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Volume 3 Number 2

November, 1953

**THE NATESA
STORY
PAGE 24**

**YOU ARE YOUR
OWN BEST
COLLECTOR
PAGE 28**

**NATIONAL
SERVICE
DIRECTORY
PAGE 12**



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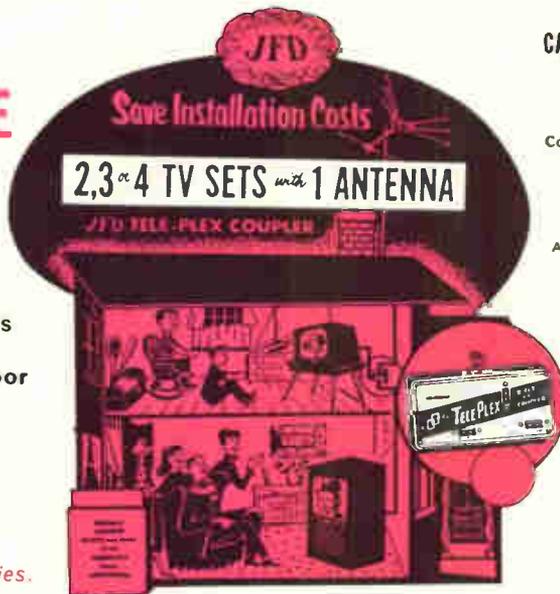
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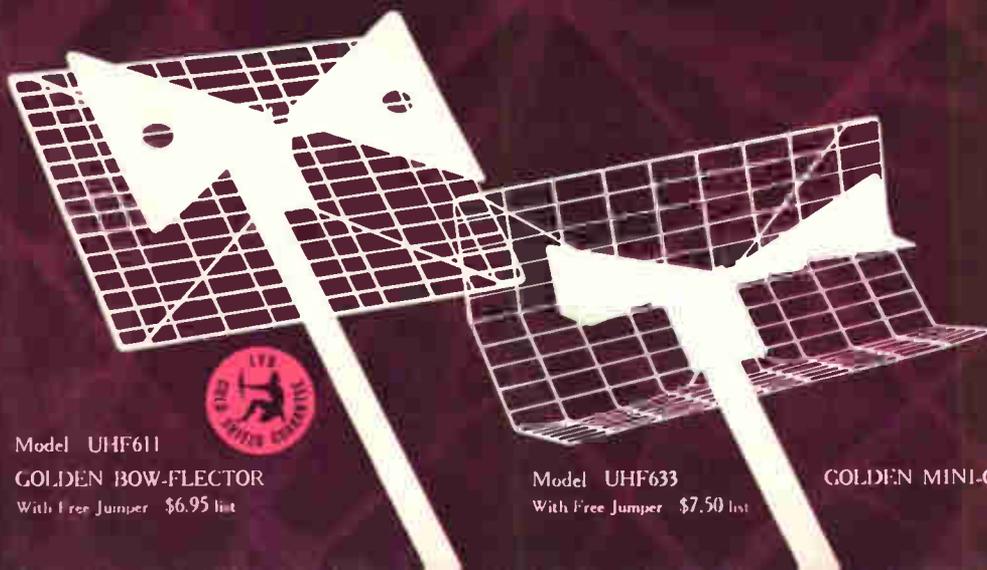
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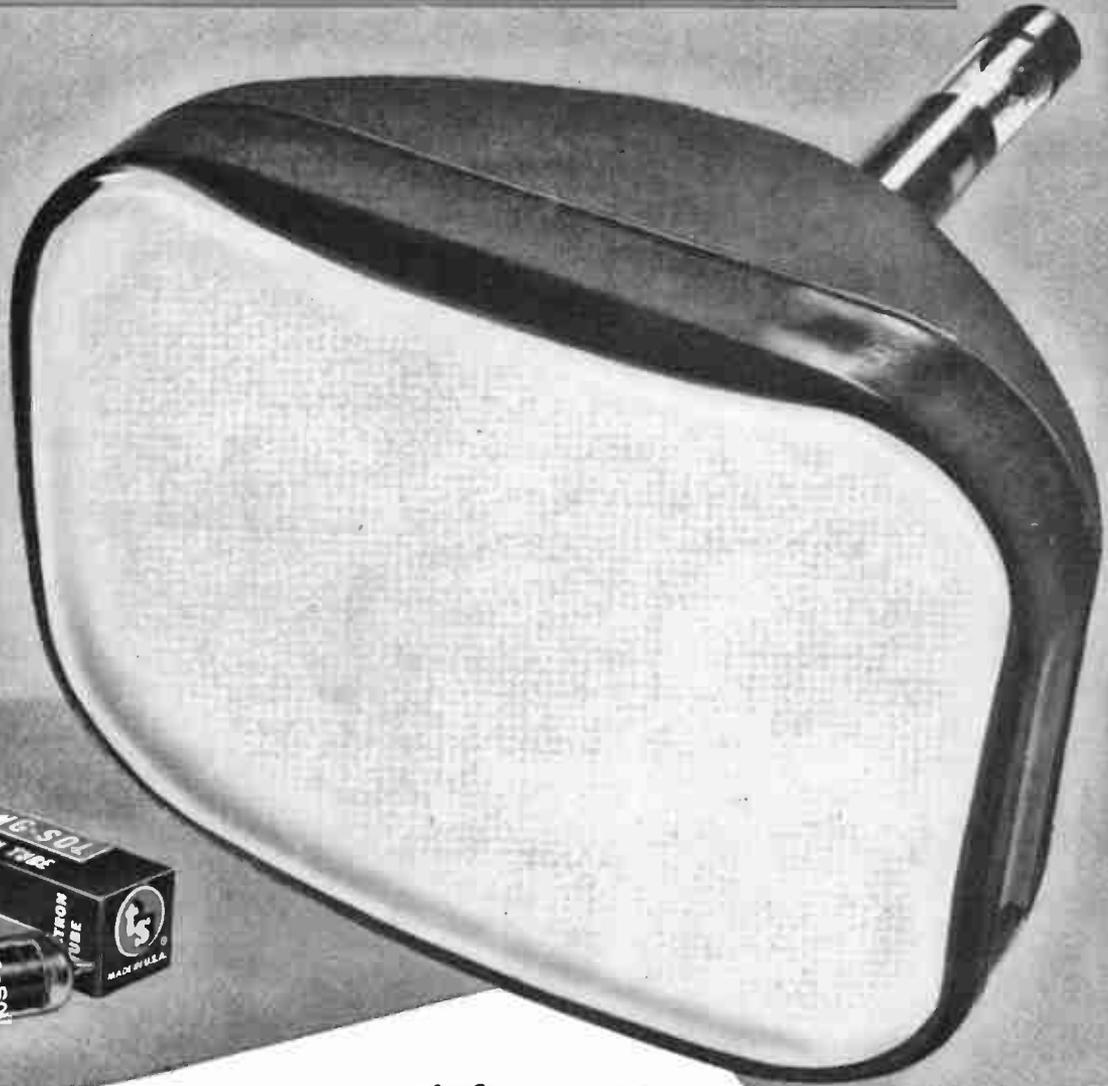
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Service Management

PAUL H. WENDEL, Editor and Publisher

VOLUME 3, NUMBER 2

NOVEMBER, 1953

COVER PICTURE

FRANK J. MOCH, President of NATESA

Hard work, personal sacrifice, tenacious perseverance and loyal associates accelerate success of this aggressive organization. See NATESA Story on page 24.

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Letters to the Editor

TV SERVICE CHARGES

I have heard and read about the article in your . . . May issue on standard rates for TV Service. Please forward copy. . . .

H. E. Stout

Stout Radio & Television

Kansas City, Mo.

Please send me the standard TV labor charges chart. I . . . would like to set up a standard charge for rural service calls. . . . Most of my service calls average 12 miles to and 12 miles return trip. Some go as high as 20 miles and the calls cannot be grouped . . . because of the scattered houses in this county.

John R. Fitchett

G.M. & M. TV Service

Gloucester, Va.

Could you give us information on where we can get the larger size wall chart on break down averages of TV Service charges . . . replace resistor, replace tube, replace horizontal output transformer.

Also, where could one get a sample of a good bench work order form.

James H. Hampton

Hampton Electric Co.

Pontiac, Mich.

Since December 1952 we have been operating a community antenna system here in Ukiah, California. This is an area where television on individual antennas has been very poor to non-existent. Our system is the only logical solution for good television reception, because of topographical features and distance from transmitter in San Francisco.

Just recently we have added sales and service to our organization, and are somewhat concerned with the service policy we will follow. From investigation, we know that service has caused a great deal of difficulty financially for other concerns in this business. Our aim is to insure that each component of the organization will be self supporting and no one part will have to carry the other.

We felt that we should try and gather information on service policies that have been followed with success in areas where television has been established for a number of years. Any information that you can supply us in regard to following points would be most appreciated.

1. Charge for service call
 - a. minimum
 - b. by hour
 2. Charges for bench work
- (Continued on page 22)

PHILCO TEST EQUIPMENT SPECIFICALLY DESIGNED FOR THE SERVICEMAN

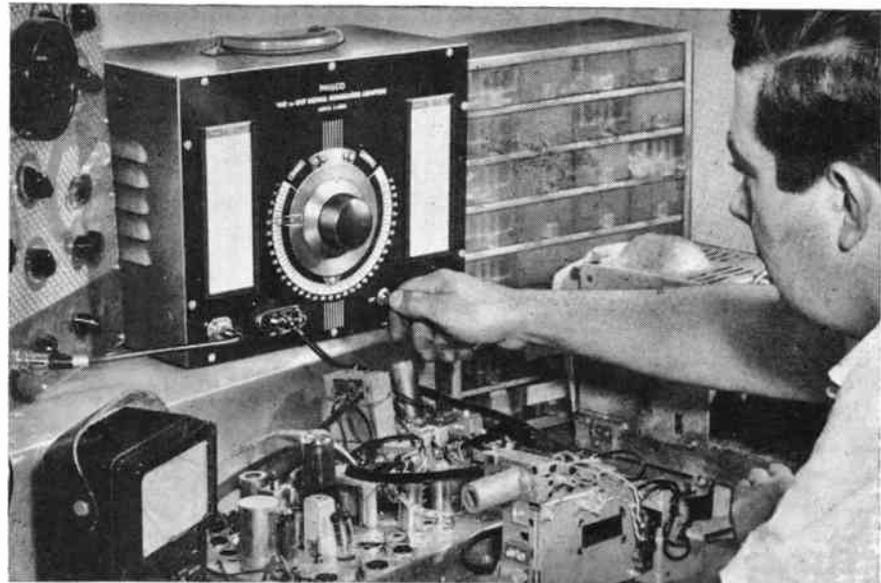
AGAIN PHILCO LEADS THE INDUSTRY

Serviceman's needs seen as Philco's Engineering Goal

This new Philco VHF to UHF adapter pioneers a whole new approach to service problems and at the same time is the most economical and practical unit ever offered. Servicemen are taking full advantage of the introductory demonstrations of this amazing piece of equipment now offered by Philco distributors coast to coast.

The First and Only VHF to UHF Signal Generator Adapter

Continuing its engineering program designed to provide the serviceman with the best possible test equipment Philco Corporation now offers at a fraction of the usual cost an exclusive highly specialized adapter unit for converting the output of VHF TV servicing test equipment to UHF.



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THE next twelve months will apply the acid test of durability to the independent electronic servicing industry. During that period operators of service businesses will be the pin-up boys to all manufacturers who look to the replacement parts industry for a good hunk of their business. Electronic servicing will bask in the spotlight of popularity because the present buyers market, the first in this industry in many years, will continue until the set industry is able to pour out color TV receivers as fast as the market will absorb them.

Next year will be a critical year for the forces of independent service. It can be a year of sound, solid growth and entrenchment for servicing as a stable business activity or it can be a year in which service businessmen muff the ball and fail to score on the breaks the economic and inventive forces have dealt them.

It can re-affirm the time-tested American tradition that small businesses can do a better job of serving the public on product maintenance or it can allow this golden opportunity to slip through its fingers into the hands of big business.

The first test for stature that independent service businessmen will have to meet is their ability to work together on local, state and national levels to initiate and carry through programs of common interest and benefit to the legitimate service industry. This means cooperation with fellow service businessmen. Effective cooperation can only be accomplished through formal, democratically controlled service associations.

It has been gratifying to observe the fast-widening interest of service executives in service association activities. The fourth annual convention of NATESA, reported in this issue of SERVICE MANAGEMENT, attracted many outstanding service operators who heretofore had been lukewarm on the feasibility of service associations. These men carried away with them a new concept of the potential power of organized independent service. Many of them went home firmly resolved to step up association activities in their own cities and states.

The outstanding success scored by the Texas Electronics Association in their state convention last Fall proved what

could be accomplished by determined and hard-working service businessmen in organizing service people on a state-wide basis to build a cohesive and potent force for the good of independent service.

These concrete developments portray the forces of independent service on the march. They are proof that electronic service is not so perversely independent and individualistic that businessmen engaged in it cannot work together as a team. They also prove that service in itself is an industry and not a conglomerate of shoestring and part-time technicians.

The second requirement for independent service businesses to capitalize on the opportunities the coming year will hold, is the positive identification of legitimate service businesses. By legitimate we mean service operations that are full-fledged, full-time businesses.

The service listings on the yellow pages of telephone directories and in the want ad sections of community and daily newspapers have come to be traps for the unwary set owners who need TV service.

The decision of the directors of the Television Technicians Lecture Bureau to compile and publish a national directory of legitimate service businesses is both timely and vitally important to the forces that make up the solid, substantial, basic structure of the independent service industry. For more than five years the Bureau staff has been checking and recording the names of stable service businesses. Its current list of more than 20,000 screened service businesses will provide an excellent basis for cross-checking the registration forms submitted in the Directory compilation program.

However, the degree of success that will be achieved by the publication of the TTLB National Electronic Service Directory in establishing the extent and identity of the forces that make up the backbone of independent service, will be governed by the cooperation given by established service businesses in registering their own businesses and in encouraging their competitive but fellow service businessmen to register their businesses.

