change took place gradually during the last six years. It is equally significant in depicting the rapid and important growth of electronic circuit equipment and accessories for applications other than broadcast radio, television and audio devices.

The employment of electronic circuitry in industrial applications has grown steadily and without fanfare since the end of World War II. Television is closed circuit work, which is considered to have a tremendous potential for broadening the industry's income capabilities, appears to be ready to go with the introduction of lower-priced TV cameras.

This fast-widening field of applications is also expanding the business opportunities for competent radio-TV service managements. It is heartening to observe that thousands of service management executives are alert to those opportunities.

The most interesting development in service management thinking has occurred in the reappraisal of specialization in television service to the exclusion of radio and audio business.

When the initial deluge of TV installation and service business descended on service shop operators, it appeared to

come in a never-ending stream. There was so much of it available for the asking that competent shops were able to get, without great efforts, as much business as they could handle. However, the never-ending stream of easy business slowed to a trickle and shops that survived the readjustment period found it necessary to use advertising and some forms of sales promotion to maintain a liveable volume of business.

For a period of time the trend of TV service was in the direction of steadily decreasing volume with a high incidence of failure and business abandonment. The TV service business volume curve took a sharp upward turn last summer during the national political conventions. It continued for six months to the Presidential Inauguration in January.

During this period many service business executives, seasoned by the previous periods of boom and bust, began to take a new look at the income possibilities in other phases of the business. Some service operators were shown by set owners, that there is a tremendous dormant market for service in home radio receivers of all types. Many cases have been reported where the customer asked the TV technician, during a service call, to take as many as five AM radios to the shop for repairs.

Some TV Service managements have found, with the wearing off of the novelty of TV, many people have developed renewed interest in recorded music. This reopens a vast market for phono needles, cartridges and new 3-speed changers — in thousands of homes that still have old-style, single-speed players. Others have found real gold in auto radio service. One major TV Service operator, who maintains a special department for auto radio service, recently showed your editors his operating statement. It revealed that his net profit from auto radio service was greater than the net profit from his TV installation and servicing departments. And, he said, it held for less headaches.

The tremendous crowds that visit the audio fairs reveal a wide consumer interest in high fidelity music. To some TV Service contractors the interest spells a new approach for installation and service volume. They have set up special departments for the promotion of custom-assembled and installed hi-fi sound systems.

JSC Engineering Department, constantly on the alert for new developments in television transmission wire, has several new developments for showing at the

May Parts Show in Chicago

Tubular, UHF, Perforated, Open Line TV Transmission Wire, and many other new items will be on display.



Look for the JSC Orange and Blue Disc of quality . . . and be sure to visit us at our Booth 105, May 18th to 21st — we will be looking for you.

And finally, there are those service executives who are using their TV service facilities and operating know how as the nucleus for expansion of installation and maintenance of electronics equipment in industrial application — and to prepare for closed circuit television. This development has crystalized in the work of the **National Industrial Electronic Service Affiliates, Inc.** This organization made a deep impression on the manufacturers who visited their display room during the IRE convention. They were impressed with the facilities, know-how and competent personnel, available nationally in the form of independent service businesses.

As the newly termed Electronic Parts Show gives Parts Distributors a new perspective of the present magnitude of our fast growing industry, it also connotes that national independent service facilities are no longer radio, or television but truly Electronics in scope.

During the coming months your editors will give you, in *SERVICE MANAGEMENT*, staff-written reports on service businesses that have profitably added home radio, record player, auto radio and custom sound to increase their business volume and stabilize their business seasonally.

Do not miss one issue of your business magazine. You will find every one vitally important.

