

electronic service dealer

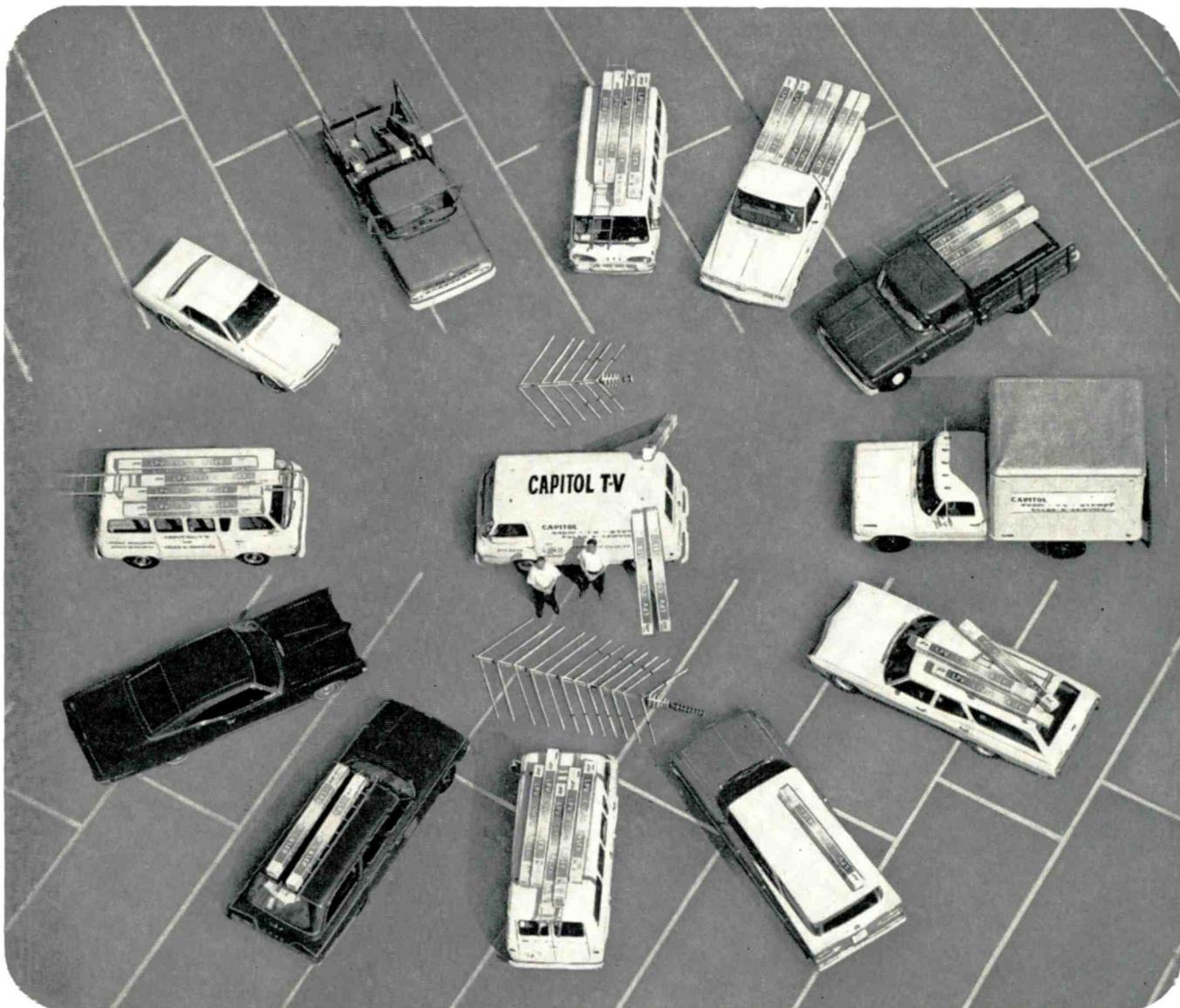
Vol. 7, No. 6
October, 1967

the official publication of the california state electronics association



MERCHANDISING ANTENNAS!

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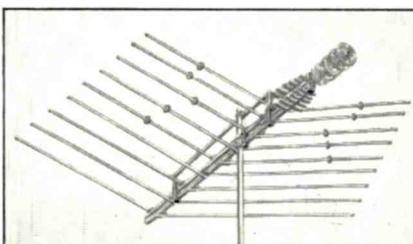
"When you guarantee finer color pictures..."

... like we do, you *better* deliver!" says George Comer and Bob Garrison, of Capitol TV Sales and Service, Atlanta, Georgia.

"We install antennas for many dealers, retailers, chains and department stores here in the Atlanta area. They look to us to give their customers the fine color reception their customers were guaranteed when they bought their sets. We make sure we deliver the best possible color pictures by installing JFD Color Lasers.

"Before using Color Lasers, we installed VHF LPV Log Periodics. Frankly, we didn't think a combination 82-channel antenna would work so well across the VHF, UHF and FM bands. But the Color Laser is proving it to us where it counts — in happy customers and protected profits."

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Only Color Lasers offer:

- BRILLIANT COLOR** — flat (frequency independent) response across each channel, free from suck-outs or roll-off. Keeps colors vivid and alive.
- PATENTED W-I-D-E BAND LOG PERIODIC DESIGN** — the most efficient ever developed — provides higher gain, better

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MORE DRIVEN ELEMENTS. Harmonically resonant capacitor coupled design makes dual-function elements work on both VHF and UHF frequencies. *Entire* antenna (not just part of it as in other log periodic imitations) responds on every channel.

LUSTROUS, ELECTRICALLY CONDUCTIVE GOLD ALODIZING promotes signal transfer, protects against corrosion, enhances appearance.

The Best Antenna for Color TV is The Color Laser by

JFD®

Now at your JFD distributor!

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JFD International, 64-14 Woodside Ave., Woodside, N.Y. 11377 JFD Canada, Ltd., Ontario, Canada
JFD de Venezuela, S.A., Avenida Los Haticos 125-97, Maracaibo, Venezuela

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electronic service dealer

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LETTERS

Dear Don:

Please send me a copy of the service price schedule. I receive three other Electronic Publications each month, but Electronic Service Dealer is the only one that gets cover to cover treatment by these old eyes.

Babe's Radio & TV
Galt, California

Dear Don:

Your publication ESD has become immensely valuable to us. Especially the reports on pricing during the past several months. May we please have a copy of the complete price schedule mentioned in the July Issue?

Prompt Radio & TV Co.
San Francisco, California

Gentlemen:

We noted your article regarding shop-rates in the July issue of ESD, and heartily approve of them, as we all know, the Electronic servicing industry is definitely very much underpaid, in comparison with other industries, especially in view of the fact that we have to keep and maintain delicate and expensive test equipment plus huge inventories of parts and tubes that are constantly changing, plus getting obsolete and losing our investments on such. So we in this northern most area of our state are definitely in favor of establishing higher rates for service.