Now is the time for teamwork among independent service businessmen everywhere.

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the CBS colortron

By Charles F. Stromeyer, Vice President,

CBS-Hytron Division, Columbia Broadcasting System, Inc.

A Color Picture Tube of Advanced Design

It has been widely recognized that one of the principal obstacles in the path of mass-produced, low-cost, compatible color television has been the means of reproducing the color picture. A variety of methods has been proposed but the method which shows the most promise, and consequently has received the most attention, is that using a cathode-ray picture tube.



In recent years there have been numerous attempts to solve the problem of making the cathode-ray tube reproduce multi-colored pictures in a compatible television system. At least two of these attempts have succeeded in bringing forth a tube which, under proper conditions, is capable of publicly acceptable color pictures. The success of these tubes in public demonstrations and in controlled laboratory tests has shown the practicability of reproducing a satisfactory color picture by means of a cathode-ray tube.

Unfortunately, neither of these tubes can be manufactured in mass-production quantities needed to reduce the cost of a color television set to the point where the average home owner can afford it.

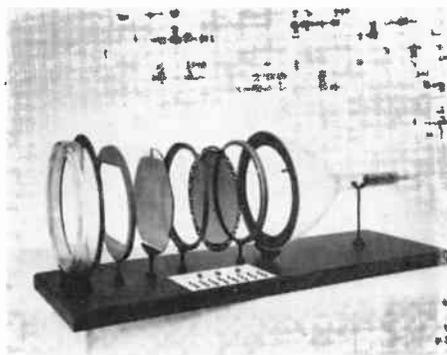
CBS-Hytron has recognized that the color picture tubes announced thus far have certain major disadvantages, all of which stem from their basic design—the planar or flat-mask type of construction.

It has long been known that different types of phosphors are capable of producing different colors when excited by an electron beam. By using a particular phosphor, pictures can be obtained that are either all red, or all green, or all blue. To produce a color picture with the naturalness of life itself, it is

only necessary to have these primary colors—red, blue and green. By combining these in various amounts in the picture, it is possible to create all of the known visible shades and hues of color.

COLOR TUBE DESIGNS

Several solutions have been proposed to this seemingly difficult problem. The CBS-Colortron makes use of three electron beams and a color viewing screen. Three guns, located in the neck of the tube, provide the three electron beams, one for each of the three primary colors. The viewing screen consists of closely spaced color-emitting phosphor dots. They are arranged in triads, or groups of three, one dot of each color phosphor in each triad. Between the electron guns and the phosphor screen is a thin metal mask with holes arranged to par-



Sectional view showing the parts of a planar-mask color television picture tube.

tially block off the electron beams. The holes are aligned so that, for example, the electron beam which is to give the red part of the picture, is allowed to strike only the red-emitting phosphor dots. The masking prevents the red beam from striking areas of the screen containing blue- and green-emitting phosphors.

In a 15-inch picture tube, the mask has about 250,000 holes which register with an equal number of triads. The 750,000 individual phosphor dots are so

small that when seen from a short distance they blend and are indistinguishable as separate dots.

The essential differences between the CBS-Colortron and prior designs are in the method of achieving the masking function and in the location and preparation of the multi-dot phosphor screen.

PLANAR-MASK DESIGN

The planar-mask design of earlier color tubes calls for a screen consisting of a flat piece of plate glass upon which is deposited a triangular arrangement of color phosphor dots. These dots are deposited by a silk-screen printing process to make a total of 250,000 triads.

In addition to the flat phosphor plate, the planar-mask design makes use of a flat metal mask which is pre-stretched and attached to a heavy spacer frame. This involves an extremely delicate problem of registration. The metal mask contains 250,000 holes, nine-thousandths of an inch in diameter.

The tolerance on misregistration on any part of the screen area is about two ten-thousandths of an inch. After the mask has been pre-stretched, it must be bolted to the spacer frame and accurately positioned in relation to the glass plate containing the phosphor dots. Finally, the three must be sandwiched tightly together.

The entire sub-assembly must then be attached to the inside of the tube and a face plate must be sealed in over it to maintain vacuum. The optical quality of the face plate must be good to avoid distortion. These tubes are fragile and are easily damaged during shipment and by rough handling.

Cumbersome structure adds approximately six pounds to a 15-inch round tube. This large mass poses a serious problem in the processing of the finished tube. To evacuate any vacuum tube, the structure in the envelope must be raised to a high temperature to drive out gasses in the metals comprising the structure. This becomes difficult with a complex and critically aligned sub-assembly used in the planar-mask type of color television tube. Its dissimilar materials have different coefficients of expansion. Terrific stresses are built up within the sub-assembly, which often cause the mask to stretch in relation to the phosphor plate.

After the tube is completed, the mask may be damaged by heat caused by excessive beam current due to faulty circuitry or improper receiver adjustment. Because the mask is under tension, such localized heating may cause non-uniform stretching with consequent misregistration and color impurity.

One of the most objectionable problems in connection with the flat-phosphor-plate type of tube is convergence. The three beams are aimed to come together, or converge, and then pass through one of the holes in the mask near the center of the screen. With the three beams sweeping in an arc upon the flat phosphor plate and a matching flat mask, the beams travel farther near the edges of the picture than they do when they are near the center.

This means that the beams go out of convergence. To correct this, complex circuitry and additional labor and time for critical adjustment of the receiver are required. Thus a major part of the responsibility and cost of overcoming the inherent deficiencies of the tube is saddled upon the circuit designer and supplementary components.

The planar-mask type of tube encounters almost insurmountable problems when larger tubes than those already demonstrated are attempted. The mechanical problems of maintaining the extreme degree of accuracy necessary to a successful color tube become prohibitive when one attempts to scale this design upwards.

CBS-COLORTRON DESIGN

To eliminate these drawbacks, CBS-Hytron has developed a new color picture tube, the CBS-Colortron, whose simplicity of construction closely approaches that of current black-and-white picture tubes. CBS-Hytron has asked — "Why is it necessary to have two pieces of glass; one a screen to hold the phosphor dots, and the other simply a window in the end of the tube to seal out the atmosphere?" The most desirable place to put the phosphor is on the face plate, just as it is in black-and-white tubes. This method does away with an extra component and the labor to mount it — and it eliminates additional reflecting surfaces which tend to reduce color contrast. It also removes a source of annoying reflections from room lights and windows.

The most desirable field upon which to project the picture painted by the electron beam is curved. A small section of a sphere is the ideal face plate for a television picture tube. By placing the phosphors directly on the face plate, and by designing the face plate with a curved inside surface, the beam is brought into sharp focus at any point on the screen. This condition, in general, is found in all black-and-white picture tubes and in the CBS-Colortron.

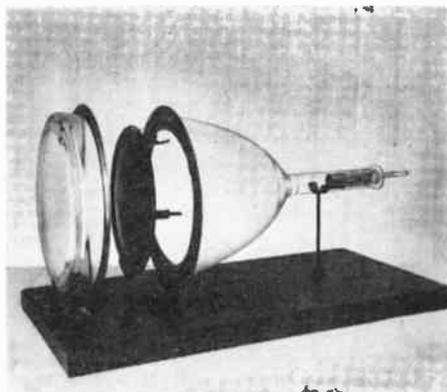
With a curved face plate, a curved mask may be used which greatly lessens the requirements for convergence.

CBS-Hytron has developed a photographic technique, which is similar to

photoengraving, for settling the three color phosphors in the same manner used for black-and-white picture tubes. One of the three colored phosphors is laid down first and is allowed to cover the entire screen. After drying, a photosensitive material is coated over the phosphor. This is then exposed to light through the aperture mask which serves as a "negative."

This use of the mask itself, without any intermediate "master" to introduce error, is one of the most significant contributions to the economical production of the CBS-Colortron. The individual mask may have considerable latitude in the positioning of the holes it contains, and variations in it will cause little difference in the quality of the finished screen made from it. The screen will always register with its mask because they are images of one another.

When exposing the screen, the light source is a pin point of light accurately positioned so as to be in the exact location that the beam from the electron gun will occupy when the face plate is assembled into the finished tube. Light passes through the holes in the aperture mask and exposes the photosensitive material in a pattern of dots all over the screen. The exposed areas, upon development, bind the phosphor beneath them to the face plate. All of the remaining phosphor lying beneath the unexposed photosensitive layer is



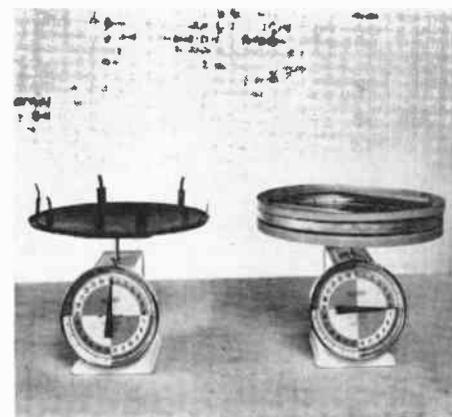
Sectional view showing the parts of a CBS-Colortron television picture tube.

washed away. This leaves one complete dot array containing the phosphor material necessary to produce one of the primary colors.

By depositing over the entire screen again a second a third colored phosphor and by using the same aperture mask, but with the light source moved to coincide with the future position of the electron beam from the second and the third guns, the second and third arrays of dots appropriately spaced between the dots of the first array are progressively obtained.

This technique applies the color phosphors in proper registry directly on the

face plate, regardless of its shape or curvature. In the CBS-Colortron, a suitably curved mask is mated to the curved, coated face plate to achieve ideal conditions which are dictated by the geometry and the physics of the problem. The entire mask assembly is mounted on simple bosses, which are raised points of glass molded around the edge of the face plate, beyond the picture area. This simple method of mounting the mask achieves a degree of accuracy of registration virtually impossible with the older, much more



At left, scale shows six-ounce weight of the CBS-Colortron mask assembly in contrast to six and a quarter pound weight of the planar-mask assembly.

complicated construction of the flat-mask tube. No adjustment is required. Yet the mask is free to expand or contract and will always relocate itself in the proper place for perfect registration with the face plate. It is not affected by a beam current that would seriously damage the planar stretched-mask type of tube.

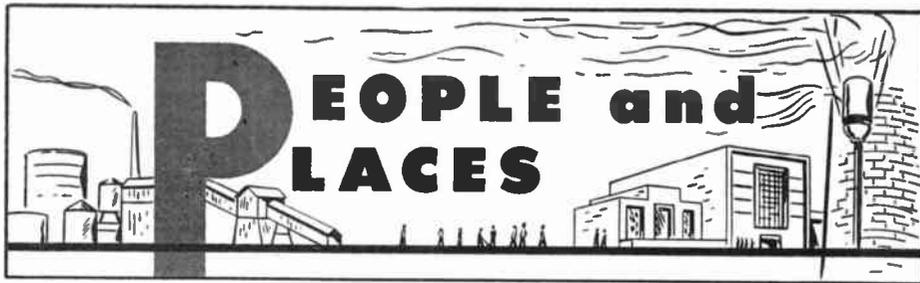
SUITABLE FOR LARGE TUBES

The size of CBS-Colortrons appears to be limited only by the availability of suitable large bulbs and by restrictions of cabinet size acceptable to the public, just as in black-and-white television. The photographic means of producing the phosphor dots is just as easily and accurately performed on large tubes.

The CBS-Colortron has another size advantage. Because it produces the picture directly on the face of the tube, rather than behind the face plate and down in the funnel, it achieves a larger picture for the same length of tube and the same deflection angle. Since an increase in deflection angle does not seriously increase the convergence and focus problems, it is conceivable that tubes can be made having deflection angles equivalent to those now used in black-and-white tubes.

Just as the rectangular picture tube

(Continued on page 23)



November Sales Tips

The fourth of a series of guest editorials
by distinguished sales executives.

By CHARLES R. TIGHE

HARRY E. ALLEN has been promoted to government products manager for the Jensen Mfg. Co. . . . **G. A. BRADFORD**, formerly advertising manager, has been named manager of advertising and sales promotion for the General Electric radio and television department . . . **JULES BRESSLER** has been elected president of the New York Chapter of the Representatives . . . **ALFRED E. BOURASSA**, formerly assistant advertising manager for Carter's Ink, has been appointed assistant to the advertising manager of CBS-Hytron . . . **BERNARD L. CAHN** of Long Island City, N. Y., has been chosen treasurer of the 1954 Electronic Parts Show . . . **BRUCE R. CARLSON**, formerly investment analyst for Stein, Roe & Farnum, has been appointed statistical assistant to the president of Sprague Electric Co. . . . **H. M. CARPENTER** of Tampa, Fla., has been chosen vice-president for the 1954 Electronic Parts Show . . . **A. L. CHAMPIGNY**, formerly replacement sales manager, has been appointed manager of advertising and sales promotion for the General Electric tube department . . . **GEORGE CHAMPLIN** of Centralia, Wash., has won the top award in General Electric's "Write Your Own Ticket" radio and TV Service dealer contest . . . **CLARENCE M. CLARK**, formerly manager of accounting at Elmira, has been appointed manager of the Westinghouse tube plant at Bath, N. Y. . . . **HARRY A. EHLE** of the International Resistance Co., has been elected president of the Radio Parts & Electronic Equipment Shows, Inc. . . . **G. MILTON EHLERS**, formerly president of the Herlec Corp., has been appointed chief research engineer for the Aerovox Corp. . . . **MORT FARR** recently told regional NARDA members at Washington, D. C., that they were like a bunch of mountain climbers tied together by an economic rope, and said that their soundest investment is co-operation . . . **FRANCIS F. FLORSHEIM** of Chicago has been chosen secretary of the 1954 Electronic Parts Show . . . **ROBERT W. FORDYCE** has been appointed district sales manager for Raytheon's television and radio division . . . **DAVID GNESSIN** has been designated educational director for Transvision, Inc. . . . **JACK D. HUGHES** has been promoted to vice-president and operations general manager for Littlefuse, Inc. . . . **BEA JONES**, formerly secretary and treasurer of Spencer Curtiss advertising agency, has been appointed assistant advertising manager for the Regency Div. of I.D.E.A. . . . **ROBERT C. JUSTIS**, member of the NARDA board, recently stated that the importance of the dealer's place in the appliance and TV industry is in direct proportion to his contributions to that industry . . . **CHARLES C. KAYHART**, a former district service manager, has been appointed service training director for the Magnavox Company . . . **LINCOLN N. KINNICUTT**, formerly director of advertising and public relations, has been named assistant to the general sales manager of LaPointe Electronics, Inc. . . . **DICK O. KLEIN** has been appointed vice-president and general manager of Raytheon Distributor, Inc. . . . **LARRY H. KLINE**, formerly supervisor of inventory control, has been named general sales and merchandising manager for Ward Products Div. of the Gabriel Company . . . **MARTIN W. KRENSKE**, formerly industrial sales manager for Standard Transformer Corp. has been named assistant sales manager for the Edwin I. Guthman Co. . . . **DONALD LE ROY**, formerly an ad manager for A. O. Smith Corp. has been appointed advertising manager for Raytheon's television and radio division . . . **DAHL W. MACK** of Scranton, Pa., is the new president of the National Electronic Distributors Association . . . **PAUL G. MATHES**, formerly of the industrial design section of International Harvester's refrigerator division, has joined the staff of Trio Manufacturing Co. as advertising manager . . . **COMMANDER R. H. G. MATTHEWS**, formerly general sales manager for the Honan-Crane Corp. has been named executive vice-president of Burton Browne Advertising . . . **JOSEPH H. MORIN**, formerly with Shure Bros., Inc., has been appointed sales promotion manager for Howard W. Sams & Co., Inc. . . . **ROBERT J. MUELLER** has been advanced to sales manager for Walsco Electronics . . . **GERALD E. MURPHY** of Battle Creek has been named committee chairman for the 1954 Electronic Parts Show . . . **ROBERT D. O'CALLAGHAN** recently told an Iowa NARDA meeting that strengthening brand acceptance by the public through satisfied customers, and teamwork among dealers, distributors and manu-