Simpson

TEST EQUIPMENT FOR TV



- Model 480 Genescope
- Model 488 Field Strength Meter
- Model 303 Vacuum Tube Volt-Ohmmeter
- Model 260 Volt-Ohm-Milliammeter
- Model 485 Synchronized Crosshatch Pattern Generator
- Model 276 Oscilloscope Calibrator
- Model 476 Mirroscope
- Model 479 TV-FM Signal Generator

SIMPSON ELECTRIC COMPANY
5200 W. Kinzie St., Chicago 44, Ill.
Columbus 1-1221
in Canada:
Bach-Simpson, Ltd., London, Ont.

the only choice is
Regency
DB 520
the largest selling booster
at any price



**NO MATTER HOW
IT LOOKS
YOU LOOK AT IT
NO MATTER HOW**



the only choice is
Regency
RC 600
the quarter million dollar
UHF converter

64.5505



DR. EDWIN H. ARMSTRONG has reported a new method of transmitting two or three programs over a single FM Channel. . . . **WILLIS L. ASHBY**, sales engineer for Raytheon Television & Radio Corp., was a recent lecturer at the Franklin Institute, Philadelphia. . . . **DR. W. R. G. BAKER**, vice-president of General Electric, has charged that those who fear political control of educational TV have "little faith in our ability to protect our freedoms." . . . **HARRISON J. BLIND** of 1616 Cord St., Indianapolis 24, Ind., is now Kentucky representative for Crown Controls Co., Inc. . . . **HAROLD BECKER**, formerly associate editor of Radio & Television News, is now in charge of the New York office of George Gero Advertising. . . . **JEROME BERGER** has been named jobber sales manager for Brach Manufacturing Corp. . . . **ROBERT T. BOGNER** has been named personnel director for Clarostat. . . . **MARTY CAMBER**, contrary to reports, is still a full senior member of the New York Chapter of "The Representatives." . . . **ROBERT CHESHIRE** has been appointed southwest regional manager for the Hoffman Radio Corp. . . . **JOHN M. CLIFFORD** has been appointed director of personnel for RCA Victor. . . . **HENRY FINE** has resigned as RMS representative in Cuba and South America to affiliate with a Miami, Florida, distributor. . . . **SAM GERTZ**, president of K-G Electronics Corp., made a personal appearance with his delta-beam indoor antenna, in New York, at Macy's Music Festival. . . . **JACK GRAND** has been elected chairman of the board of Granco Products, Inc. . . . **JOHN H. P. GOULD** of Henry Sears & Co., has been appointed director of LaPointe Electronics, Inc. . . . **RICHARD HERSHEY**, national service manager for Philco, recently presented a talk on the do's and don't's of practical trouble shooting — sponsored by JERCS over KYW, Philadelphia. . . . **JEROME M. HOLLANDER** has been appointed senior engineer for Radio City Products Co. . . . **FREDERICK I. KANTOR** has been appointed metropolitan New York representative for R. T. Bozak Co. and the Sound Workshop. . . . **JOSEPH E. KELLEY** has been appointed manager of the northeast renewal sales district for the tube department of RCA Victor. . . . **TED MARTIN, JR.**, has been appointed southeast district manager of renewal tube sales for the tube department of RCA Victor. . . . **GLORIA OVIS**, New York TV starlet, was a part of K-G Electronics Corp. display at Macy's Music Festival. . . . **MAXWELL H. PARKER** has been named New York State sales representative for Westinghouse electronic tube division. . . . **FRANK J. PERNA** of 2506 Stoney Brook Lane, Drexel Hill, Pa., is now operating as a manufacturers' representative. . . . **GWILYM (Welsh for William) PRICE**, president of Westinghouse Electric, was one of the principal speakers at the formal opening of Westinghouse tube plants at Bath and Elmira, N. Y. . . . **CARY QUIRK** of Du Mont Laboratories, was a recent speaker at the Franklin Institute, Philadelphia, under the sponsorship of JERCS. . . . **GORDON R. RAHMES** has been appointed district sales manager for General Electric replacement tubes in Northern New Jersey and Southern New York except New York City. . . . **J. H. ROBINSON** has been appointed sales manager for Aerolite Electronics Corp., Union City, N. J. . . . **VERNE G. RYDBERG** has been appointed assistant manager of application engineering for Westinghouse Electronic Tube Division. . . . **CHARLES E. SALTZMAN** of Henry Sears & Co., has been appointed director of LaPointe Electronics, Inc. . . . **R. W. SAXON**, general sales manager for RCA Victor's home instrument department, recently told Cincinnati TV dealers that strict adherence to ethics is good hard-headed business practice. . . . **JOSEPH SCHLIG**, formerly manager of Westinghouse Electronic Tube Division advertising and sales promotion, has been appointed assistant to the division sales manager. . . . **HENRY SEARS** of Henry Sears & Co., has been appointed director of LaPointe Electronics, Inc. . . . **HENRY L. SHEPHERD** of Shepherd, Murtha & Merritt, has been appointed director of LaPointe Electronics, Inc. . . . **VIN K. ULRICH** of National Union Radio, is serving as chairman of the 1953 Electronic Parts Show educational program committee. . . . **ALBERT F. WATERS** has been elected vice-president in charge of personnel for RCA Victor. . . . **ARNOLD K. WEBER** has been appointed director of organization development for RCA Victor. . . . **ALLAN J. WEINBERGER** has joined Sprague Electric Co. as manager of its Dayton, O., application engineering office. . . . **J. E. WELDY**, marketing manager for the Carboly Department of General Electric, says that the press is a major factor in determining our high standard of living.