Would very much appreciate two copies of the rates mentioned, one for us and one for a competitor of ours that also thinks the new rates advantageous.

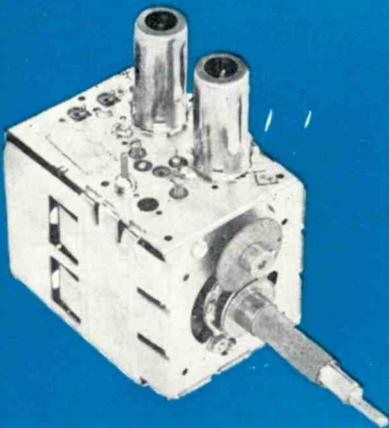
We read each issue of your magazine from cover to cover and enjoy it very much. It is nice to have a magazine for this western area that keeps us up with current information on what is happening in our state.

Thanking you in advance,

Cordially yours,
Don M. Ellis
Don's Radio & TV Service
P.O. Box 465, Eureka,
Calif. 95501

P.S. We are one of the oldest shops in the state, having been established in business in excess of 35 years continuously.

TUNER REPAIRS



\$9.75

FOR COMPLETE OVERHAUL

Includes ALL parts (except tubes)
ALL labor on ALL makes

24-HOUR SERVICE with FULL YEAR WARRANTY

Sarkes Tarzian, Inc., largest manufacturer of TV and FM tuners, maintains two completely-equipped Service Centers to serve YOU. Both centers are staffed by well-trained technicians in this specialized field and are assisted by engineering personnel to assure you of FAST, DEPENDABLE service.

⊕ Tarzian-made tuners—identified by this stamping—received one day will be repaired and shipped out the next. A little more time may be required on other makes. Every channel is checked and re-aligned per manufacturer's specifications, not just the channels which might exist in any given area.

You get a 12-month guarantee against defective workmanship and parts failure due to normal usage. Cost to you is only \$9.50 and \$15 for UV combinations, including all labor and parts except tubes. No additional costs. No

hidden charges. All tuners repaired on approved, open accounts. You pay shipping. Replacements on tuners beyond practical repair are available at low cost.

When inquiring about service on other than Tarzian-made tuners, always send TV make, chassis and Model number. Check with your local distributor for Sarkes Tarzian replacement tuners, parts, or repair service. Or, use this address for fast factory repair service.



SARKES TARZIAN, INC.
TUNER SERVICE DIVISION

See your distributor,
or use this address

10654 Magnolia Blvd.,
North Hollywood, Calif.
Tel: 769-2720

MANUFACTURERS OF TUNERS... SEMICONDUCTORS... AIR TRIMMERS... FM RADIOS
AM-FM RADIOS... AUDIO TAPE... BROADCAST EQUIPMENT

Gentlemen:

Planning to re-enter TV & Electronics Service Dealer field after a couple years lapse working in the Space Age Electronics Industry.

Have been following your progress in organization and sure hope no one gets panicky and starts breaking the chain; will pick up my new Certificate of Registration in the near future.

A couple copies of the normally accepted present price list which everyone wants would sure be a help to get on the right track. Am enclosing a self-addressed stamped envelope with my old store name . . . maybe it will change in the new location.

Very truly yours,
Donald D. Dull
13317 Corby Ave., Norwalk, Calif.

ELECTRONIC SERVICE DEALER



DON MARTIN

Recent Report Asks Governor To Abolish The BERDR

The Little Hoover Commission has recommended to Governor Reagan that two million dollars be cut from the State's Bureau of Professional and Vocational Standards budget. In this recommendation for cut backs, the Commission has asked that the Bureau of Electronic Repair Dealer Registration be abolished since its job has been completed.

This may come as good news for the few that feel \$35 per year is a lot of money to pay the State of California in order to do business. If this was a regular "business license" I couldn't agree more but it is not.

In past issues of this publication we have discussed the benefits we all have received from the existence of the BERDR and I am not going to go over it again at this time. It is just common sense for every dealer to look around and see for himself just what has happened in the last four years in California and draw his own conclusions. The State is a model in offering the public top service at a fair price. The false and mis-leading advertising is gone . . . the installation of un-needed parts is gone . . . the fast buck artist is gone . . . the honest dealer is making a profit for the first time since early radio days and things have never been better.

In next month's issue of ESD we will publish a report of the major criminal and license revocation cases the Bureau has achieved during the past few years. These names are familiar to anyone that may have been in competition with them so, I am sure, these people don't mind paying their \$35 per year. What about the areas where these problems didn't exist? Well there isn't an area anywhere that hasn't had the cut rate guy who would fix it for \$1 service call and make it up on unnecessary parts. Who suffered? The consumer certainly took it in the head. The honest dealer couldn't compete until the customer was stung real good. Was it worth \$35 per year or \$3 per month for an agency that was devoted to putting an end to this type of operator?

I predict right here and now that if the BERDR is abolished that everything that has been done to make this a profession will be destroyed . . . that every crook that ever picked up a tube will be back in it . . . that the consumer will be bilked and cheated by the very same guys the BERDR has put out of business. You will also be able to kiss goodbye the \$10 and \$12 house call because these same people will be killing you with their flood of cut rate advertising and loaded up invoices. You won't have to worry about technicians either because you won't need them.

Nuts you say, the local police are capable of keeping the industry clean. Nuts I say. They couldn't do it before and they are not going to be able to do it now. In fact, prior to the BERDR the local police agencies didn't want anything to do with prosecuting TV dealers. Why? Simple . . . they

couldn't obtain the technical evidence necessary to build a case and most of them were thrown out of court. If some slob did get convicted he paid his \$50 fine and went right back to work.

I am sorry to say it but I feel that much of this recommendation for the abolishment of the BERDR comes from a source within this Industry. This person has told me that the Bureau has done nothing and is of little use. He has also pointed out that many of the Bureau's in Sacramento are filled with pork barrel and that he would do everything possible to cut it out. Some of the examples he gave would make you sick and I wholeheartedly agree with him but not in the case of the BERDR. I hope that it will be remembered that the Bureau is not a drain on the general taxpayer but is supported by the industry itself who needed legislation to police itself. There may be a lot of pork barrel in Sacramento but it is not in the BERDR.

This same person told me that in all probability the Bureau could not be abolished through legislation but it could be killed through budget cuts. This is a polite way to abolish something by just cutting off the purse strings. It is done every day in politics when someone doesn't agree with a particular program but doesn't want to get into a political battle over the issue. It's a gutless way out!