(Continued on page 22)

The "tickler" file is simple and easy to keep up-to-date. Most successful businesses realize the importance of timing in making contacts with customers and prospects. They use a "tickler" file in addition to a customer and prospect file. For example: let's assume that you have a list of 200 customers. Their names and addresses are placed on an ordinary file card. These cards are filed alphabetically. On each card appears a record of work done, date, charges, comment re: future work and the date when the customer should be contacted personally, by 'phone or by mail.

These data lead to the time-saving of a "tickler" system, which consists of index cards for each month of the year. For example: you have just finished a service job. Your customer may be in the market for another check-up in three months. You enter this fact on the prospect file card and transfer the information to a "tickler" card. Enter the name, address, 'phone number and date. This card is filed in a "tickler" box for the month when the call should be made. Each month take out the current cards and check the jobs due for follow-up that month. Make the calls on the data specified, enter results on the prospect file card. If another call should be made, make note of it on another tickler card and file it after the proper monthly date card. In that way you will be certain not to overlook service needs of customers or prospects who really want service or must be sold.

A dirty shop window with a bunch of parts thrown around like a miniature junkyard reflects the type of service the customer may expect. A check-up in a small city within commuting distance of New York City, whose service organizations compete with local dealers, showed seven service businesses with grimy windows, placards announcing dances, etc. No merchandise except a few parts as dirty as the window; no sign promoting the quality of service — and no people stopping. Make the window sparkle and make the display attract attention, so potential customers will not avoid you and take their business to another shop a few blocks away.

Transistor Notes

Four types of RCA which perform many of the functions of electron tubes are being offered to equipment designers and manufacturers, engineers, scientists and others exploring application possibilities of the transistor, according to R. T. Orth, vice president in charge of the RCA Tube Department.

Two point-contact and two junction types of RCA transistors are now in production at the company's Harrison, N. J., manufacturing plant, he said. Initial output, running into thousands of transistors per month, has been geared to meet demand which has been building up in recent months in anticipation of commercial availability.

The types, application possibilities, and suggested user prices of the four RCA transistors follow:

RCA-2N32: a point-contact type intended for large-signal applications such as in pulse or switching service, in electronic computers and counters and on-off control devices. Suggested user price: \$15.40.

RCA-2N33: a point-contact type intended for use as an oscillator at frequencies up to 50 megacycles. Suggested user price: \$23.

RCA-2N34: a P-N-P junction type designed for low-power, audio-frequency applications. Suggested user price: \$13.40.

RCA-2N35: an N-P-N junction type also designed for low-power, audio-frequency applications. Suggested user price: \$18.40.

Mr. Orth pointed out that today there exists little commercial equipment which employs transistors. Furthermore, these new devices cannot be used in equipment designed for electron tubes without extensive changes in circuit design.

The special features and characteristics of transistors can be expected, however, to have revolutionary impact on the design of future electronic equipment, he said. A glimpse of this future was provided representatives of some 200 electronics firms and defense research officials late last year at a special transistor demonstration at RCA's David Sarnoff Research Center in Princeton, N. J.

Here were shown more than 20 different experimental transistorized devices, including tiny radios and a portable, battery-operated TV set.

(Continued on page 25)



AEROVOX CORPORATION has merged its Wilkor resistor manufacturing with its Hi-Q Division ceramic capacitor operations. . . . **ALLEN D. CARDWELL MFG. CORP.** has announced production of a new UHF-TV converter in a very compact 3½" x 6½" x 8" cabinet. . . . **BLONDER-TONGUE LABORATORIES, INC.** has announced a new easel display as a sales promotion aid for its all-channel "Ultraverter" (see cut). . . . **CBS-HYTRON** has announced the construction of a new Kalamazoo, Mich. plant to produce black & white and full color picture tubes; has announced CTS-Rated tubes for continuous television service, the types, 5AW4 and 6CU6, have been designed to eliminate "hot



B-T UHF Converter Display

spots" or strain areas where ordinary tubes fail before their time. . . . **DAVELLE LABORATORIES, INC.** Springfield Gardens 13, N. Y. is reported to be a new source for printed, stamped or etched circuits. . . . **ELECTRONIC INSTRUMENT CO., INC.** has introduced a new aid for teaching the use of the VTVM. . . . **THE EMPIRE STATE BUILDING** New York's and the world's tallest now has five TV transmitting antennas and two are under construction atop its 104th floor (see cut). . . . **FINNEY COMPANY** has announced an outdoor advertising campaign in Ohio and Indiana to feature its 400-A fringe area antennas. . . . **GENERAL ELECTRIC** reveals part of thousands of entries in its recent tube department contest as Marilyn Fiddler (see cut) relaxes with a final stretch; has announced the first helical antenna for use by WHEC-TV and WVET-TV which will share channel 10 in Rochester, N. Y. . . . **GENERAL INSTRUMENT CORPORATION** has declared a

quarterly dividend of 25¢ per share. . . . **GENERAL MOTORS** United Motors Service Division has announced a series of electronic service classes for its distributors and the service personnel of their dealers; has added its 21st zone warehouse and office to its



G-E's Marilyn Fiddler on final stretch of "Write Your Own Ticket" contest tally.

chain of distribution centers. . . . **INSULINE CORP. OF AMERICA** has announced new aluminum mesh grills for custom-built equipment, that can be readily cut with ordinary tin snips. . . . **JEB SALES CORPORATION** Brooklyn 37, N. Y., has been formed to introduce two new rotators under the direction of Martin Bettan, sales manager. . . . **JERROLD ELECTRON-**

(Continued on page 22)



John F. Garrety, vp Empire State Bldg. and Bernard J. Gillroy, N. Y. commissioner of buildings, inspect new TV antennas being erected on Empire State Tower 1270 ft. above the city.

TTLB

ELECTRONIC SERVICE DIRECTORY



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

A very important announcement was made recently by the Television Technicians Lecture Bureau.

With the cooperation of **SERVICE MANAGEMENT** and other publications, a service business registration program is being launched for the purpose of compiling and publishing a national directory of established service businesses engaged in all phases of installation, maintenance and servicing of radio, television, record players, sound and electronic equipment.

It has been the opinion of the Directors of the TTLB and substantiated by many service executives, that a complete directory of full-time service businesses will remove much of the confusion that exists about the character and make-up of the big independent industry that has grown to handle the servicing of television and other consumer and commercial electronic devices.

The requirements of a service business to get a listing in the National Electronic Service Directory are simple:

1. No charge will be made for the conventional style of listing.

2. The business must be an established service business requiring the entire time and attention of at least one man.

3. Service businesses listed will include all types of companies and shops that handle installation and servicing of electronic products. The business can be either an exclusive servicing company or it may be a full-fledged department of a retail establishment.

4. No part-time or spare-time service technicians will be listed.

The publication of the National Electronic Service Directory will bring six distinct benefits to the independent servicing industry:

1. It will establish the fact beyond question of a doubt that independent radio, television, sound and electronic servicing is handled by an established industry and not by a shifting mass of nameless and faceless electronic mechanics.

2. It will put on record that the bulk of the service business is being handled by legitimate service businesses ranging in size from one-man shops to organizations employing ten or more technicians.

To obtain extra copies of the Official Registration Forms for the TTLB National Electronics Service Directory, send an addressed and stamped envelop to the TTLB Directory Department, P. O. Box 1321, Indianapolis 6, Ind.

3. It will show that competent independent service facilities and personnel are available in all sections of the country—businesses fully capable of handling any type of radio, television, sound or electronic installation, maintenance or service if the right kind of information is made available to them.

4. It will provide the reasons why set manufacturers need not set up their own national or distributor-operated service organizations to handle the installation and servicing of color television receivers.

5. It will help manufacturers of closed circuit TV systems, electronic control devices and specialized electronic assemblies to directly contact competent independent service companies in all sections of the country where their products may be sold.

6. It will help to channel more Industry money into public relations and other programs that are of distinct value to established service businesses.

How to Register for a Directory Listing
Any service shop operator, service company or servicing dealer may register for a listing by furnishing all information requested on the TTLB Service Directory Registration form. A copy of that form is shown in connection with this article. (You may obtain additional copies of the Registration form by sending a stamped and addressed envelope to the TTLB at the address shown on the sample form.)

The Directory will be set up by states

with cities and towns listed alphabetically under each State. The listings of the individual service businesses will also be made in alphabetical order with each listing coded to identify its size and facilities.

Here is a sample listing as it will appear in the Directory:

IOWA

Des Moines

PARAMOUNT TV, (Harold Robbins, Inc.) 1437 Walnut Street

4a, 16, 23yr, 7a, \$250,000 (1,2,3,4,5, 6,7,8)

This means the Paramount TV of Des Moines, Iowa, is owned and operated by Harold Robbins, Inc. It is located in a business-type building, has sixteen employees, has been in business for 23 years and does an average annual volume of a quarter of a million dollars. The organization is equipped and staffed to handle service in all categories from No. 1 through No. 8.

Or, take a listing for a smaller business—a typical one-man service business:

ARKANSAS

Mena

OUACHITA RADIO SERVICE,

Jack Darr

4a, 1, 15yrs, 7a, \$10,000 (1-abc, 2,3,4, 5,8a)

This indicates that the Ouachita Radio Service is owned and operated by Jack Darr. It is a one-man business that has been in operation for 15 years, handles service exclusively and does an average annual volume of \$10,000. The operator of this business is one of those typically versatile men who can handle any type of service on electronic products bought and used by the general public.

Still another type of listing will be that of set retailers who service only the sets they sell. Such businesses do not solicit or accept general service work and many of them would prefer to drop their customers' servicing after sets are out of warranty.

INDIANA

(Continued on page 22)

OFFICIAL REGISTRATION FORM

To obtain a no-charge listing in the
TTLB NATIONAL ELECTRONICS SERVICE DIRECTORY

Please type or print legibly to insure an accurate listing of your business

1. Name of Company or Business _____
Telephone number _____

2. Name of Owner or Manager _____
OWNER - MANAGER

3. Location — Street Address _____
City _____ State _____

4. Type of Location — (Check Which)
 Business District Residential District Other

5. Number of Employees including owner _____

6. How long has business been operating? _____

7. Type of Business: (Check Which)
 Exclusively Service
 Basically Service but Sell Sets
 TV Dealer with General Service Department
 Receiver Sales & Customer Service Only

8. Average annual gross volume of service business handled \$ _____
Submitted by (Please sign) _____
COMPANY _____
Title _____
OWNER OR COMPANY OFFICER _____

NOTICE: All pertinent information must be given including the checking of the service categories shown below that you now handle. Do not check categories of service that you are not handling at the present time.

We now handle the following types of service: (Place an X in the box alongside those types of servicing you are handling:

<input type="checkbox"/> 1. TELEVISION	<input type="checkbox"/> (e) Industrial
<input type="checkbox"/> (a) Shop Service	<input type="checkbox"/> (f) Citizens Band
<input type="checkbox"/> (b) Home Service	
<input type="checkbox"/> (c) Antenna Installations	7. INDUSTRIAL ELECTRONIC EQUIPMENT
<input type="checkbox"/> (d) Multiple Systems Installations	<input type="checkbox"/> (a) Engineering Facilities
<input type="checkbox"/> (e) Service Own Sales Only	<input type="checkbox"/> (b) Installation Facilities
<input type="checkbox"/> 2. AM/FM RADIO SERVICE	<input type="checkbox"/> (c) Maintenance & Service
<input type="checkbox"/> 3. RECORD CHANGERS & PLAYERS	<input type="checkbox"/> (d) Factory-appointed Service on Electronic Instruments, etc.
<input type="checkbox"/> 4. AUTO RADIO SERVICE	<input type="checkbox"/> (e) Closed Circuit TV — Camera Maintenance
5. SOUND EQUIPMENT	8. OTHER HOME ELECTRONIC DEVICES
<input type="checkbox"/> (a) PA, Call, Intercoms, etc.	<input type="checkbox"/> (a) Wire & Tape Recorders
<input type="checkbox"/> (b) Custom Sales, Installation & Service of Hi-Fi Sound	<input type="checkbox"/> (b) Electronic Control Equipment
<input type="checkbox"/> (c) Electronic Organ Servicing	9. APPLIANCE REPAIRS
<input type="checkbox"/> (d) Home Sound Movie Projectors	<input type="checkbox"/> (a) Major Appliances
<input type="checkbox"/> 6. 2-WAY COMMUNICATIONS SYSTEMS	<input type="checkbox"/> (b) Traffic Appliances
<input type="checkbox"/> (a) Police	
<input type="checkbox"/> (b) Taxicab	10. Other Equipment for which specialized service is provided (give details):
<input type="checkbox"/> (c) Truck Lines	_____
<input type="checkbox"/> (d) Marine	_____

No charge will be made for a standard listing of your service business or service department.