Letters to the Editor

FROM HAWAII

We have just received a communication from our Philco distributor in Hawaii, and here is what he says: "Please advise how I may obtain subscription for **Service Management** magazine, as mentioned in your "Sell and Sail" bulletin of March 4, 1953."

I recommend that you drop him a note, and send him a copy of your latest publication:

Service Motor Company, Ltd.
91 S. King Street
Honolulu, Hawaii
Mr. Charles Koseki

Also, advise him what the cost of the subscription will be for a year, and tell him that you are forwarding this information at my request.

R. N. McKINNEY
Merchandising Manager
Accessory Division
Philco Corporation

PHILADELPHIA, PA.

BUSINESS CONTROL

PLEASE SEND FULL INFORMATION ON MARKEM SERVICE SYSTEMS.

HILLER TV
FOND DU LAC, WIS.

Will you kindly send me information on the Markem Service System?

I am gathering information to be used in an upgrading course for TV technicians sponsored by the RTMA . . .

PAUL B. ZBAR
RTMA TV Training Program
New York Trade School
NEW YORK, N. Y.

UHF CONVERTERS & ANTENNAS

. . . On page 18, March issue of **SERVICE MANAGEMENT** you list two performance charts for converters and uhf antennas. They are listed ABC. . . Would you tell us the manufacture and type for each?

WALTER H. PREISSNER
Preissner Brothers
SHERWOOD, WIS.

Letters should be addressed to Readers Report Editor, **SERVICE MANAGEMENT**, 501 Fifth Avenue, New York 17, N. Y.

Service Management

PAUL H. WENDEL, Editor and Publisher

VOLUME 2, NUMBER 8

MAY, 1953

COVER PICTURE

Get on the Brand Wagon

The trade-marks of leading manufacturers of electronic parts that realize the importance, to the TV Service Industry, of **specifying electronic parts by brand name**. For more on this important topic see articles on pages 19, 24 and 25 of this issue.

Features

INDUSTRIAL AUDIO APPLICATIONS	12
— By Lawrence J. Epstein	
INDIANAPOLIS SET OWNER STUDY	15
— By E. C. Tompson	
REPORT ON BUSINESS CONTROL	16
— By Lawrence Kanover	
BUSINESS SYSTEMS vs. SERVICE FORMS	17
— By Paul H. Wendel	
FOIL THE SHOP BURGLAR	18
— By Ernest W. Fair	
OUACHITA SERVICE PHILOSOPHER	19
— By Jack Darr	
QUALITY CAPACITOR MANUFACTURING	20-21
— A Pyramid Electric Picture Story	
MANUFACTURERS SHOW REPORTS	23-26

Departments

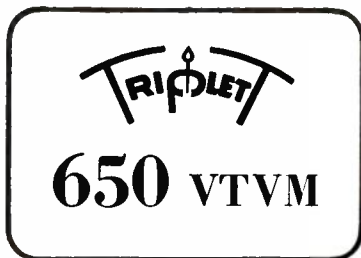
LETTERS	9	ASSOCIATION NEWS	22
PEOPLE AND PLACES	10	TECHNICAL TOPICS	27
OUR OPINION	11	PRODUCT PREVIEWS	28
NEWS BRIEFS	13	TRADE LITERATURE	34

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EXECUTIVE AND BUSINESS: Paul H. Wendel, editor and publisher; John Iraci, advertising manager; **EDITORIAL:** E. C. Tompson, managing editor; Edward M. Noll, technical editor; Penny Martin, associations news editor; Adelee Bowden, assistant editor. **CIRCULATION:** Billy Klamy, manager.