The crusade for a State license law for radio and television service men started over 15 years ago. Many of the people who lobbied and pushed for a license are still around and know the frustrations of getting such legislation adopted. In fact, much of the recommended cuts will come from other Bureaus who are licensed, but the registration law was adopted as a new method of gaining the desired results of protecting the consumer and, at the same time, not setting training standards, grandfather clauses, etc. I know that many of the people who were pushing for a State license law were more interested in restricting competition than protecting the consumer but had to settle for the one benefit without the other. The people who were yelling the loudest at paying \$35 just to register will probably be back at the same old stand of trying to get a license law passed and that is impossible.

I never want to take issue with an action without recommending a different course of action. Instead of allowing the BERDR to be cut back or abolished . . . why not take the initiative to enact legislation that will set up professional standards with a testing procedure towards certification under the BERDR similar to the contractor's license? One of the early draw backs to a license law was that there were no industry testing standards but this is not true any longer. The National Electronic Associations (NEA) certified technician examination could certainly act as the basis for a strong technical qualification. There could be a grandfather clause

(Continued on Next Page)

* **DOES FINCO DESERVE**

YOUR BUSINESS

?

***FINCO** Antennas, Components and Accessories Equal or Out Perform The Best The Industry Has To Offer!

***FINCO** OFFERS DOLLAR VALUE SECOND TO NONE!

* **FINCO OFFERS AN
UNQUESTIONED
WARRANTY!**

* **FINCO IS A**
(RECOGNIZED)

**CHAMPION OF THE
ELECTRONIC TECHNICIAN
THE FINNEY COMPANY**

BEDFORD, OHIO

"YOU CAN'T LOSE WITH FINCO"

in this as well and could apply to all of those now registered. If you happened to be a nonservicing owner it would be necessary to have a licensed technician working for you. I think a positive approach to keeping what we have and expanding it to cover the professional and technical aspect of the service industry would be of greater benefit to the dealer and the consumer than eliminating the current BERDR.

In my opinion the Bureau has provided a real service to our industry and has been tremendously successful in ridding the industry of its enemies. If you agree with me or not I would like to know your opinion. In fact, maybe we can take a poll just to see the "fors" and "againsts." Just drop me a postcard with the word "FOR" or "AGAINST" on the back of it. We will tabulate the results and print it in the next issue. Address your card to: Don Martin, Electronics Service Dealer, P.O. Box 836, Hawthorne, California 90250.

Board of Directors Passes Resolution on Solid State T.V.

The following resolution was adopted by the Board of Directors of California State Electronics Association. It deals with a problem which is of concern to all independent radio-tv service dealers: WHEREAS, it is now obvious that the substitution of solid-state and integrated circuits for vacuum tubes in electronic home entertainment devices is going to be the accepted practice of all manufacturers of these instruments, and

WHEREAS, new and more complicated servicing techniques and the need for more elaborate test equipment will be taxing the professional and economic capabilities of the servicing industry to the limit, and

WHEREAS, the needless proliferation of the chips, modules, circuit panels and other components as to types, shapes, terminal arrangements, etc., on anything approaching the scale which has been prevalent in the production of vacuum tubes will, in all likelihood, seriously handicap and severely penalize the average shop which must service numerous makes of sets in order to operate profitably.

NOW, THEREFORE BE IT RESOLVED That California State Electronics Association go on record as urging all manufacturers involved to exercise sensible restraint and careful planning, to the end that—at least with regard to their own respective products—needless variations and obsolescence will be avoided, and

BE IT FURTHER RESOLVED That all aforesaid manufacturers be requested to act in concert with organizations in the servicing industry and the Federal bureaus and agencies which may, of necessity, be involved for the purpose of obtaining standardization of component design to the maximum extent practicable, to the end that service shops will not be required to acquire a mountainous and costly inventory of replacement items in order to provide expeditious service, and

BE IT FINALLY RESOLVED That copies of this resolution be forwarded to all of the major radio and television manufacturers, the United States Department of Commerce, the Federal Trade Commission, the Bureau of Standards, all associated organizations and their publications, and to the press.

(Continued on Page 8)



CSEA NEWS WIRE

A ROUND-UP OF STATE AND LOCAL NEWS OF
THE CALIFORNIA STATE ELECTRONICS ASSOCIATION

ACTRA CHAPTER TO HOLD CERTIFICATION EXAMS

The ACTRA Chapter of CSEA is in the process of setting up a Certification Examination night for that area. The examination itself, prepared by CSEA and NEA, will offer any dealer or technician an opportunity to become a National Certified Technician. As soon as final details are worked out the dealers in that area will be notified. It will be open to all and the initial cost is \$5. This is a one time charge and, if you fail the test, you can take it as many times as you wish. Under the NEA Certification program over 4,000 dealers throughout the United States now have certificates.

ESD ESD ESD

BAY AREA AUTO RADIO ASSOCIATION BEING FORMED

We have received notice that there is a move on to form a Bay Area Auto Radio Association. This segment of the industry has similar problems to the Television service business and many CSEA members are helping the organization to get underway. Wes Keys of Walnut Creek, a former State Director of CSEA, is an officer in the new association. He can be contacted for further information at 934-8447. The group will meet the third Monday of each month in Oakland.

ESD ESD ESD

SACRAMENTO STATE FAIR BOOTH A BIG SUCCESS

The Sacramento Chapter's booth at the Sacramento State Fair was an outstanding success according to Joseph Rodrigues. In a recent report he indicated that the chapter has already made reservations to do the same thing next year and he further stated that he felt the booth not only promoted CSEA as a state-wide organization but that it also acted as a reminder to other service dealers on how important membership in CSEA can be. The booth was sponsored by Leo J. Lotspiech of Dunlap Electronics and Russ Tatro of Norcal Electronics. These two Sacramento Distributors are also Associated members of the chapter.

ESD ESD ESD

SAN ANTONIO CHAPTER JOINS NEA

The San Antonio Chapter of CSEA has just voted 100% to become members of the National Electronic Associations. The announcement was made last month by Fred Bowerman who is President of the local Southern California chapter. At the same time, the chapter agreed to central billing through the State office and have notified the executive director to that effect.

ESD ESD ESD

PASADENA MEMBERS GO SOCIAL IN SEPTEMBER

The members of the Pasadena chapter held their big summer party last month at the home of Bill Schidding in La Canada. The dinner, swimming pool and social fun attracted over 75 people with a few going into the pool without benefit of a suit.

ESD ESD ESD

TWENTY SAN MATEO DEALERS ATTEND TRANSISTOR CLASS

Twenty technicians have enrolled in the San Mateo County Chapter sponsored Transistor Equipment Repair course to be held every Wednesday evening at the Radio Shop of the Sequoia Adult School in Redwood City. The class got underway the first week in September. At the same time, the chapter announced that 14 men took the certification examination last month and are waiting for the results to be announced. A similar examination is being planned for later in the year for those who missed the first one.