When completely filled out and signed by owner, manager, partner or corporate officer, mail this form to:

TTLB DIRECTORY DEPARTMENT
P. O. Box 1321
INDIANAPOLIS 6, IND.

Form SM1

(Note: Additional copies of this form may be obtained from your Parts Distributor or by sending a stamped and addressed envelope to the TTLB at the above address. Request Form SM1-Directory.)

PRODUCT REVIEWS

Remote Control for TV Booster

Blonder-Tongue Laboratories, Inc., 526 North Ave., Westfield, N. J., has announced a two-piece remote control unit for any of their TV amplifiers, UHF converters or distribution units, to provide automatic operation from the TV set "on-off" switch. The power control unit of model RC-1 plugs into any 117 volt a-c outlet and receives the TV set line cord. It contains a thermal relay, an indicator light and fuses. The remote portion at the unit to be controlled feeds a-c power and accepts TV signals. A single heavy duty 300-ohm line is used between the two parts. Any unit drawing up to 1/2 ampere at 117 volts a-c can be operated at distances of 1,000 feet or more with the B-T remote control system.

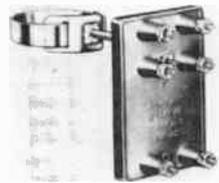


Meter Reversing Polarity Switch

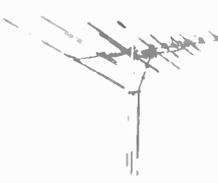
Pomona Electronics Co., 524 West 5th Ave., Pomona, Cal., has announced a meter reversing polarity switch designed to assist electronic technicians. The switch, Peco model MS-1, may be used to reverse polarity when making circuit tests, without removing meter leads. The switch is operated by inserting the unit on the left side of a Simpson 260 meter by means of tip jacks. Its toggle switch position indicates the polarity of the circuit under test.

New VEE-D-X Products

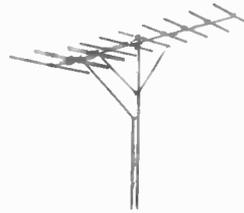
LaPointe Electronics, Inc., Rockville, Conn., have announced new products



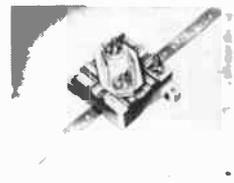
Channel Separator



Vee-D-X Special



Vee-D-X 10-Element



Lightning Arrester

including an antenna designed to include yagi power and directivity with all-channel performance; a series of broadband yagi antennas for primary, fringe and near fringe VHF areas; a hi-low yagi phased with the company's new printed circuit isolation filter; and a lightning arrester believed to be the first hermetically sealed unit with electrodes fully protected from deterioration due to weather aging.



All-Channel VHF Antenna

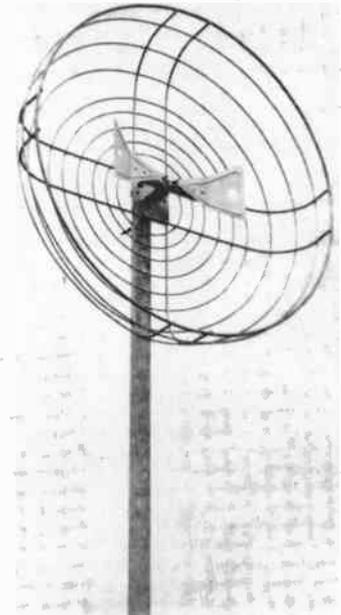
Technical Appliance Corporation, Sherburne, N. Y. has announced a broad-band, triple-driven antenna that is said to provide a high and relatively flat response over the entire VHF low band channels. It consists of three directors, three driven elements and a reflector. Primarily designed for fringe areas receiving two or more low band channels, No. 1840 antenna is also recommended for areas in which a channel change is contemplated.



Wrought Iron TV Table

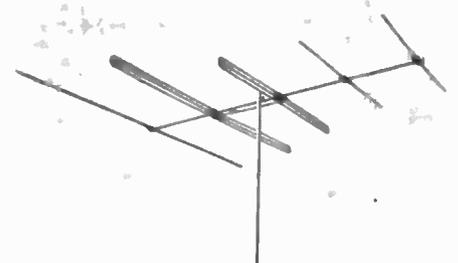
Vineta Mfg. Co., 2738 N. Sheffield Ave., Chicago 14, Ill., has announced a new "Easy-Whirl" wrought iron TV turntable of ball bearing construction to permit full 360° turning of TV set for convenient viewing in the best posi-

tion. It is reported to be strong enough to support 1,000 pounds and is adjustable for cabinets up to 32" wide.



JFD UHF Antenna

JFD Manufacturing Co., Inc., 6101 Sixteenth Ave., Brooklyn 4, N. Y. is now producing a new UHF antenna reported to be patterned after radar and microwave antenna with parabolic reflectors. This type of reflector is claimed to increase direction of UHF to the bow tie dipole, to increase receiving power of the antenna and to prevent snow and ghost-producing back and side signals.

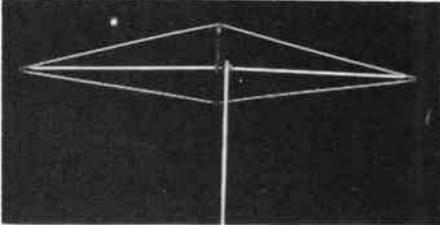


Channel Master VHF Antenna

Channel Master Corp., Ellenville, N. Y. has announced the development of a preassembled five-element broad band VHF Yagi antenna. Model 626 is reported to provide high, uniform gain over channels two through six. The antenna includes a Z-math impedance-matching system for good 300 ohm match in single and stacked arrays.

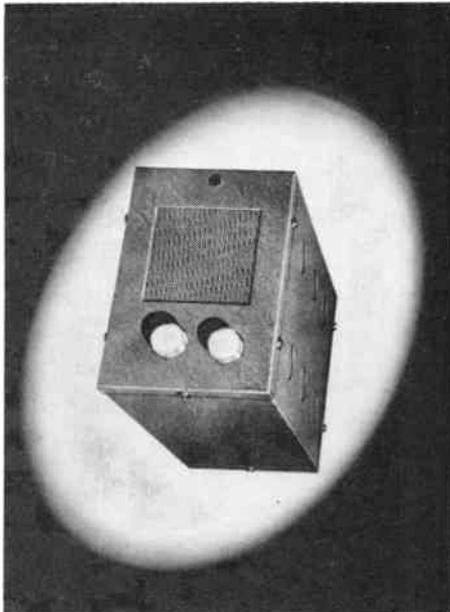
Piston-type Capacitor

JFD Mfg. Co., Inc., 6101 Sixteenth Ave., Brooklyn 4, N. Y., has announced production of a new piston-type variable trimmer capacitor for UHF TV sets that provides an overall length of one inch at maximum capacitance. Range of capacity of the new model VC3-G capacitor is 1.0 mmf. to 8.0 mmf. They are equipped with a silver band fused to the exterior of precision drawn glass which serves as the stationary electrode. Insulation resistance is at least 10,000 megohms.



UHF Rhombic Antenna

Brach Mfg. Corporation, 200 Central Ave., Newark, N. J., has announced a new broadband UHF antenna, the Rhombic, model 496, that has been designed to meet the requirements of primary and secondary signal areas. It is reported to have sharp directional characteristics that are effective in areas bothered by signal reflection and station interference. It features all-aluminum construction with non-hygroscopic insulators, weatherproofed terminals and resistor and good impedance match to 300-ohm transmission line.



FM Mobile Receiver

Radio Apparatus Corp., 55 N. New Jersey St., Indianapolis, Ind., is producing a new crystal controlled, fixed frequency FM mobile receiver for operation between 30 mc and 50 mc. The new unit, model FMC1-L, is a tunable mobile unit that is available for six-

or twelve-volt power sources. It is reported to provide sensitivity better than one microvolt and narrow band width to assure maximum performance.

Wire-Wound Resistors

The Daven Co., 191 Central Ave., Newark, N. J., has developed a new precision wire-wound resistor, type 1119, for applications where high values of resistance are required in small sizes. The new resistor is only $\frac{3}{64}$ " in diameter and $\frac{3}{32}$ " long for values up to 1 megohm. The units are rated at $\frac{1}{4}$ watt and are non-inductive. Standard tolerance is plus or minus 1.0% but units can be supplied with accuracies to plus or minus 0.05%.

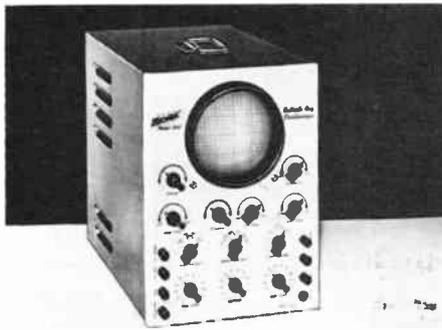
Peak-to-Peak VTVM

Radio City Products Co., Inc., 152 W. 25th St., New York 1, N. Y., has announced its advanced design



peak-to-peak VTVM, model 655, to provide true readings of complex, sinusoidal voltages in directly read rms values and the analysis of video waveforms.

The instrument is of high impedance design, utilizing a balanced bridge type d-c amplifier, high impedance voltage divider and a sensitive meter. It is suitable for measurement of peak-to-peak d-c amplifier, high impedance voltage in seven ranges; rms a-c from .1 volt to 1,500 volts, in seven ranges; d-c from .02 volt to 1,500 volts, in seven ranges; and resistance varying from .2 ohm to 1,000 ohms.



Five-inch CR Oscilloscope

The Hickok Electrical Instrument Co., 10514 Dupont Ave., Cleveland 8, O., has announced a new five-inch cathode ray oscilloscope to provide good quality for use by TV Servicemen. This low-cost model 665 has a frequency range from 0.5 cycles to 700 kc, down 3 db. It is reported to have excellent stability, no drift, less than 1% tilt and less than 2% overshoot. It operates on 35 watts with an accelerating potential of 1775 volts. A unique feature claimed is its fusing arrangement for the B-plus line.

Trade Literature

"SERVICE SAVER" BOOKLET

A booklet containing photographs of forty possible troubles with a TV set's picture has been published by Raytheon Television & Radio Division, 5921 West Dickens Ave., Chicago 39, Ill. The booklet has numbered pictures so that TV set owners can identify trouble when they call TV Servicemen for repairs.

CAPACITOR ENGINEERING BULLETIN

An attractive 4-page, 2-color engineering bulletin, NB-154, has been published by Cornell-Dubilier Electric Corp., So. Plainfield, N. J., to provide data on its new "Budroc" steatite-cased paper tubular capacitors. The bulletin lists design features, physical dimensions, test data and supplies graphs showing average temperature characteristics.

ILLUSTRATED ENVELOPE STUFFER

A new illustrated 3-color envelope stuffer with a wood-grain effect cover is available from Universal Woodcrafters, Inc., La Porte, Ind. It shows the company's 1954 line of wrought iron and extension-top tables for TV sets. The tables are described in detail and space is provided for imprinting.

PISTON CAPACITOR BROCHURE

A 4-page brochure on piston-type variable trimmer capacitors is now available from JFD Manufacturing Co., Inc., 6101 16th Ave., Brooklyn 4, N. Y., and its distributors.

ANTENNA BOOKLET

A 30-page illustrated booklet describing the VEE-D-X line of UHF and VHF antennas and accessories is available from LaPointe Electronics, Inc., Rockville, Conn. The booklet includes information on thirty-six products and is of handy wallet-size.

TRANSISTOR MANUAL

A profusely illustrated transistor manual has been published by the Electronic Tube Div., CBS-Hytron, Danvers, Mass., to provide the need for comprehensive, down-to-earth information on transistors. The eight-page manual is divided into three parts treating theory, data and applications. Copies of the manual may be obtained from CBS-Hytron distributors or by writing to CBS-Hytron.

TV ANTENNA FOLIO

An attractive four-color TV Antenna Folio has been published by the American Phenolic Corp., 1830 South 54th Ave., Chicago 50, Ill., to graphically illustrate the importance of antenna installation for better TV picture quality. Each copy of the folio contains new Amphenol antenna and accessory catalog sheets. The folio is distributed free of charge to anyone on request.

OUACHITA SERVICE PHILOSOPHER



*Talks about names, prospects,
and opportunities.*

By JACK DARR

Well, sir, I got a letter a while ago from one of m' few readers, askin' about the name at the top of this here effusion every month, namely "Ouachita." He wanted to know the exact definition, where in thunder I got it, how did I come to use it, and a few other things. Inasmuch as the reader in question happened to be the editor of this periodical, I thought it might be a fairly good idea if I gave out with a little explanation of same, so here goes.

To make a short story longer, the name "Ouachita" is pretty dern common in this here section of the hills, bein' an Indian name originally, meanin', if'n I ain't mistaken, something like "Place of Beautiful Waters." It appears often especially around Hot Springs, Arkansas, where so many people go to take baths.

Reminds me; I'd better git over there pretty soon. Hain't had m' Fall bath yet! Quite a few places over there are named *Ouachita* this and that, an' there's a river runnin' through hereabouts called the *Ouachita*. That's usually where you kin find my pappy-in-law, on there nice Summer evenings, an' lots of other fellers, too.

A NAME TO CALL MY BUSINESS

Anyway, when I first arrove in this beautiful section of th' Hill country some several years past, I looked around fer a name to call my little radio business. Not knowin' what the score was, particularly, bein' right fresh out'n the city, I says to myself, says I, quote, "Well, 'Ozark Radio Co.' has a right nice sound, so let's call it that." OK, I did.