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There's Nothing finer for

Television



This combination of features explains why

- Complete frequency coverage with one probe, 20 cps to over 110-mc. Insulated and shielded RF tube probe, found usually only with laboratory instruments, is included.
- Peak to Peak ACV and RF with one probe.
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- ACrms—Peak to Peak
- 32 Ranges
- Zero center mark for FM discriminator alignment plus any other galvanometer measurements.
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Suggested U.S.A. Dealer Net \$6950 • Prices subject to change without notice.

TRIPPLET ELECTRICAL INSTRUMENT CO., BLUFFTON, OHIO



**OFFICIAL
TV FUSE GUIDE**

15c

LITTELFUSE

Littelfuse 1953 TV Fuse Guide enlarged to include latest models

Both New—Both Needed

Littelfuse new One Call Kit adapted to include fuses being used in latest models—94 out of 100 times one call is all. Littelfuse Inc., Des Plaines, Ill.



G.E. AGAIN TELLS AMERICA THE TRUE STORY OF TV SERVICING

- Four powerful, informative ads in Look Magazine
- Reaching 13,187,140 readers
- Reporting the facts on typical TV Service Dealers
- Convince present and future set owners of the know-how and integrity of TV Service Dealers

● These ads, and those run in Life and Collier's last fall, and the booklet for set owners outlining the requirements of TV service, are all part of the public relations program G.E. is sponsoring in the interests of the TV Service industry.

TV SERVICE DEALERS FEATURE STANDARD REPAIR RATES!

DEVELOPED A NEW TV "PROBLEM" BUT THEY'VE TRAINED 25 YEARS TOO LATE!

TV RADAR INSTRUCTOR DELIVERS TV SERVICE IN NEW ORLEANS

50,000 MEN LIKE "DUSTY" RHODES MAKE TV SERVICE A "PROFESSION"

ME GIVES PATERSON, N.J., A PROFESSIONAL TEAM OF ACE SERVICE MEN

Acts the country. TV service has become accepted as a new profession. One of the reasons is this new industry's high calibre of men. Take Dusty Rhodes of Paterson, N.J. He's on the Chamber of Commerce's Board of Directors. He's president of the Radio and Television Service Men of N.J. He's active in the Community Chest. In other words he's a credit to his calling and his community.

J. PALMER MURPHY, manager, Greater Paterson Chamber of Commerce, says: "Dusty Rhodes is the kind of man any community should be happy to have—a definite asset."

RICHARD E. SMITH, salesman, says: "I've seen innumerable people to him—that shows how much I think of his service." Smith's wife says: "His men are polite and efficient."

MRS. ROSE ZARROW, housewife, says: "Rhodes service is wonderful. As soon as I call them they're here—no party excuses—just like the maintenance men."

SEN. HERBERT H. RHODES, service manager, is a graduate of DeFuniak Training School and attends technical seminars and courses.

One of a series of informative advertisements on TV service Tube Department, General Electric Company, Schenectady 3, N.Y.

GENERAL ELECTRIC

What are you doing to follow through on this effort in this locality?