ESD ESD ESD

SAN DIEGO COLOR REFRESHER COURSE SET UP

The Color Refresher Course, sponsored by the two San Diego Chapters of CSEA, will get underway this month and will run for eight weeks. Three weeks of the course, will be by Charlie Parker with the balance made up of a series of discussions by set manufacturer representatives. Admiral, Motorola, Packard Bell, Zenith and RCA have agreed to provide field technicians to review the problems of sets that are two years or older. The course is open to anyone at \$2.50 per meeting with all CSEA members being offered the course without additional charge.

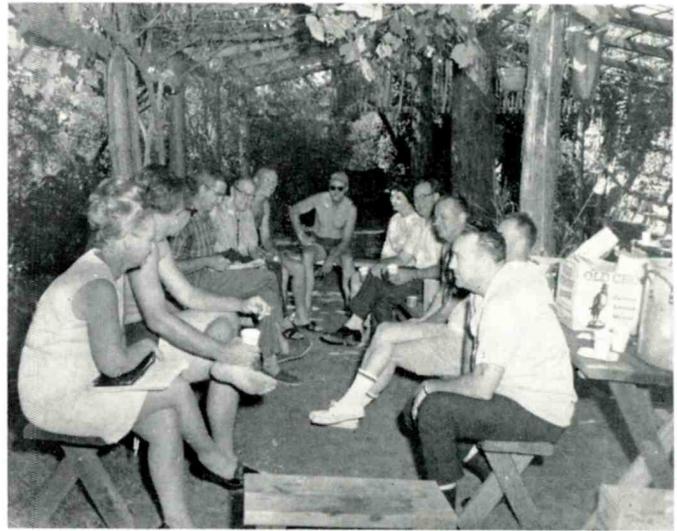


CSEA NEWS WIRE

(Continued)

ZONE "B" ANNUAL OUTING A SUCCESS

It wasn't all fun and games at the Zone B annual outing held last month at Oakley Dexter's home but it was close to it. While some of the guests enjoyed the pool, the Zone delegates held an interesting and informative meeting on the patio under the grape arbor. All in all, there were 41 children and adults at the outing and a good time was had by all.



EDITORIAL

(Continued from Page 6)

Labor Warranties May Be Just Around The Corner

One of the major problems of dealers who sell and service home entertainment products is the refusal of manufacturers to pay for the labor involved in fulfilling their warranties. Parts, of course, are covered but the labor on warranted merchandise is not.

A dealer who sells a set is expected to provide

the in warranty service while the manufacturer stands behind the parts. Manufacturers feel that the labor costs are included in the profit from the sale so naturally nothing has been done to cover these costs incurred by selling-servicing dealers.

No one has to tell you that the profit picture in color has turned an about face and competition is so great that there is little left over to take care of labor problems in providing service to in warranty sets. Philco recognized this quite awhile ago and has a system of paying dealers for the labor involved, based on going service rates, but they are just about all alone.

The ray of hope came through last month when Westinghouse agreed to pay for labor involved in servicing their laundry line. This does not mean that they will offer the same program in home entertainment but it does reflect an awareness by a major manufacturer that there is a need to provide labor costs on the warranty they are offering to the consumer.

A few months ago we suggested a service policy that could be included with the purchase of all products. One that could be presented to any authorized service dealer for his labor involved in repairing a set regardless of whether or not he sold the original product. I even suggested that it might be a good idea to use it in a similar way, like the auto industry, as a service check-up and normal call back after a certain period of time. To insure the program I suggested that this warranty must be signed by the customer and returned to the manufacturer before payment is made.

In my opinion such a warranty program is the only fair way in which to protect the service dealer from being consumed by in warranty labor costs. I honestly feel that if something isn't done to aid this side of the program that dealers will simply go out of the business of servicing what they sell or go out of the sales business. We can all ready see a return to service and the discontinuing of product lines by many dealers and I can not help but believe that warranty service is a major factor. It is simple math that if the profit is low to begin with and there is a good chance of losing even that through labor warranty costs, then it makes no sense at all to remain in the sales end of the business. Worth Thinking About? It is an easy way for every major manufacturer to PROVE that he is not interested in the service business.

THANK YOU!!

FOR THE TREMENDOUS INTEREST

YOU HAVE SHOWN IN YOUR

C.S.E.A. DISABILITY INCOME

PROGRAM

REGARDLESS WHETHER YOU GET
SICK OR HURT, YOU MUST HAVE
THAT MONEY COMING IN — AN
INCOME FOR AS LONG AS YOU LIVE.

ROBERT J. RYAN COMPANY

422 So. Western Ave., L.A.

(213) 386-8651



PRESIDENT'S MESSAGE

by HUGH WILKINS

How To Be Your Own Boss

Back in the days when you were deciding to go into business for yourself, I am sure that none of you set forth as reasons for doing so that you wanted to work longer hours for less pay under a thousand bosses instead of one. However, even though you didn't plan it that way, the chances are very strong that that's just about the way things turned out.

If you are a first-class radio and TV technician, have been in business for six or eight years, and you are giving "full time" to your business, you should be drawing *at least* a thousand dollars a month out of the operation for yourself, before deductions. I use that figure because that is what technicians in your class can get working for somebody else who, in turn, takes on all the risks, pressures, grief, etc., that you now assume by "being your own boss." This figures out to be an hourly rate of from \$4.90 to \$5.80, depending on whether the employee technician works 40, 44 or 48 hours per week.

Now let's look at Mr. Average Shopowner (the "boss man.") On top of being a first-class technician, he's a buyer, a salesman, a customer relations man, a supervisor and personnel manager and, of course, the man who handles all of the shop's financial problems and takes all the risks and worries. He works six days a week and probably averages close to ten hours a day. He knocks himself out trying to please all his customers — no matter how unreasonable their demands — because he's afraid of his competitors. If he draws \$240 per week out of the business for all this effort, he's averaging a magnificent \$4.00 per hour. If he shares this with a member of his family working all or part time for the shop, his hourly rate diminishes even further.

Your own experience may be better or worse than this. However, if you are not getting the going rate of pay for your class of technician for the work you perform as such, plus a substantially higher return for your role as owner, operator and general factotum of the business, and if you are working more than a five-day week, then you are failing to realize some very important benefits of being your own boss. And when

you let fear of your customers and your competitors force you to do foolish and unreasonable things (or fail to do sensible things), then you are not your own boss at all.

All of this leads to some happy examples of how some shopowners in a couple of counties in this state really managed to be their own bosses. By getting together in a legal and intelligent way, they did the following:

1. They established a five-day shop week in their areas. (They all close Mondays).
2. They determined what minimum service rates would have to be charged to enable them all to deal honestly with their customers and obtain for themselves a fair income commensurate with factors discussed above. They voluntarily abide by these figures.

But what made it possible for these shops to work together in this way? The answer is: *They are organized.* In one county, over 90% of the shops belong to California State Electronics Association; in the other, 98%. They found it possible to take intelligent, long-overdue steps without fear of what the competition would do because the competition was united with them in CSEA. By joining CSEA they became their own bosses in matters that really count. If you are not a member, I invite you to write for information regarding the Association in care of this magazine, P. O. Box 836, Hawthorne 90250.