Well, it seems that this little city is located in a range of mountains named the *Ouachitas*. They're quite distinct from the *Ozarks*, which are in Southern Missouri, and the *Bostons*, which are in Northern Arkansas.

OUACHITA VS. OZARK

Well, sir, to keep on makin' a short story longer, there was here an' old, gripy druggist, workin' right close to me. He started raisin' sand with me about livin' in *Ouachita Mountains* and callin' m' self the "Ozark Radio Co.!" Well, this kep' on and kep' on, and finally I says to this pill-roller, "Look, Doc, I've heard just about all of this that I want to! If'n you'll just gimme time to git rid of this batch of letterheads and envelopes, I'll be only too happy to change the name of the establishment to *Ouachita Radio Service!* Anything to git you to hush!"

Well, that seemed to make him happier, and he went back to his little pill shop for a while. Well, comes the late war, an' I shut up shop for a while, bein' occupied tryin' to keep some of Uncle Sugar's aircraft communicatin' in a civilian sort of way. I was a feather-merchant at a little fighter-base down in West Texas.

Come the happy day when Harry says, "Boys, it's all over," and we comes flyin' back to our beloved Hills, just as fast as that ol' Ford would run. Letterheads, envelopes, and all, were gone by that time so, when I reopened, I says to myself, says I, "Here's the chance to make Doc Ivey happy, by golly, so I called 'er *Ouachita Radio Service.*"

I made a special trip down on the Southside, just to show him, when my new letterheads got here. Was he happy? Didn't appear to be, too much. Now he ain't got nothin' to gripe about! Incidentally, he calls me "Mr. Ozark" to this day! Didn't do a bit of good, don't seem like!

THE COLONEL SAID

Well, anyway, now that I've got that off my chest, when I begun hammerin' out this monthly effusion, the Col. says,

"Why don't we call it *The Old Ouachita Service Philosopher*"? Bein' an agreeable sort of cuss, especially with editors and publishers, I immediately assented, and that's where the name come from. So there!

Well, anyhow, I did git a dern good idea whilst I was huntin' up the material fer this month's shipment. I got to lookin' around town fer someone that could tell me jist exactly what the meanin' of the word *Ouachita* was, and derned if I could find a soul that knew! Finally hunted it up in an old book at th' Library, after askin' the newspaper office, the city clerk, the Chamber of Commerce, the local historian, and a whole mess of other people! *Ouachitas* everywhere you looked, an' I'll be derned if a one of 'em could tell me the meanin' of that word!

HARDLY A SOUL KNEW

Point I'm tryin' to make is this: there was a word that was certainly in use a lot around here. Dated way back into our history, and had all sorts of local connotations, and so forth, and not hardly a soul knew what it stood for. You'll find a lot of that around the country, an' from what I've seen, it hain't confined to the rural areas, neither. There's just a whole raft of people that don't know what's goin' on in their own home town, when you git right down to it, both as to politics, crime, and business opportunities!

If you don't believe me, read the Kefauver report about some of the things they found out! Translated down into terms that you and me'd understand, the meanin' of that is this: there's lots of opportunities to make an honest buck, right in our own home town, right under our electronic noses, if we'd jist git able to look very far past them said noses, and see 'em!

GOT TO LOOKIN' AROUND

Jist fer instance, I found a couple of 'em right here a few years ago. Got to lookin' around in a slack spell, and discovered that the high school didn't have an intercom system. Well, that hadn't occurred to me, nor to them, and the school had been set up in their new building for several years, during all of which I had been right there in town. So had several other fellers in the same line of business, for that matter!

BACK TO SCHOOL

Well, the upshot of it all was that I went draggin' m' carcass up to see the school superintendent right quick-like, and wound up sellin' him not only a system for the high school but also a system for the new grade school buildin' they were busy puttin' up over on th' Southside of town. Two complete intercom systems from one good idea, thunk up in an idle moment!

'Nother time, I was settin' in the shop lookin' bored — so I run around th' corner for a cuppa cawfee, which is one of my favorite outdoor sports, next to goin' to service meetings — and I happened to run into a representative of some of the numerous women's clubs, in fact, several of 'em, on th' same errand I was.

They were gittin' ready to put on a homely-talent play, up in the high school auditorium, a nice big rock structure put up in the good old WPA days, with lots of room, a nice stage, good lights, and the general acoustics of a blimp-hanger. They wuz bewailin' this fact when I stepped up.

ON THE DISTAFF SIDE

"Ladies," I says, doffin' my hat real polite-like, "say no more! I have the answer to your problem right here!" Well, natural, they wanted to know what was the matter with me, so I told 'em, "I can cure your problem right quick-like, if you'll only make the necessary financial arrangements. I can design and install a highly specialized sound system in that auditorium that will end all of your worries about your home-talent plays, school programs, etc., being heard. You know and I know that there never yet was a home-talent play where they talked loud enough! There's only one answer to that problem, and it's a specially built sound-system, designed for that particular building, and I'll bashfully admit that I'm just th' cookie that can design it."

Well, that started a lot of argument, of course, but in the end three of the women's clubs agreed to go together and raise the money for a sound system for the auditorium, the first time they had agreed on anything for some years, too! So, they put on some programs an' raised the needed scratch, and away we went. They had their sound system, and it worked, and they was happy. I had the money, and I was happy. I paid for the stuff. The distributor was happy. That left *everyone* in quite a state of oh-be-joyful.

OPPORTUNITIES EVERYWHERE

Once again, th' point I was makin' was that there are numerous opportunities for the alert radio or TV man in *any* town. Not only big ones, but little ones and middle-sized ones. If you'll just raise your head and look around, the stuff's there, and it's ready for you. All you got to do is think of it, and there it is. Most of it's easy to sell, too. If you can think of some new way in which electronics can help any business man in your community, you've got yourself a good sale. So, look up, Bud, look up!

(Continued on page 30)



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

By EDWARD M. NOLL

FM RIDES THE CABOOSE

When customers are queried about FM, you are likely to encounter one of the following answers:

1. What is FM? I didn't know our set had it or we forgot all about it.
2. Never bother with it. Programs are all the same. I don't know how to locate the stations I want.
3. FM section doesn't work or stations sound weak or mushy.

All of this means something is amiss as to how customers have been told about and introduced to FM. Certainly, with the rising interest in high fidelity there should be a corresponding general acceptance of FM at least on an equal footing with AM. What must we do to position FM at a more deserving level?

Frequency modulation has been obscured by television, now by UHF, and next by color television. Only the high fidelity fans have recognized the advantages of FM. The lack of general interest by consumer, serviceman, distributor and manufacturer has had a retarding influence on FM programming in most areas. Certainly, the broadcaster can not long remain high-fidelity higher-cost-conscious if the public remains in the dark about FM and is not taught to appreciate its advantages.

Too often FM has been belittled before the public by personnel and dealers in the industry — this lack of foresight has hampered its growth. High fidelity, volume range, nonstatic and non-interference advantages are there to be utilized. We realize that high fidelity programming has been limited but the limitation has been a result of lack of interest and not the technical failings of the system. FM broadcasters would expand and improve facilities, to a great extent, if there were a rigorous interest by the public — wide public interest creates advertising interest and a paying basis for FM operations.

ADVERTISE TO EDUCATE

Advertising is an important factor in attaining better acceptance of FM in

your community. Try to teach, in simple words, some of the technical facts about FM — and how it permits improved and reliable reception. A good basic ad can be built around the advantages of FM:

Frequency Modulation is a method of radio transmission that offers improved and more realistic reception. You can enjoy these four major advantages:

Noise-Free Reception. FM radio is not subject to electrical noises, sparking motors, lightning static, etc. It permits quiet-background relaxing reception.

Minimum Station Interference. Station interference is not present. Signal remains constant and reliable day and night over the coverage area of the station. Distant stations do not cut in and out and interrupt reception from the station you desire.

Volume Range. You are able to enjoy full volume range in your music reception. Low level music is not expanded and high amplitude levels compressed as in AM broadcasting. Low level passages can be transmitted quietly and naturally because of the low background noise of FM. High level passages can be conveyed at full volume.

High Fidelity FM permits you to hear the very low notes and very high notes and harmonics of musical renditions with clarity and roundness. These advantages can only be realized with a good audio amplifier and speaker system. Won't you drop into our store for an FM demonstration?

DEMONSTRATE FM AT ITS BEST

FM can best be sold by demonstration and comparison. The dealer equipped to prove his points will lead in sales. Demonstrations can be planned to show the advantages of FM.

1. Use old electric razor or sparking device that raises havoc on broadcast band. Demonstrates results using FM-AM outlet transmitting same program.

(Continued on page 19)



ASSOCIATION NEWS

TRANSCRIPTS FROM SERVICE MANAGEMENT'S PARTY LINE.

BY PENNY MARTIN

PROMOTE YOUR ASSOCIATION

What have you done lately to promote your association? Membership drives are necessary; interesting meetings will bring out the old and new members . . . but what have you done to let the consumer public know your association is in business?



TSA, DETROIT
The Television Service Association of Michigan, Inc., prints a monthly bulletin

called *TSA News* that is written at the consumer level. Members of TSA can have the *TSA News* sent to their customers each month for a very nominal cost. Advertising covers the cost of printing.

Besides listing the TSA members, the bulletin describes the business of one of its members, giving him a chance to put his best foot forward. Articles such as "You Don't Have to Pay Cash for Major TV Repairs"; "Basic Principles for Credit"; "TSA Aims"; "UHF-TV and Its Problems"; "Can You Fix Your Own TV?" are typical.

If you would like to see *TSA News*, write to Adam H. McNutt, Sr., Editor, 15010 Grand River, Detroit, Mich.

TSA made a lot of Vets happy when they agreed to furnish all parts, supplies, and services necessary to keep TV sets in constant operation at the Veterans' Hospital in Dearborn . . . which, incidentally, resulted in some excellent "good-will" publicity in the local papers.

NARDA

The National Appliance and Radio-TV Dealers Association suggests that local associations key their activities to existing community needs, and further

than that, work toward the enactment of state legislation outlawing the abandonment of abandoned refrigerators and ice boxes. (Offering a "bounty" for hardware from abandoned ice boxes might prove to be an incentive to local Scout troops. Hardware removal would render the boxes harmless.

UTAH ASS'N OF RADIO & TV SERVICEMEN

The Utah Association of Radio and Television Servicemen has set up a special blood bank pool. A minimum of 15 pints is necessary so any Association member, or member of his family, may draw from the bank in case of necessity.



TSDA, PHILADELPHIA

The Television Service Dealers Association of Philadelphia has launched a series of 18 newspaper advertisements. Their organization has 28 members. They appropriated \$1,200 for this activity. You may have the best product in the world, but if you do not let people know about it and when it may be obtained, to what avail is it? TSDA members are out to let the public know!

ATSC OF GREATER ST. LOUIS

A booklet titled, "What Every Smart Television Owner Should Know," has been prepared by the Association of Television Service Companies of Greater St. Louis, Inc., for distribution to customers of its members.



Its presentation is very readable and it should create an immeasurable amount of good will.

ATSC is also justly proud of the constant fight they have waged against articles slandering the TV service industry . . . and the retractions they have gained. While bolstering the good reputations of members, they are doing a public service for all TV Servicemen.

MRAA, MEMPHIS, TENN.

Across the country, shock reaction to the deaths of 11 children in three

separate parts of the country found all segments of the appliance industry seeking to find their particular avenues to prevention of such horrible catastrophes in the future. *Although it is the consensus of opinion that Consumer Education and Legal Action to outlaw abandonment of ice boxes and refrigerators is the basic requirement*, many localities have found vigorous groups of appliance dealers moving in on the present situation without delay.

The Memphis Retail Appliance Association, working cooperation with the *Memphis Commercial Appeal*, is offering to pick up abandoned ice boxes. Wooden boxes, worthless as scrap, will be taken to the city dump for destruction. Metal boxes will be sold to a salvage company for \$10 a ton. The receipts are being turned over to a local charity.

RTA, KALAMAZOO, MICH.

The Radio Television Association of Kalamazoo has done an exceptional job with a series of weekly display ads dealing with problems devoted to Television Service. One was on the cost factors of customer calls, another explaining why a set doesn't "stay fixed," etc. Each ad emphasizes that good service can't be bought at bargain counter prices.

In cooperation with the Kalamazoo Chamber of Commerce, the RTA is conducting a series of "Public Television Clinics." In the near future, I hope to bring you a full account of these Clinics and the results achieved.

HELP WANTED!

"The soundest investment we can make is cooperation," Mort Farr, past president of NARDA, believes that to be a keynote. I'm asking for the cooperation of associations across the country to answer some of the questions that have come through the mail.

"We are being pushed by the A. F. of L. in town on being unionized and I can't see just what good overall they can do us. If you have seen how it has worked out in other places . . . good



or bad . . . I surely would be interested in knowing," writes Bill Brown, president of the Electronic Technicians Association of Toledo, 305 Main St., Toledo 5, Ohio.

Vincent J. Lietz, president of the Association of Television Service Companies of Greater St. Louis, Inc., would like to know how to sell Association membership to Service Dealers.

Joseph Vegh, secretary of the Akron Radio Technicians Association, Inc., P. O. Box 125, Cuyahoga Falls, Ohio, is interested to know how others create interest in other meetings besides big meetings. In other words . . . when the business is ironing out routine affairs that may not be exciting, but are essential to the running of any organization.

John A. Wheaton, president of the Long Island Television and Radio Technicians Guild, 464 Sagamore Ave., E. Williston, New York, believes, as I do, that "an exchange of correspondence between various groups would help to further all our aims." He is particularly interested in any way that will help to increase membership in an Association.

Hal Evry, Policy Consultant of the Association of Television Service Dealers, 8425 S. Normandie Ave., Los Angeles, California, says that they are primarily interested in discouraging local manufacturers and distributors from entering the service field, as is the case in their vicinity. "Any ideas you can send along will be appreciated," Glenn Ketchum, president has requested.

"We are a new organization . . . how do other organizations raise the necessary monies to run an association successfully?" Asks J. F. Burns, president, Utah Association of Radio and Television Servicemen, 418 Frick Bldg., Salt Lake City 1, Utah.