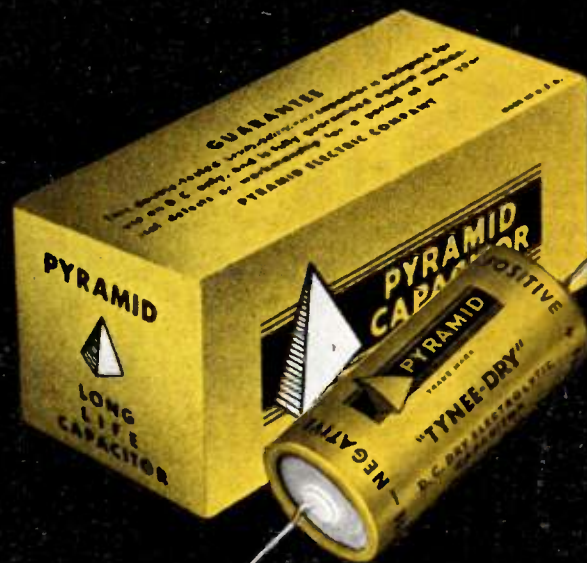
HERE'S WHAT YOU CAN DO:

- 1 You can build customer goodwill through full explanation of service charges.
- 2 You can endorse sound business practices in your own service associations.
- 3 You can actively "sell" service business to increase your income and prestige in your community.
- 4 You can support those distributors and programs which advance the interests of the TV Service Dealer.

TUBE DEPARTMENT, SCHENECTADY, N. Y.

GENERAL ELECTRIC

161-1A3



*In capacitors, your best bet,
your best buy, is*



PYRAMID

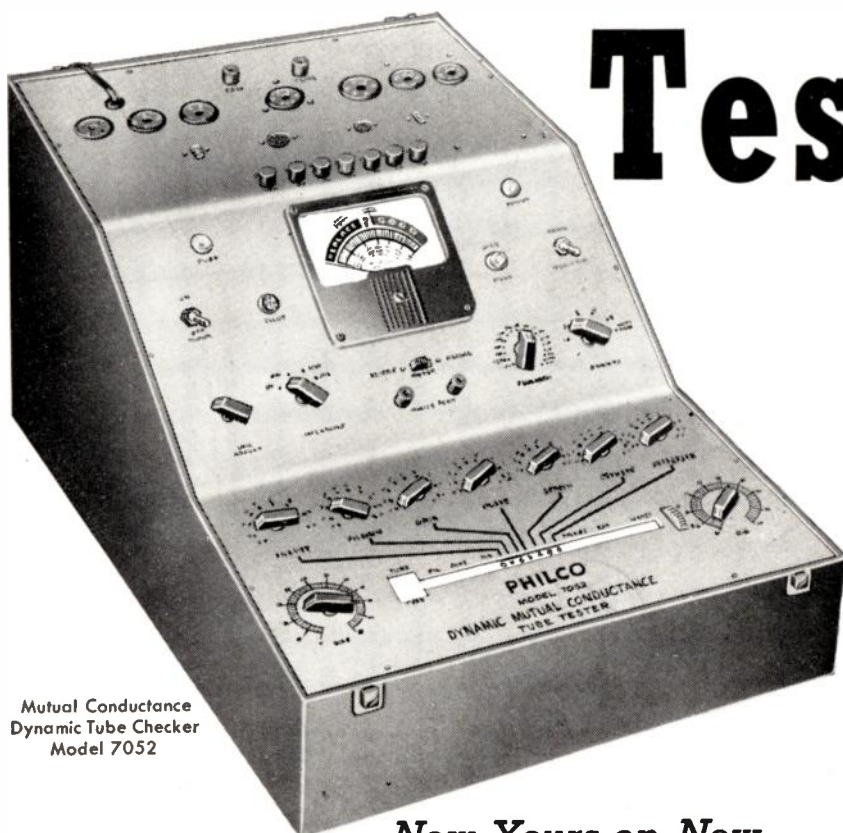
**PYRAMID ELECTRIC COMPANY
NORTH BERGEN, NEW JERSEY**

Write for free literature



ONLY THE **PHILCO** TUBE CHECKER

Tests 'Em All!



Mutual Conductance
Dynamic Tube Checker
Model 7052

*Now Yours on New
SPECIAL PAYMENT PLAN*

Here's Philco's answer to your tube checking problems... a mutual conductance tube checker that tests 'em all from subminiature to acorn low power transmitting tubes... featuring the most sensational roll chart yet designed for efficiency and speed of operation. Its compact design, finished in beautiful grey leatherette with blue panel, makes it adaptable for both portable and counter top use. *Size—17" W x 18½" L x 10" D. Weight—21 lbs. (Shipping Wt. 24 lbs.). Operating Voltage—105-130 volts AC.*

- ✓ Most complete, easiest to use roll chart ever designed.
- ✓ Mutual conductance readings given directly in Microhms.
- ✓ Forecasts remaining tube life!
- ✓ Checks shorts and leaks between elements of tubes.
- ✓ Determines noise characteristics and gas content of tubes.