The T.V. Radiation Scare

Discover that certain large-screen models of GE color TV sets were putting out potentially dangerous doses of radiation has got a lot of our people thinking. Al Fox, a member of the CSEA Board of Directors, was one who not only did some thinking but also some acting. Using experience he had gained from previous employment in a scientific project, Fox made some professional checks of radiation by TV sets in his shop in various states of disrepair. He was sufficiently concerned with the results to cause him to bring the following facts to the CSEA Board's attention:

1. Some of the sets he checked produced X-radiation close to what is usually considered as the maximum

limit of safety from the standpoint of hazard to health.

2. Radiation strength decreases as the square of the distance from the radiating unit. Thus, a technician working on a set would, at a distance of one foot, get 64 times the radiation existing at a "normal" viewing distance of eight feet from the set.
3. TV sets with abnormal breakdown in high-voltage sections are likely to produce considerably greater radiation doses than normal sets, particularly when the defect results in excessive high voltage.
4. There is some suspicion that the bodily effects of X-radiation are cumulative — that is, tomorrow's dose adds to today's and to yesterday's, and so on.

This whole matter is now being investigated by two Congressional committees considering legislation to establish a national product safety commission. In view of this fact, the CSEA Board of Directors, at its August 27th meeting, took action to urge upon these committees consideration of the potentially greater exposure to X-radiation of TV servicemen, due to the circumstances of their work, and therefore the need for special precautions to protect them against TV radiation hazards, if they are found to exist.

Proliferation Ad Infinitum?

All of us have many times suffered the frustrations and time losses resulting from the ridiculous proliferation of tube types which has descended upon our industry like an avalanche. However, when transistors began taking their place in the industry, we found that, previously, we just "hadn't seen nothin'!" For these, we have to have a guide book instead of just a little pocket folder.

We have been hearing much of late about modules, chips, integrated circuit boards, etc. It looks like we will have to stock these items if we expect to give any kind of reasonably fast service. But hold your hats! A single set of circuit "panels" covering all models of a certain make of solid state color tv set will cost you over \$140.00. Not so bad, perhaps, but the strong likelihood is that each manufacturer will have his own special version of each component which will only be useful in his sets, — possibly — in one particular model of his sets. What a wonderful opportunity to bury the independent TV service dealer under a costly mountain of unique little goodies, along with his tubes and transistors!

In Don Martin's editorial column appears a reprint of a resolution concerning this subject, which was adopted by the CSEA Board of Directors at its August 27th meeting. We will keep you posted on the results.

TRENDS IN ANTENNA DESIGN AND FUNCTION

By Paul E. Mayes
 Technical Consultant
 JFD Electronics Co.

The expanding services of the television broadcasting industry have placed many new requirements on the receiving antenna system. The advent of color television and the accelerated growth of UHF (ultra-high-frequency) broadcasting, occurring almost simultaneously, have forced extensive engineering changes in antenna design. Availability of several television programs in most localities, coupled with the current affluent society, has resulted in an increase in the number of families owning two or more television receivers. Many new antennas and accessories have been developed to provide the television viewer better quality reproduction of picture and sound in spite of the more stringent demands of color signals, the anomalies in UHF propagation, and the need for supplying simultaneous signals to several receivers.

ALL-CHANNEL ANTENNAS

In 1950 the six megahertz bandwidth of a single television channel required the use of an antenna with what were then considered to be "broad-band" characteristics. As more and more stations began broadcasting, the single channel antennas were not adequate in many locations. The first demand was for an antenna that would receive all the VHF channels.

The basic problem is one of maintaining the 300 ohm impedance needed to match that of the downlead and television set input. The variation of antenna impedance with frequency is reduced by the use of folded dipoles and fan-shaped or conical dipoles. However, antennas with a single dipole element, of whatever variety, suffer from a lack of directivity and consequently have a low gain. Directivity and gain can be enhanced by combining several dipoles in a single antenna called an array. Until recently, the problems of maintaining array performance over a wide band of frequencies were generally made more difficult as the number of elements in the array increased. A discovery which produced the optimum combination of narrow band dipoles into an array which had frequency independent performance was made at the Antenna Research Laboratory of the University of Illinois. It was there during the period from 1954 to 1957 that the log-periodic principles of array design were formulated and first demonstrated in operating antennas.

To understand how log-periodic design principles are applied to television antennas, refer to Figure 1, which shows a log-periodic array of dipoles. The array contains a number of dipoles of different lengths, each of which is halfwave (resonant) at a predetermined frequency in the low VHF band. All of the dipoles are "driven," i.e., connected to the two wire transmission line which serves as the feeder. The feeder is transposed between adjacent dipoles to produce a backfire pattern. That is, the directional beam of the array is pointed along a line parallel to the feeder and extending from the longest dipole toward the shortest dipole. The impedance at the downlead terminals should be 300 ohms when two wire downlead is used. Impedance transformers of various types may be used between the downlead terminals and the shortest dipole. Log-periodic design principles indicate what the lengths and spacings of the dipoles should be in order to maintain the same impedance across a very wide band of frequencies. The dipole lengths of a typical design are shown in Fig. 1 by indicating above each dipole the frequency at which that dipole is half-wave.

The basic design shown in Fig. 1 will cover all of the low-band channels (2-6, 55 to 88 MHz) with directivity and gain which can be controlled by the number of dipoles used; the more dipoles, the higher the gain. Furthermore, this array is readily adapted to also cover all of the high band channels (7-13, 174 to 216 MHz) encompass a bandwidth ratio of only 1.2, there are more dipoles than necessary for the high band. Fortunately, frequencies in the high band are approximately three times those in the low band. Thus it is possible to utilize the second resonance of the dipoles for high band operation. The second resonance occurs when the dipoles which are half-wave frequencies are indicated below each dipole for the array of Fig. 1.

Two modifications of the array of Fig. 1 improve the high band performance to a great degree and provide values of directivity and gain which are difficult to achieve in any other way. The increased gain at the high band is very beneficial since it helps offset the propagation losses which increase with frequency. The first modification is to change the shape of the dipoles by tilting the dipole halves forward in the shape of a "V". This improves the shape of the beam, providing a narrow lobe in the forward direction. The second modification involves introducing a lumped reactance along certain dipole arms. Two results are achieved by means of capacitive loading in the dipoles; the dipoles are resonant at a longer physical length (where they have higher gains) and the resonant frequencies are shifted so that more dipoles are resonant at frequencies in the high vhf band.

But perhaps the most significant result of the adaptation of log-periodic designs for television is the realization of an all-channel antenna which includes the very wide UHF band, as well as the VHF band, in an antenna structure with a single downlead. Although a number of approaches have been used in obtaining V-U antennas, space only permits showing one example, the JFD color laser, shown in Fig. 2.