I would sincerely appreciate your comments on these questions so they may be discussed more fully in future columns. These problems are by no means confined to just one organization . . . but are typical of those every organization has to face at one time or another. I'll be waiting for your letters! write:

Penny Martin
Association News Editor
P. O. Box 283
Brackenridge, Penna.

Technical Topics (Continued from page 17)

2. Keep check on local high fidelity record shows preferably transmitted on both FM and AM simultaneously. Be able to change over rapidly between FM and AM to show high fidelity and improved

volume range as well as quiet background of FM.

3. Be able to demonstrate the very best and just average FM reception. Use a conventional AM-FM chassis and also be able to switch over rapidly to a high fidelity audio system.
4. A good high fidelity record can also be used to demonstrate the difference in reproduction between a small model FM-AM-phono combination and the type of quality you can attain with a high-fidelity installation. This is a natural link between FM and high fidelity needed to take full advantage of FM.

ANTENNA FOR FM

The antenna is a consideration in most locations, except in very strong signal areas where only local reception is desired. Just being able to receive a reasonably strong FM signal is not the only consideration — background noise must be as quiet as possible for very best FM reception. Try to obtain sufficient signal to attain full limiter operation.

There are many locations where the indoor FM antenna is entirely inadequate for best FM reception — a major reason why FM is not ever turned on in many homes. Even in metropolitan areas, one or more local FM stations are generally below full limiting levels. Complete and thorough limiting can only be reached with the application of sufficient signal. A good outdoor FM antenna installation permits peak results — how many such installations exist in comparison to the number of AM-FM combinations in homes? Long distance FM reception is possible with use of a good high gain FM antenna. Reliable, quiet - background reception can be attained over a distance of 75 miles.

FM RECONDITIONING ACTIVITY

Many FM receivers have been neglected for years — especially units associated with the usual radio console. Dial calibration is so pathetic on many, the customer could not find a desired station if he wanted to. Alignment is so necessary on many, they sound like old-fashioned records.

Often the customer says, "Don't bother fixing the FM section, we never use it." The easy reply is to agree with that attitude. We should, however, take a stand for FM with, "We wouldn't be without FM in our house." Then explain the advantages of FM.

When a combination comes into the job for repair, retouch and correct FM alignment. Next tie a small printed or mimeographed sheet or card to the receiver to explain that the FM facilities have been adjusted for peak operation. On the same card recommend that the

customer listen to a few local high fidelity programs — show scheduled time and where they can be found on dial. Add a slogan or note to effect: Next time your AM stations fade or are ridden with noise or interference, try FM.

SELLING SERVICE By HAROLD CHASE

How you sell depends upon the individual prospect. There are no set rules for everyone or for every circumstance that will work all of the time. However, there are certain basic facts which you will find a great help in selling service.



Before the "pitch" can be made, all information regarding the customer and the set must be ascertained. Prepare with a few conversations and leading questions before the sale is started. Obtain information such as the past history of the set performance and the attitude of the customer toward the set. Keep your presentation simple, as free from technical terms as possible.

How many times have you listened to a physician's diagnosis and then said, "What is that in plain English?" Keep your explanations simple. Talk about results and improved performance rather than technical difficulties. In the words of Elmer Wheeler: "Sell the sizzle, not the steak."

While the owner of the set does ask what is wrong, his real interest is in the *performance after repair* and what he will get for his repair money. If you have modified the circuit to give a steadier picture, or have installed an improved picture tube, talk about the improved picture. Plan on overhauling his set, then sell the improvement, not the repair. Talk about uninterrupted service and enjoyment.

In selling service you must lead the conversation. Do not let the customer stop you for prices until you have told your whole story. Tell him the price is rather high, but do not quote the price until the customer knows what he will get for his money.

The price of any product or service never seems as high if the desire for results is great enough. Many of us in the older TV areas take television too much for granted. We forget that TV is the greatest source of enjoyment ever owned by the American public. Be enthusiastic about future enjoyment and uninterrupted service, and you will do a good job — selling service.

Industry News Pictures



Bruce A. Coffin, president of CBS-Hytron, right, points out the simple construction of the CBS-Colortron tube as compared with that of the planar-mask tube displayed below, to Lloyd H. Coffin, treasurer, center, and Charles F. Stromeyer, vice-president, at left.



Trio Manufacturing Company's new Plant.

Below: Radio Receptor Co.'s mobile field unit is designed to make precise field interference measurement to determine compliance with Section 18 of F.C.C. regulations.



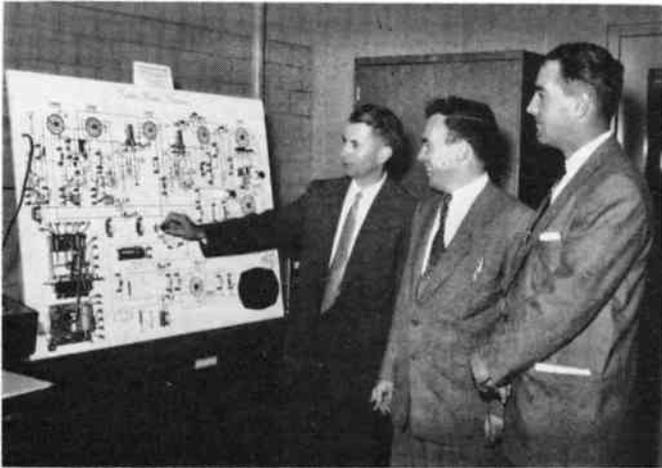
Julius Finkel, president of JFD Mfg. Co., right, shakes the hand of Lawrence F. Roberts, electronic design consultant who developed JFD's "Tuner-Tenna."



Rauland Corporation executives preview their new documentary film: "Perfection Through Research."

Below: Dorothy Bailey, Virginia's representative in the "Miss Universe" contest and friends at Norfolk, Va. UHF Technical forum staged by Regency Div. of I.D.E.A.





Sam W. Archer, service manager for Delco Radio, left, demonstrates a new radio service training aid to Virgil A. Wilton, center, general manager of the Radio Electronic Supply Co. and T. O. Harrington, United Motors service district manager. The training aid is in the United Motors service classroom in the new GM Training Center in Detroit.



Paul H. Wendel, editor of Service Management, second from right, congratulates Gordon Hohmeyer upon being awarded Capehart's "President's Cup." Left to right, Charles G. Scholz, field engineer; Bill Costello, regional sales manager; Hohmeyer; Wendel; and Ken Brown, field staff operations section manager.

Below: Henry T. Paiste, Jr., vice-president of Philco, left, receiving congratulations from Russell M. Oliver, Philco's general service manager, on completion of 25 years with Philco.



Below: Otto K. Olesen Co. installation of University Cobreflex-2 wide angle speakers for public address system used for Boy Scout Jamboree Week in Irvine, California.



People and Places

(Continued from page 10)

facturers to insure better profits, are two common objectives of the appliance industry . . . **HENRY T. PAISTE, JR.**, Philco vice-president in charge of product performance and service, recently received congratulations and a silver bowl to commemorate his 25 years of Philco service . . . **SYDNEY RHODES** of Olympia Radio & Television, Inc., won first prize in a recent golf tournament conducted by the Radio & Television Square Club . . . **SHELDON RUTTER**, a designer of Evanston, Ill., has been retained by the Channel Master Corp. as a packaging and art consultant . . . **ELWOOD W. SCHAFFER**, formerly vice-president of the National Union Radio Corporation, has been named assistant to the vice-president in charge of engineering for CBS-Hytron . . . **MIRYAM SIMPSON** has become an associate member of the American Institute of Management . . . **WILLIAM J. SLAWSON**, formerly jobber sales manager for Federal Telephone & Radio Corp. has been appointed assistant sales manager for Pyramid Electric Co. . . . **JOE STARR** has been appointed assistant sales manager, manufacturers division, Pyramid Electric Co. . . . **CHARLES F. STROMEYER**, vice-president in charge of engineering for CBS-Hytron, says that the simple and obvious principle used in Mirror-Back picture tubes reinforces light output for brighter, sharper TV pictures . . . **ISADORE WABER**, formerly advertising and sales promotion manager for the Radio Electric Service Co. has been appointed vice-president in charge of sales for C-B-C Electronics, Inc. . . . **W. WARD WILLETT** has been appointed advertising manager for LaPointe Electronics, Inc. . . . **PHILIP B. WILLIAMS** has been appointed chief engineer for the Jensen Manufacturing Co.

News Briefs

(Continued from page 11)

ICS CORP. has announced the installation of a community TV system to serve the residents of Walla Walla, Wash. with signals from Spokane, 120 airline miles away. . . . **JFD MFG. CO., INC.** has announced a new indoor array with a tuning mechanism to peak channels 2 to 83. . . . **PRECISE DEVELOPMENT CORP.** is expanding its manufacturing operations at Oceanside, N. Y. . . . **RADIO CITY PRODUCTS CO., INC.** has introduced a time payment plan tailored to fit the needs of TV Servicemen and parts distributors. . . . **RAYBURNE CORPORATION** is the new name of the former Grayburne Corporation with offices at 4 Radford Place, Yonkers, N. Y. . . . **RAYTHEON** television & radio division has announced a new sales training movie entitled: "Nothing to Argue About," reports that the opening of its second plant in Chicago has more than doubled its production facilities. . . . **RAULAND CORP.** has completed a documentary motion picture entitled "Perfection Through Research." . . . **RCA VICTOR** reports that a 92-year-old check, written by Abraham Lincoln, was recently used to demonstrate RCA industrial television in the Riggs National Bank, Washington, D. C.; reports a survey indicating that schools of the nation will buy more than 50,000 magnetic tape recorders this year, at a cost exceeding \$10 million; reports that its portable push-button tape recorders are now available through dealers (see cut); has announced battery assem-



New RCA Portable Magnetic Tape Recorder.

blies designed for transistor use; has announced a new low-cost telephone-type intercom system; has announced the availability of a new low-powered r-f TV transmitter designed to meet broadcasting station monitoring needs; has acquired a new warehouse in Dallas, Texas to improve Southwest distribution of parts. . . . **REGENCY** division of I.D.E.A. recently staged a UHF Technical Forum in Norfolk, Va. that attracted more than 800 dealers and TV Servicemen. . . . **HOWARD W. SAMS & CO., INC.** recently held a stockholder's meeting to consider authorization of an additional 60,000 shares of common and 1000 shares of preferred stock. . . . **STANFORD RESEARCH INSTITUTE** has reported three years' work on development of automatic production technique for electronic equipment. . . . **SUTTON ELECTRONIC CO.** Lexington, Ky. is now distributing its UHF-VHF TV con-

verter in an attractive, restyled plastic cabinet. . . . **SPRAGUE ELECTRIC CO.** has announced a jumbo instore carton display. . . . **SYLVANIA ELECTRIC** recently shipped two truckloads of receiving and picture type tubes to the new location of the Jersey Electronic Distributing Co., 524 21st Ave., Paterson, N. J. . . . **TRIP-CHARGE INC.** Pittsburgh 6, Pa. is offering a free booklet describing possible tax savings for those who attend meetings and conventions. . . . **UNITED CATALOG PUBLISHERS, INC.** has introduced a new perpetual counter catalog service for distributors, called "File-O-Matic". . . . **UNIVERSITY LOUDSPEAKERS** through cooperation of Otto K. Olessen Co. of Los Angeles, served audiences up to 7000 persons at the International Boy Scout Jamboree. . . . **WESTINGHOUSE** has announced a 21-inch TV picture tube, called a "90-degree deflection" type that is actually smaller than former types but is said to provide larger pictures.

Letters

(Continued from page 4)

- a. set picked up by TV Co.
 - b. by customer delivery
 3. Warranties given with purchase of set
 - a. charge for 3 months
 - b. 1st year policy
 - c. 2nd year policy
 4. Pickup and delivery charges
 5. Risk and insurance
- Spanish Mountain TV Corporation
Larkin D. Younce, president
South Ukiah, Cal.

TTLB Directory

(Continued from page 12)

Fort Wayne
JONES TV & APPLIANCES CO.
(Howard Smith, SMgr) 237 South Main
4a, 2,7yrs,7d (1-abe)
This will indicate a set dealer with a servicing department employing two men to handle the servicing of the sets they sell exclusively. This store is equipped to take care of either home or shop service but does not handle antenna installations.
It is the Bureau's plan to make copies of the National Electronic Service Directory available to the more than three thousand manufacturers that are said to be now engaged in making various types of electronic assemblies. Since many of these devices are for highly specialized applications the manufacturers are deeply interested in arranging for competent local maintenance facilities for their customers.

don't be vague...

insist on
SPRAGUE

TEL-OHMIKE®

CAPACITOR-
RESISTOR
ANALYZER



SPRAGUE

NORTH ADAMS, MASS.

don't be vague...

insist on
SPRAGUE

Twist-Lok*
'lytics



*Trademark

SPRAGUE

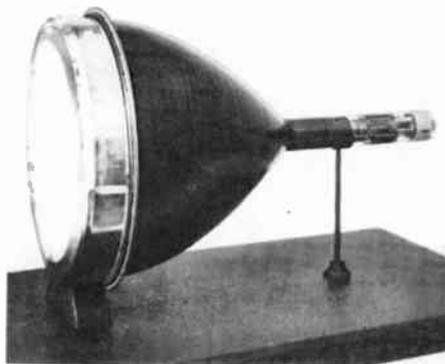
NORTH ADAMS, MASS.

CBS-Colortron
(Continued from page 9)

was desirable and practical for black-and-white television, so the rectangular CBS-Colortron will be desirable and highly practical for color in the very near future. It will be competitive with its black-and-white counterpart as far as dimensions are concerned.

CBS-COLORTRON FEATURES

The CBS-Colortron uses a curved shadow mask in conjunction with the usual curved face of the tube's envelope. The phosphors are directly on the inside of this face as in the black-and-white tube. The curved mask re-



A finished CBS-Colortron Tube.

quires no pre-stressing. The mask and its simple hold-down springs weigh only six ounces, as compared with six pounds for the mask assembly of a planar-mask type of tube. The resultant simplified structure is far less costly. Processing and manufacturing time are much less as there is little mass to heat and cool for proper out-gassing.