**FILL OUT AND MAIL COUPON OR
SEE YOUR PHILCO DISTRIBUTOR NOW**



CATHODE RAY TUBE CHECKER

MODEL 7053. From Philco, the *only* emission CRT checker containing a built-in neon bulb calibrator for individual calibration of bulb sensitivity... for pin point accuracy and finest sensitivity each unit is individually calibrated... tests all picture tubes.



3-INCH OSCILLOSCOPE

MODEL 7020. The ultimate in portability... this Philco scope is 2½ times smaller than other 3" units... adaptable for bench use or field servicing... now, avoid guesswork with *pre-set* horizontal and vertical sweep rates. Provide measurements accurate to within 5%.

PHILCO Test Equipment
SPECIFICALLY DESIGNED FOR THE SERVICEMAN

**PHILCO CORPORATION, Accessory Division
Allegheny & "A" Sts., Philadelphia, Pa.**

- ☐ I am interested in the Philco Test Equipment shown here. Please send me details of your **SPECIAL PURCHASE PLAN** for obtaining these units.
- ☐ Please send **FREE** copy of your new booklet on Philco Test Equipment.



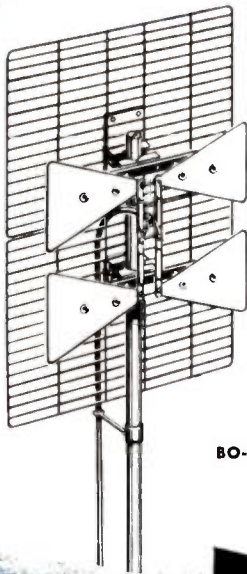
NAME.....
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CITY.....STATE.....

TUNG-SOL'S
STATISTICAL
QUALITY
CONTROL
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produce
tubes of
unsurpassed
reliability

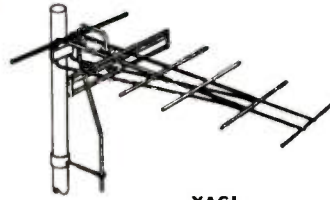
TUNG-SOL makes All-Glass Sealed Beam Lamps, Miniature-Lamps, Signal Flashers, Picture Tubes, Radio, TV and Special Purpose Electron Tubes and Semiconductor Products.

TUNG-SOL ELECTRIC INC.
Newark 4, N. J.

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



BO-TY



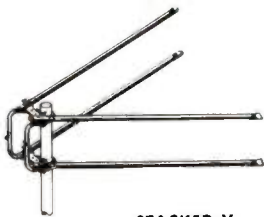
YAGI

UHF antennas by Amphenol

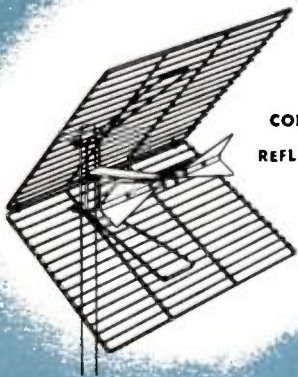
Dealers and Servicemen...

May 18 to 21 your radio parts distributors are meeting in Chicago at the Electronics Parts Show.

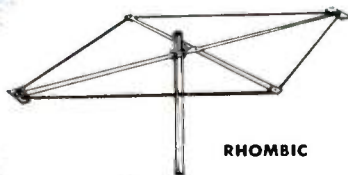
While there, they will consult with AMPHENOL on VHF-UHF markets and upon the applications and values of new antenna designs. They will come back with complete information on the new AMPHENOL UHF antennas illustrated here and will know which types are best suited to your area. Be sure and contact your AMPHENOL distributor for the full story.



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Building to the Future of Electronics



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