This antenna consists of a log-periodic array of capacitor-loaded V-dipoles to cover the low and high VHF bands. The feeder in this case is formed by parallel booms. These booms serve as mechanical support for the dipoles as well as having

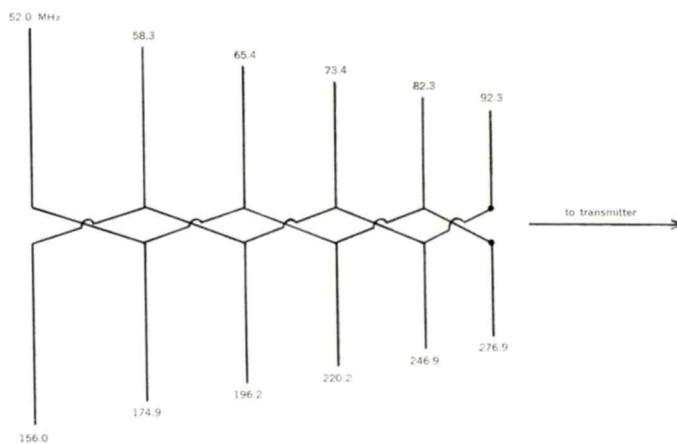


Figure 1—Log-periodic dipole array showing half-wave (top) and three-half-wave (bottom) resonant frequencies of each dipole.

several electrical functions. Transposition of the feeder is achieved by connecting adjacent dipole halves to alternate booms. UHF coverage in the color laser is provided by log-periodic array of special design which is mounted on and fed by the same twin-boom feeder which is used on the UHF section. The UHF dipoles are of sheet metal construction with wide cross-section to increase the bandwidth of each dipole. The array is zoned so that the gain is highest at the lowest frequencies in the UHF band. Most UHF stations broadcast in this part of the band. It is relatively easy to increase the gain at the higher frequencies by adding parasitic directors in front of the log-periodic driver. The amount of additional gain depends upon the number of directors. In contrast to conventional thin, linear directors, which are effective only near resonance and therefore increase the gain only near the high end of the band to be covered, the disc directors operate over a wider bandwidth and increase the gain over that of the log-periodic driver even at the low end of the UHF band.

The eighty-two channel antennas have applications in two types of locations which make up a large share of the total market. In or near several of the largest metropolitan areas all of the television stations have their transmitting antennas in a single location. In any situation where the angle between directions to all desired sources is small, an all-channel antenna can be mounted in a fixed position which is determined to give best reception. The other case arises when several channels are to be received from widely diverse directions so that the use of one or two fixed antennas is not feasible. An all-channel antenna with a rotator is the best system in this case.

AREA SPECIALS

In locations which are served by just a few stations it is often possible to design an antenna system which has a response that is peaked for just those channels. Each such system is custom designed for the important channels in the area. The early models of these area specials consisted of single channel antennas which were connected with frequency sensitive networks, often comprising sections of transmission line. Later models have been developed where the addition of frequency sensitive parasitic elements, directors and reflectors, to a single driven element could be used to increase the gain or shift the direction of the pattern at specific channels. With the present day proliferation of channels, the area specials of today are apt to combine several broadband antennas. Area specials which offer the viewer the advantages of nonobsolescence result from having coverage of the complete frequency band in all directions of interest. Such antenna systems are easily assembled by using frequency independent combining networks (couplers) to connect several all-channel antennas. An intermediate approach involves the use of broadband antennas combined with frequency sensitive networks. This provides an economical, easy to install package that is designed for the area and pretested for assurance of performance.

An example is the four channel, two direction VHF-UHF area special shown in Fig. 3. This antenna was designed to receive Channels 3, 12, and 17 from one direction and channel 15 from a direction almost 180 degrees removed. The three-element array of V-dipoles produces a directional pattern and sufficient gain for the VHF channels, 3 and 12. Three UHF drive dipoles are connected to an extension of the feeder for the VHF dipoles. Four thin linear directors are added to peak the gain at channel 17. Connected to the same boom by means of a swivel is another UHF array of three driven and four parasitic (director) elements. This array is peaked for channel 15 and can be steered over a limited range of angles depending upon the location of the installation.

So that only one download is required for the antenna of

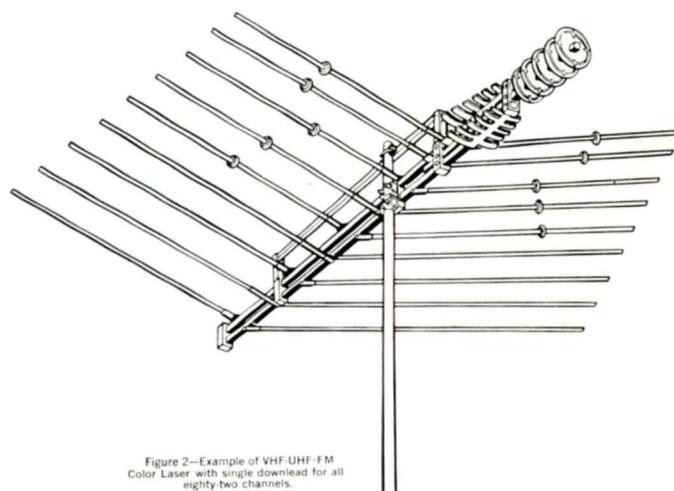


Figure 2—Example of VHF-UHF-FM Color Laser with single download for all eighty-two channels.

Figure 3, the feedpoint of the Channel 15 antenna is connected to that of the VU antenna by a twin-lead of proper length. At VHF, the Channel 15 antenna is a reactive termination on this line. When transformed through the connecting line, the impedance is very high and thus the parallel connection does not affect the impedance at the junction.

FUTURE DEVELOPMENTS

There has been much talk in the industry for many years on the possibility of eliminating the antenna for television. This conjecture has been prompted largely by comparison with AM radio where the long-wire antennas of the early days were long ago discarded. However, the problems associated with achieving adequate noise-free signal over the television channel bandwidth at the VHF and UHF bands are considerably different from those of AM radio. Perhaps the best chance for success lies in the use of active elements (transistors or other solid state devices) in the antenna elements. Extreme care must be exercised with such systems since these devices introduce noise into the system at a point where the signal is at a very low level and may thereby degrade the signal-to-noise ratio. When strong signals are present, and in the absence of selectivity, cross-modulation may occur, producing unwanted signals at frequencies where reception is desired. Nevertheless, the area of active antennas is one which has only recently attracted widespread interest and the research that has been prompted thereby, along with continuing improvements in solid-state devices, indicate that reduction in size of television antennas may indeed be in the not-too-distant future.