The image of a CBS-Colortron tube is directly on the face of the tube rather than behind a window so there is no need for high optical perfection in the glass of the face plate. The picture contrast of the CBS-Colortron is also improved, because there are fewer reflecting surfaces between the picture and the observer.

The convergence problem is greatly simplified, because the curve of the screen approaches the curve of the electron optical focus. Beam length is nearly constant as it sweeps over the entire picture area. This feature provides more reliable performance and easier installation and service.

The basic principle used in the CBS-Colortron makes it possible to make larger tubes without unwieldy overall lengths. CBS-Colortron features solve the color picture tube problem and make color television at prices within the reach of the average American.

don't
be
vague...

insist on
SPRAGUE
BLACK
BEAUTY®



TELECAP®
tubulars

SPRAGUE

NORTH ADAMS, MASS.

don't
be
vague...

insist

on

SPRAGUE

NORTH ADAMS, MASS.

NATESA



By Paul H. Wendel

shows power of cooperative service effort

Fourth annual convention attracts service
businessmen from 38 states and Canada

Highlighted by the first showing made of the RCA Service Company's Color TV Dynamic Demonstrator before an audience of service people, the fourth annual convention of the National Alliance of Television & Electronic Service Associations epitomized the tremendous strides that have been accomplished in stabilizing the activity of electronic servicing as a respectable and profitable business entity.

Among the registrants at the NATESA meetings were owners of some of the country's leading service businesses and representatives of associations interested in supporting forward-looking developments in the interests of service. More than five hundred service executives came from 62 Cities located in 38 States and Canada. In addition to those who registered, several hundred members of the service fraternity dropped in to look over the exhibits and to sit in on some of the excellent lectures that were scheduled as an integral part of the convention.

MANUFACTURERS SPEAK

Along with the excellent program of technical lectures and seminars, the convention featured a series of talks on various facets of service operation. Starting with a Business Promotion seminar conducted by Robert A. Penfield, advertising manager of Sylvania Electric Products Inc., the business talks included "Better Consumer Relations," by Frederick Fisher of the Chicago Better Business Bureau; "Are You Training Your Competitor," by Prof. J. H. Hazlehurst of Northwestern University; "Business Promotion," by Gordon F. Burns, field sales manager for the GE Replacement Tube Department; and "The Replacement Market in Phono Accessories," by Karl F. Jensen of Jensen Industries.

OFFICERS ELECTED

NATESA officers elected for the coming year included, president, **Frank J. Moch**, Chicago; eastern vice-president,

Bertram Lewis, Rochester, N. Y.; eastern secretary, **Harold "Dusty" Rhodes**, Paterson, N. J.; east central vice-president, **Fred Colton**, Columbus, Ohio; east central secretary, **Charles N. Burns**, Memphis, Tenn.; west central vice-president, **Vincent Lutz**, St. Louis, Mo.; west central secretary, **W. A. Rosenberg**, Wichita, Kansas; western

& TV Servicemen, Salt Lake City, Utah; Radio-Television Service Association of Western New York, Buffalo, N. Y.; and the Rhode Island Radiomen's Business Association, Providence, Rhode Island. Several other associations indicated their intentions of affiliating with the national group. It is expected their boards will take affirmative action in the very near future.

NATESA AWARDS

It was announced that NATESA "Friends of SERVICE MANAGEMENT" awards were voted for Sylvania Electric Products Inc. the Radio Corporation of America, the General Electric Company and Howard W. Sams. Official presentations of these awards are to be made at the recipient's factories or headquarters offices.

NATIONAL SERVICE WEEK

Among the official acts of the delegates at their annual business meeting was one to approve action on a drive for a "National Radio-Television Service Week" officially selected, recognized and promoted; approval of a program in cooperation with the Edison Electrical Institute for conducting cooperative advertising with power and light companies, and the selection of a committee to explore all possible ways for developing cooperative national advertising programs in the interests of NATESA members and the legitimate, competent independent servicing industry.

Convention delegates also approved a recommendation presented by the NATESA Committee on Standards which is intended to clarify nomenclature used to identify branches of the industry and occupational titles of those engaged in various phases of the service activity. The Committee recommended that the following classifications be submitted to the U. S. Department of Labor for the inclusion in the dictionary of Occupational Titles:



John Cecich, vice-president of TISA-Illinois, welcomed delegates and guests to the Fourth Annual NATESA Convention.

vice-president, **Francis Fingado**, Denver, Colo.; western secretary, **Homer Mauer**, Cheyenne, Wyoming; secretary general, **Jack B. McDowell**, Kansas City, Kas.; treasurer, **John Hemack**, Minneapolis, Minn.; and **Gerald Ratner**, legal counsel.

New affiliates voted in at the convention included: The Association of Television Service Companies, Cincinnati, Ohio; Utah Association of Radio

DEFINITIONS RECOMMENDED

ELECTRONICS (A general, inclusive term for the following specialized fields):

RADIO	Specialized
TELEVISION	Specialized
AUDIO	Specialized
INDUSTRIAL ELECTRONIC	
Suggested	
MEDICAL ELECTRONIC	
Suggested	
AIRCRAFT ELECTRONIC	
Suggested	
RADAR	Suggested



E. R. Klingman, technical specialist for the RCA Service Co., unveiled RCA's new color television dynamic demonstrator.

Occupational Classifications:

... **SERVICE ENGINEER:** One who is skilled in the principles and practice of maintaining ... equipment, capable of handling both preventive maintenance and restoration operations economically. (Combination service technician and service manager.)

... **TECHNICIAN:** One who has served as an apprentice for a period of 8000 hours minimum and has satisfactorily passed an examination to repair any ... set.

... **SERVICEMAN:** One who is properly trained to meet the public on an intelligent basis technically, and is able to complete any service on location not requiring shop type test equipment.



Karl W. Jensen, vice-president of Jensen Industries, developed keen interest in Jensen's "Needle a Day" sales program.

... **SPECIALIST:** One who is representing a manufacturer in field service.

... **APPRENTICE:** A student after passing a qualifying examination and embarking on an "on the job" training program.

... **TECHNICAL ASSISTANT:** One who is qualified to assist an engineer or service engineer in the pursuance of his occupation.

... **INSTALLER:** One who is qualified to install antenna equipment and properly set up a ... set, make all necessary service operating adjustments, and is properly trained in the theory and practice of VHF & UHF propagation to install tuner strips.

... **SERVICE MANAGER:** Owner or manager of business qualified to perform maintenance repairs to ... equipment with the assistance of ... service technician in his employ. Serves as a contractor.

Gems from the NATESA Convention

Leonard Smith, president of the Texas Electronics Association, got "air sick" in the room first assigned to him on the 20th floor of the Morrison Hotel. He found the 9th floor was situated at a comfortable altitude and settled down to enjoy the NATESA convention after the hotel transferred him from the higher elevation.

The service industry will long be indebted to Fredrick Fisher, of the Chicago Better Business Bureau, for providing a new, badly needed scientific term for the lexicon of the servicing fraternity.

Speaking of those who call the BBB to complain without rhyme or reason for their complaints, he applied the term *psycho-ceramic*. Then, to erase any confusion that might have arisen in the minds of his audience of service executives, he explained that *psycho-ceramic* meant *crack pot*.

Many a note-pad came out to record that gem.

"... I know that there is nothing we can do as an association to ward off the processes of elimination that are going to take place in this industry. The Weak Are Going to Fall. It's the kind of a system we live under. If we don't play the game according to the rules, and do the things we should do—we're going to bust—and there's no legislation ... there's no agreement ... there's no association ... there's not anything that a manufacturer or distributor or an association can do about it."

Harry B. Price, Jr.,
To NARDA Members

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.

MERIT

LISTED IN
RIDER'S TEK-FILE & SAMS' PHOTOFAC
INDEX. TAPE MARKED TO HELP YOU—
ORIGINATED BY MERIT.
MERIT IF-RF COILS INCLUDE A COMPLETE
LINE OF TV REPLACEMENTS.

Transistor Notes (Continued from page 11)

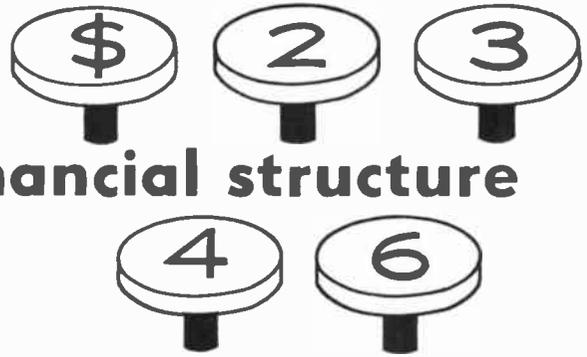
TRANSISTOR A NEW DEVICE

A new form of electron device, the transistor makes use of the flow of electron within a solid, a semi-conductor—a material having a conductivity lower than that of metals but higher than that of insulators.

The transistor differs basically from an electron tube in that it has no heated filament operating in a vacuum. In an electron tube, this filament, when heated by electric power, "boils off" the needed electrons in the vacuum. In the transistor, the electrons are harnessed in solid matter and are controlled as they move about within the solid.

Mr. Orth emphasized that RCA does not believe that the transistor will supplant the electron tube. Rather, engineers are convinced that the new device will serve to expand the market for tubes. They believe that modern variations of present electronic equipment will be made more efficient by the complementary use of transistors and tubes, and that transistors will make possible a host of new electronic devices requiring the special features of both tubes and transistors.

By Harold J. Ashe



essentials of sound financial structure

**A sound financial structure is only a reflection
of sound management**

One of the most important factors in the successful operation of a radio-TV Service business is the maintenance of adequate finances at all times. This task is not made easier by the fluctuation in volume which is common in the trade. Nevertheless, the problem must be met and be solved if a shop owner is to avoid serious difficulties.

Finance is not a subject primarily or solely the concern of bankers. It affects everyone, down to the smallest service shop. The smaller the enterprise the greater the importance of the subject. A sound financial structure is only a reflection of sound management.

This is shown by many servicemen who start out with ample funds, but go out of business within a year or so — because they are unable to husband their resources. They are wiser, if sadder, men, having learned that there is more to running a successful shop than technical know-how. On the other hand, some outstanding servicemen with superior management skills have been able to start with inadequate capital, but have overcome this initial handicap and have prospered and expanded.

TECHNICAL VS. BUSINESS SKILL

Too often, the possession of great technical skill blinds a serviceman to the need for management know-how when he opens a shop. All other business skills may be of no avail — if the importance of adequate finances is neglected or, as is sometimes the case, considered of little importance. As one volume-happy shop owner observed, only months before his failure, "get the business and the money will take care of itself." It rarely works that way.

A shop owner, on a balance sheet, may be able to show considerable net worth and yet be in difficulties, due to any number of circumstances. Business

may be off sharply with current liabilities crowding him, little ready cash available, and no sources to turn to get cash to meet bills.

His money may be tied up in an excessive amount of fixed assets which cannot be converted to cash. Current liabilities may exceed current assets, even though total assets far exceed total liabilities. Thus, he is in a financial straight-jacket. This situation is the result of bad financial management.

CURRENT VS. FIXED ASSETS

Current assets of a business which are either in cash or can be converted readily to cash, without interfering with the regular conduct of the business. Accounts receivable constitute current assets. Shop fixtures and equipment, on the other hand, are fixed assets and cannot be converted to cash except by hindering the business. Fixed assets, while a factor in determining net worth, will not relieve an immediate insufficiency of cash. So net worth may be reassuring to a shop owner even while his financial position is critical.

One of the most useful devices in guarding against financial difficulties is the periodic analysis of the ratio of working capital. This is simply the ratio of current assets to current liabilities. To illustrate this point, consider the following:

	Example A	Example B
Current assets	\$3,000	\$3,000
Current liabilities	1,500	1,000
Working capital	1,500	2,000
Current ratio	2 to 1	3 to 1

In the foregoing illustration, both shop owners have identical current assets, but Owner B is in far better condition than Owner A. He has the same current assets but he has fewer current liabilities to meet from those assets.

WORKING CAPITAL

It should be underscored that working capital, expressed in dollars, can mislead a shop owner. Hence the importance of determining the ratio. A shop owner may have relatively high working capital in dollars and still have a low ratio due to the narrow spread between current assets and current liabilities, both of which are too high.

For example, an owner of a large shop may have working capital of \$5000 or \$6000 and still be in a precarious position, while a smaller competitor with less working capital might be in good shape.

Moreover, current assets may bear careful analysis. Some current assets are more liquid than others, and not subject to loss. Cash on hand is of more importance than accounts receivable, if any, or inventory. The second, if it does not reflect a reserve for bad debts, may *overstate* the amount of the receivables. Receivables, in any event, are less liquid than cash.

Inventory, too, may be subject to shrinkage. In any case, it must be moved before it can be converted to cash. Thus, a shop owner with \$1200 in cash and only \$50 in accounts receivable is in a superior financial position than another shop owner who does a considerable credit business and has \$750 in cash and \$500 in accounts receivable.

ACCOUNTS RECEIVABLE

Those who advance credit to customers should take warning. In equating current liabilities against current assets (which are largely accounts receivable), a shop owner cannot postpone meeting his current liabilities with the ease with which his customers can postpone meeting their obligations. Thus, it is dangerous to offset bills payable with those receivable.

(Continued on page 30)

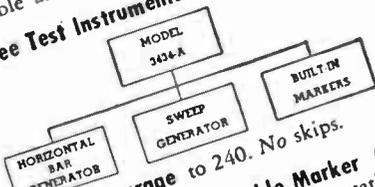
TRIPLET

SWEEP GENERATOR MARKER 3434-A

Harmonics sufficient for UHF servicing.
Sweep Output better than 1 volt.

Three Markers (pip) variable oscillator, (dip) variable absorption, and plug-in crystal.

Three Test Instruments in one.



Sweep Coverage to 240. No skips.

Crystal and Variable Marker for simultaneous presentation.