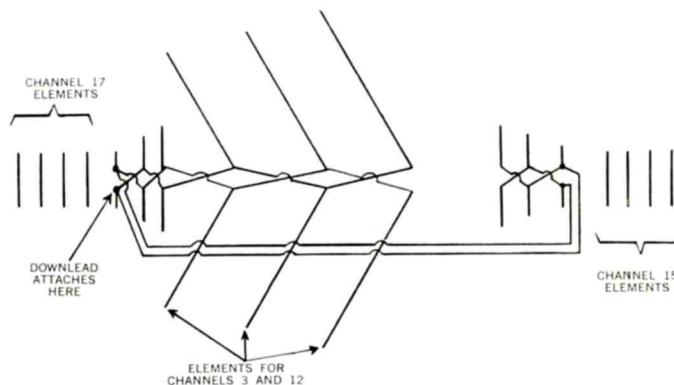


FIGURE 3—SCHEMATIC DIAGRAM OF VHF-UHF AREA SPECIAL ANTENNA



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The Bright Guy Awards is the big program Sylvania's running this year to boost your sales.

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Antenna sales 1970

A Look At The Future



By Neal Stewart
National Sales Manager
Gavin Instruments, Inc.

The accelerated pace at which consumer markets change today is something that most of us take for granted. The American consumer accepts change as the inevitable result of constantly improving technology. For this reason, more than any other, anyone involved in a particular industry must constantly seek and find ways to use improved technology to improve present products and devise new products that meet the needs of the public. Productive capacity and engineering capability are only part of the picture. As new and improved products become available new sales techniques must be utilized. Established markets need constant scrutiny and re-evaluation. New markets must be ferreted out by looking for existing vacuums. Often, the consumer demands a new item or service before it actually exists in useable form.

Antenna technology has advanced rapidly. Right now is the time to evaluate the marketplace; to define it and recognize it for what it is and capitalize on the vacuums that exist within this marketplace.

This Autumn all major television set manufacturers will be spending millions of dollars to promote the sale of their sets. The lion's share of these promotions will be on color sets. The sales potential of color sets is astounding. According to the latest available statistics, only 19% of the total TV sets in the United States are color sets. During the next several years, at least, the demand for color sets should be exceedingly strong. There are indications that the final quarter of 1967 will be a time of peak consumer demand. Since the middle of August, 1967, color set sales have increased by over 20% and industry predictions point to an even stronger demand as the year wears on. Demand for the first three quarters of 1967 exceeded that of 1966 by approximately 250,000 units and with market penetration as low as it is, it looks like we are just getting started.

Another factor that must be considered is the rapid growth of UHF transmission. In many areas of the country UHF has become an integral part of television viewing but its full development is not even near maturity. In the next twelve months, roughly fifty new stations are planning network programming and many will fill the local programming needs of the viewing public.

Multi-set ownership is becoming a fact of life. Thirty-one per cent of the television homes in this country own more than one set.

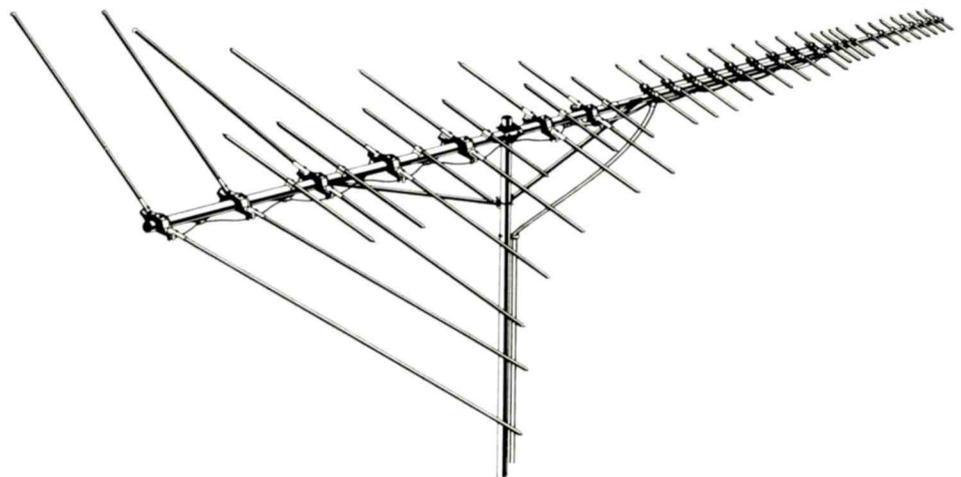
Ordinary replacement cannot be ignored if the antenna marketplace is to be accurately analyzed. Antenna losses often occur under extreme weather conditions. High winds, excessive snow or ice, hurricanes or a variety of these conditions can cause premature antenna failure. In addition, television antennas, like any other piece of technical equipment, can wear out due to old age. Obsolescence can create problems also. An antenna designed to perform to a given standard cannot perform beyond its capabilities simply because we want it to do so. The antenna should be considered an inte-

grated component of any receiving system. As the system changes the value of the component will change also.

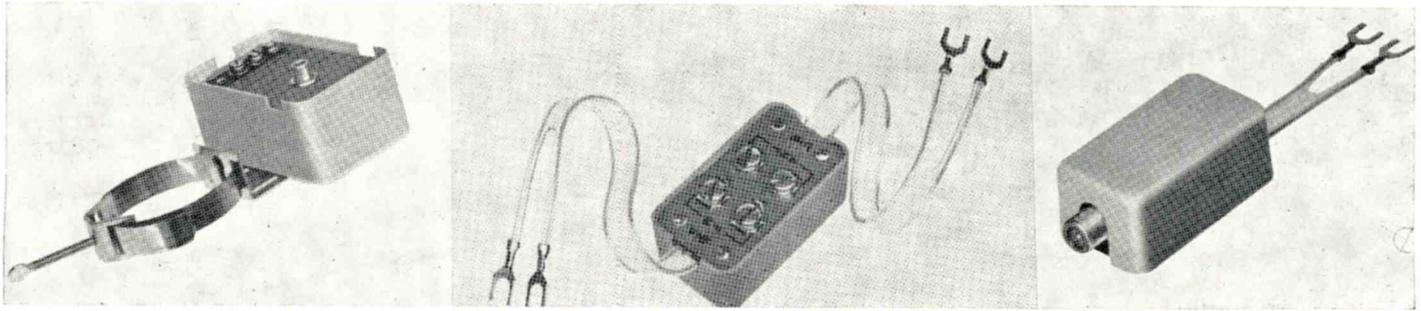
Given these four market factors, (1) strong consumer demand for color sets, (2) increased UHF market penetration, (3) increased multi-set ownership and (4) ordinary wear and obsolescence, it is possible to formulate a plan of attack that will insure increased antenna sales and profits.

First of all UHF/VHF/FM combination antennas that are specifically designed for color and monochrome sets will increase radically in popularity. This will satisfy the consumer that desires the convenience and economy of a one antenna system. The Gavin Gold Crest 1100 series antenna line has been recently expanded to meet growing demand for combination color antennas that exist right now. The market for the Gavin 1100 series line should easily triple within the next year.