COMPARE THESE FEATURES WITH ANY SWEEP GENERATOR

There are 16 additional features incorporated, which make it a "must" for the radio technician. All, together, emphasize the superiority in dollar value of Triplet 3434-A. See this tester at your distributor's.



And now compare the Quality per dollar

TRIPLET ELECTRICAL EQUIPMENT CO., BLUFFTON, OHIO

November, 1953

Specify Electronic Parts by Brand Name



you are your own best

By Howard G. Chilton, General Manager,
Ft. Worth Retail Merchants Association



How to collect accounts and assure good credit risks

There is not a person in business that would keep someone on their payroll for five minutes if they thought that he was stealing from them or from their business. You wouldn't allow them to be in your organization. You wouldn't have anything to do with them — but do you realize that the longer you allow an unpaid bill to be on your accounts receivable, the harder it is to collect?

Do you realize that the longer that bill stays on your ledger, how little it is worth to you or to anyone else? And do you realize that if your bookkeeper or your credit manager doesn't do something about your past due accounts, he is allowing your past due accounts, your assets, to diminish, to fade away.

FROM DOLLARS TO CENTS

The National Retail Credit Association has published a manual for physicians and dentists. In it they say that it is not always fully realized how rapidly accounts receivable can depreciate in value. They point out that after an account has been on your books for six months, the dollar is worth only 67¢. After it has been on your books for a year it's worth only 45¢ and, believe it or not, after that account has been on your books for two years, that dollar is worth only 23¢. In three years the figure is 15¢ and at the end of five years it shrinks to *one cent*.

GET A MANUAL

If you don't have any sort of a manual in your office, contact your local credit bureau manager for a copy of the National Retail Credit Association manual which is priced at \$2.00. What applies to the doctor and the dentist applies to TV Service. The way you handle accounts is very similar to the way they handle accounts, because neither of you has a commodity to sell.

What can you do with those accounts on your books? How can you turn them into cash? You can do it better than any collection agency or anyone else.

You are the best collector, but you must work at it. You must see that your credit manager and your bookkeeper turn those accounts into money, that they do not sit idly and put it off until tomorrow. Call your bookkeeper into your office and analyze those accounts.

ACCOUNT ANALYSIS

List every account that you have on your books that is over 30 days old. Everyone of them by name, present balance, current balance, those outstanding over one month, two months, three months, four months and over six months — and the worth of the account. If it is over six months old, it's worth only 67¢ per dollar. If you don't believe it — just figure that only two out of three people, that owe you over six months, will pay. The longer you wait the fewer they will be.

You can do this on a sheet of yellow paper. You don't have to have any special forms. Any sort of ledger sheet will do. Just rule lines for one month, two months, three months, four months, five months, six months, and over. List the names. When you get through, make a total of the amounts. It will amaze you — the amount of money you have on your books that is over six months old. Then find out what you are doing about it; find out if you are doing anything about it — in all probability you are not.

ISSUE STATEMENTS

If your credit manager and your bookkeeper, or whoever keeps your books, isn't doing something about it, they are allowing your money to disappear. Next you should find a way to get that money in. Be sure you send statements out on time, the first of every month, regularly. Put a sticker on those accounts that are two months old. Write on them: "Please Remit"; "Perhaps You Have Forgotten," let them know that you want your money, that you expect it. Then send your letter. Any sort of letter, but always

let it be a face-saving letter. "Perhaps You Have Overlooked This." Then get on the telephone, the most powerful tool you can use for collecting accounts.

Hope that the madam of the house isn't there. Hope that you talk to the little boy or little girl; and say, "Sonny, how's the television working?" You will find out. They'll know and say, "Oh, it's working good." Well, Brother, you are then in like Flynn — if you were the last to service the set.

FIND OUT WHY

Find out why the bill hasn't been paid. In order to collect an account, you must find the person, then you must find out *why* they haven't paid. Everybody wants to pay their just debts, all of you, all of us, everyone. First find the person, then find out why. Perhaps they have a legitimate gripe. It is a good idea, before you service a set, to give an indication of what it is going to cost. Then, if they authorize the work, go ahead. If they don't want work done, don't do it.

After you get the person on the telephone, get a specific promise. "I promise to pay you in the future." When? Get a definite promise, then follow up. Be sure you put it on your calendar. On that particular day, be sure you call back. If you wait two or three weeks, they will have no respect for you and they will pay someone else in the meantime. If that doesn't work, you should have some sort of free collection service but don't turn your accounts over to a collection agency yet.

FREE COLLECTION SERVICE

A free collection service doesn't cost cost very much money. They send out a letter that has Retail Merchants Association on it, or the Credit Bureau of your town. For approximately 15¢ you can buy these letters with envelopes. Often you can collect without having to pay high collection fees.

If the series of four letters doesn't
(Continued on page 30)

IMPACT IN UHF

FINCO

series 500

Great UHF ANTENNAS

Engineered To Give
HIGHEST GAIN and
NARROWEST PATTERNS
to solve difficult "GHOST"
problems in the FRINGE
AREA AND IN CLOSE
TO THE STATION

IMPACT Through Advertising

LOCAL NEWSPAPERS

LIFE

FARM MAGAZINES

RADIO

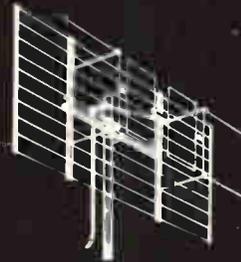
TELEVISION

**FINCO IS A NAME
YOUR CUSTOMERS
KNOW BECAUSE OF
THIS POWERFUL
NATIONAL ADVERTISING
PROGRAM!**

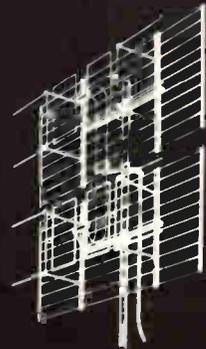
This great series once again reaffirms Finco leadership! Model 502 is a 2-bay unit of the colateral* type with a "snap-out" screen for instantaneous installation. Model 504 is the 4-bay version, highly effective in super fringe areas where ultra high gain is consistently required. Both models feature high front to back ratio and excellent impedance match to 300 OHM line for low signal fringe areas. Completely preassembled — corrosion proof aluminum throughout (including screen) — one antenna, one transmission line!

Both Units available in 3 models which peak on channel ranges shown below and maintain high gain on balance of frequencies:

- # 502A — channels 14-32
- # 502B — channels 29-55
- # 502C — channels 53-83



- # 504A — channels 14-32
- # 504B — channels 29-55
- # 504C — channels 53-83



Patent No. 2,566,287
*Reg. U.S. Pat. Off.

Quachita

(Continued from page 17)

We're gittin' a good signal here lately from a new station, KCMC-TV, which just went on the air at Texarkana, U. S. A., about four weeks ago and, consequently, has touched off quite a little TV boomlet here, 80 miles away. He's gettin' in here very good, if you got the right antenna up, and we've been workin' pretty fast tryin' to get the antennas up and the sets installed fast enough.

I have wore out four good pair of khaki britches, slidin' up and down roofs puttin' up antennas in the last two weeks. My wife says they got so thin she could read a newspaper through 'em, so she had to go into town an' git me some more! Me, I didn't have time to git 'em; I'd have just had to keep on presentin' a brave face to the world, until business slacked off a little!

Oh, yes, one more thing 'fore I go to bed. I've always bragged on th' manufacturers of TV sets, radios or whatever, who would see to it that the servicemen got proper schematics and service information about their products, which is only the sensible thing to do, seems to me. Well, Motorola is one of the best in that respect, I reckon. Mr. Dunlap tells us that all you have to do to get on Motorola's mailing list is to drop a letter, on your letterhead, to Mr. W. Bass, Motorola Service Department, at the same old address, 4545 Augusta Blvd., Chicago 51, Illinois, and tell him you'd like to get on the list, and he'll send you all of the stuff you need. I been on that mailing list for some years now, and I've certainly got lots of valuable data out of it.

Well, there's always one ray of sunshine, I guess. Feller said to me the other day, "Well, there's one thing I do like about television. I can see all of the movie films I missed when I was a boy!" Reckon he's about right, at that. Well, I gotta go now. Y'all come.

Collections

(Continued from page 28)

work, there is a snap-out system in which you notify the credit bureau that the party has not paid. All you have to do is to report to your local credit bureau that this man does not pay you, and every place that fellow goes to buy on credit will know that he owes for a TV set repair and won't pay. As long as he lives, his credit record will be clouded.

Of course, you have to be sure that there is no dispute about the account,

or you will be building a lot of ill will for your firm. Be sure to record your past due accounts for the credit bureau. An unpaid bill on your ledger does not hurt his credit record, except through record in your local credit association. The dues of your local credit association are small and the service it can render is tremendous.

BAD CHECK COLLECTIONS

Many people tell me that you have trouble with hot checks. In a survey we made, most everyone said, "What do we do when we deliver a set, the woman gives us a check and the check is no good? Most of these checks come from the better parts of town." Well, I have news for you. The large chain grocery stores are in the credit business whether they want to be or not. They find that most of the checks come from the best parts of town, because the wife hates to ask her husband for more money. So we get more NSF checks from the better parts of town than anywhere else.

If you will go to your local credit bureau manager, he has a form. We have one that sells for 15¢, and we don't care whether you collect a \$100 check or a \$35 check — or how much you collect with it. When you send us a copy of it, we refund 5¢, so for 10¢ we will help you collect your checks. All you have to do is to work out some sort of a collection system, some sort of a follow-up and then a free collection service from your local credit association is yours.

COLLECTION BUREAUS

If that doesn't work, you have to be sure to turn over those accounts to your local ACB of A, which is the Associated Credit Bureau of America — Collection Bureau. These bureaus are bonded through 1,700 offices in the United States. So if your debtor has moved out of town, he will remain a local problem, because that collection is transferred to the town where he now resides.

But be sure that you don't turn collections over to some fly-by-night, who guarantees to collect at a reduced figure. You may never see the accounts again, or his contracts may be loaded with fine print to prevent your collection of anything. Just because they charge 50% for collection is no assurance that they will collect all accounts. Remember, your accounts aren't worth very much if you don't do something about them from the very beginning.

Now what about those accounts that you are going to get? Some say, "I've got that licked. Cash basis, C.O.D. from now on." Well, that's fine. You've got it licked, but don't forget to lock your doors — because your competitors will

be very happy to take their chances on a credit basis.

LOCAL CREDIT ASSOCIATIONS

If someone has more time to find out about somebody than practically anybody else, let them do it. If you add a small fee for your service to cover local credit association dues, you can pick up the 'phone when you receive a service order for home television. You can call your local credit association and find out something about the customer.

Call your local credit bureau manager and talk to him. Ask him how he can help you increase your volume, how he can help you increase your sales. He has a newcomer's service to help you. Ask him what he can do to help you with your credit and your collection problems. There isn't any problem that you have that he cannot solve from a credit and collection standpoint.

Financial

(Continued from page 28)

A quick change in local economic conditions — a strike or layoff at local plants, crop failures or other upsets — may sharply reduce the collections on which he depends to meet his own bills. Sound management dictates a margin of safety against such eventualities.

MINIMUM RATIOS

The ratio of current assets to current liabilities should never drop below 3 to 1. Four to 1 may be justified as a minimum requirement in these inflated times. If the ratio drops below 3 to 1, a shop owner should start analyzing his business with a view to correcting this situation.

This may call for holding down maturing invoices during slack periods whenever possible, particularly non-merchandise inventory which, otherwise, might be paid for far in advance of actual need. Money so invested is frozen and cannot be converted. Other commitments should be postponed when possible.

If credit is a factor, collections should be vigorously pushed to reduce accounts receivable. Granting of credit may need to be tightened. It may be wise to change to an all-cash basis. It may be wise to write off some dubious accounts to "wring the water" out of accounts receivable. Otherwise, current assets may be inflated. Writing off of accounts receivable is merely a book-keeping device — to get a realistic view of a shop owner's financial position. It does not prevent him from pressing collection of such accounts.

Again proving
tube-design
leadership...

40% OF 1952'S NEW RECEIVING TUBES WERE G-E DEVELOPMENTS... TWICE ANY OTHER MAKE

FOURTEEN out of thirty-five registered *new* receiving-tube designs—40%—were G-E, in the last calendar year, 1952. As still further proof of leadership... new G-E types numbered more than twice those of any other manufacturer!

Outstanding research and development by General Electric have given to the TV-radio industry its newest, most advanced tubes. You can be sure, when servicing latest-model receivers, that G-E tubes are available for every need—that G-E leadership

in tube development brings you the finest obtainable product. Every working day, you will receive extra dividends in superior performance and reliability.

You can expect more new and improved tubes from General Electric in the months ahead—types that will make your work easier and cut call-backs. Keep in touch with your G-E tube distributor for forthcoming new-tube announcements, each with a profit message for you! Tube Dept., General Electric Co., Schenectady 5, N. Y.

SHOWN BELOW: a few of the many new G-E tubes that are making money for service dealers.



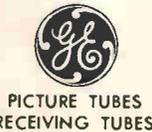
You can put your confidence in—

GENERAL  ELECTRIC

**SERVICED
with
CONFIDENCE**



this is the seal you can put on every job
when you use these nationally-known
replacement parts



Select your replacement needs from
these famous quality lines listed in
PHOTOFACT FOLDERS

- | | | |
|------------------|-------------------|----------------|
| AEROVOX | FEDERAL | RADIART |
| ASTATIC | GENERAL ELECTRIC | RCA |
| BURGESS | I R C | SELETRON |
| BUSSMANN | JENSEN INDUSTRIES | SHURE |
| CENTRALAB | JENSEN MFG. | SPRAGUE |
| CHICAGO | LITTELFUSE | STANCOR |
| CLAROSTAT | MALLORY | SYLVANIA |
| CORNELL-DUBILIER | MEISSNER | SARKES TARZIAN |
| ELECTRO-VOICE | MERIT | TRIAD |
| ERIE | MILLER COILS | WALCO |
| EVEREADY | QUAM | |

ASK FOR THESE FINE PRODUCTS—
they safeguard your work and reputation