Secondly, straight VHF antennas that do not perform well on color reception will be replaced in large numbers. The consumer that purchases a new color set will not be satisfied with less than ade-



This is a picture of the new Gavin Goldcrest 1134 VHF/UHF/FM Antenna that has been designed into a line for present and future installations.



Here are three types of Antenna System installation accessories that are now in use throughout the country. Left, the typical outdoor 75-300 OHM Transformer. Center, The minisplitter, a UHF/VHF/FM Signal Splitter. Right, the typical indoor 75-300 OHM Transformer.

quate color reception. In addition, he will require, in many instances, an add-on UHF antenna such as the Gavin CR5 to be used with the Gavin 1011 in order to receive UHF and VHF signal in color and monochrome. Even indoor antenna sales will conform to the UHF VHF color and monochrome synrome that is beginning in today's market and will permeate tomorrow's market.

The changing demand for antennas will lead to a network of new products. UHF VHF FM splitters, such as the Gavin C205, have become popular overnight and demand gets stronger everyday. Antenna couplers like the Gavin C201 provide a system whereby one down lead can be used. Various two set

couplers will become more important as multi-set homes increase. In a word, by the end of this decade or before, the MATV system for the home will become a reality.

The above market trends will change the techniques by which antennas are sold and by whom they are sold. The successful dealer will not sell antennas per se. He will be deeply involved in selling antenna systems or packages and he will tie set sales to antenna systems sales in order to increase his profit per sale which is becoming critical. If tomorrow's dealer can accurately determine the consumer's needs and successfully relate this information to the consumer, the dealer's profits will be insured. The dealer that specializes in antenna systems

will sell antennas and much more. The dealer that sells antennas will find selling a difficult task indeed. It could easily be a case of the tail wagging the dog.

Relating technology to the marketplace is the key to success of any business. In order to do this, we at Gavin developed the Gold Crest Antenna line on the theory that three conditions would be met by our antennas. First, our antennas will provide better broad band characteristics for increased reception. Secondly, we provide a more compact design to minimize the chance of failure due to wind and ice loading. Thirdly, we engineered and built antennas that provide more gain per dollar invested.

We feel we are prepared to meet the future.

Why not sell the best

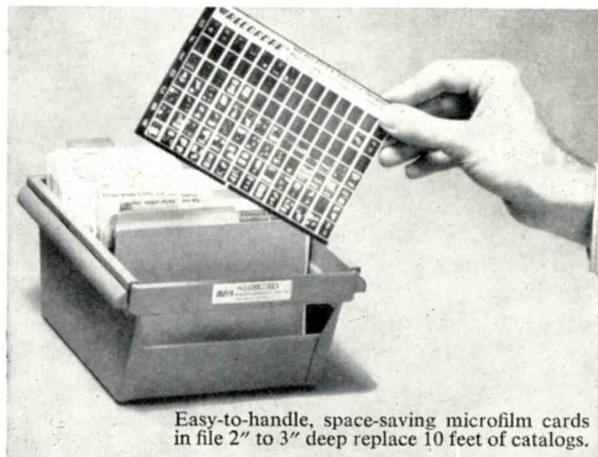
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Questions And Answers Designed To Make You . . .

An Antenna Expert

By David Stegner

So. Calif. Representative
The Channel Master Corp.

This article is directed to the salesman on the floor who is selling Color TV and who isn't? When you sell a television set, particularly, a new color receiver, you are selling more than a piece of merchandise. You are really selling home entertainment. It is not enough that your customer is satisfied with the set as an item of home furnishing. He must be satisfied, completely satisfied, with its performance.

Yet, unlike any other appliance, a television set's performance is not totally built-in. No matter what the price of the set, it cannot provide the performance your customer paid for unless it is connected to a good antenna system. Many a fine color TV has come back to the store simply because of a poor antenna. This is a lost sale, a lost customer, and lost income for you. This is why you should sell a proper color engineered antenna with every set.

In most areas, a good antenna for color is not a do-it-yourself proposition. It requires a certain amount of knowledge to select the right antenna and accessory equipment, plus truly professional installation skill. But don't worry. You don't have to be a technician to sell antennas to your TV set customers. Here is the secret formula.

When you have completed the sale on the set itself, ask your customer: "Are you now getting a good black and white picture where you live?" Even if the customer says yes, he may need a new antenna for color and not know it, because people can tolerate small problems in black and white that are disastrous in color.

To make you the expert on the antenna questions here are a list of the most commonly asked questions and the answers.

1. I am now getting good reception on my black and white set will my present antenna do the job or will I need a new one?

A. If you are really getting perfect reception now, the chances are you will continue to get excellent color reception with your present antenna. But, the fact is that much so-called "good" reception is not really good at all. On the contrary, many forms of poor reception include

such things as ghosts, smear, and moderate snow. While ghosts and snow may be quite "watchable" in black and white, you will find them intolerable in color, because they will be much pronounced and disturbing. Here is another way to look at it. Your present antenna may be getting old and worn out. (they do you know). A color set is an investment of several hundred dollars. Why jeopardize the performance of this expensive set by connecting it to what may be an inadequate or overaged antenna, which may prevent you from getting all the picture pleasure you paid for?

2. Are TV reception problems limited to people who live a great distance from the stations—in the so-called fringe areas?

A. No. Although it is true that rural set-owners will have the greater difficulty in getting good reception than their city cousins statistics show that at least 35 percent of TV homes in strong signal areas are getting poor reception on one or more channels.

3. What kinds of picture problems are most common in the suburbs?

A. 1. Ghosts (multiple images) and smears are very common in such areas. Ghosts occur when your set picks up signals reflected off hills, other buildings, gas storage tanks, etc. (also often seen as a smeary picture).

2. Another fairly common problem is interference caused by automobile ignition, etc.

3. Even in strong-signal areas, there are "weak-signal pockets" where TV pictures will appear flat, fuzzy, and snowy.

4. Most common problem: Gradual "reception breakdown", due to an aging antenna. This picture deterioration creeps up on you so slowly you hardly know its happening. Symptoms are similar to 3. above.

4. What can be done for these problems?

A. 1. For ghosts and smears—a directional antenna (one that picks up only from one direction at a time) will help considerably. So will an antenna rotator—a device which turns the antenna and aims it at the station.

2. Ignition noise is most pronounced when an indoor antenna is used. An out-

door antenna will usually reduce or eliminate such noise, because it is located further from the source.

3. For weak pictures, you should install your antenna on a higher mast, or change to a more powerful antenna.

4. Replace your antenna with a new one. You'll see instant dramatic improvement. A modern antenna, thanks to recent technical advances, will probably give you better pictures than your old one did when it was new.

5. Will a color antenna work on black and white?

A. Of course. Because color requirements are even more exacting a well-designed color antenna will provide excellent performance on black and white.

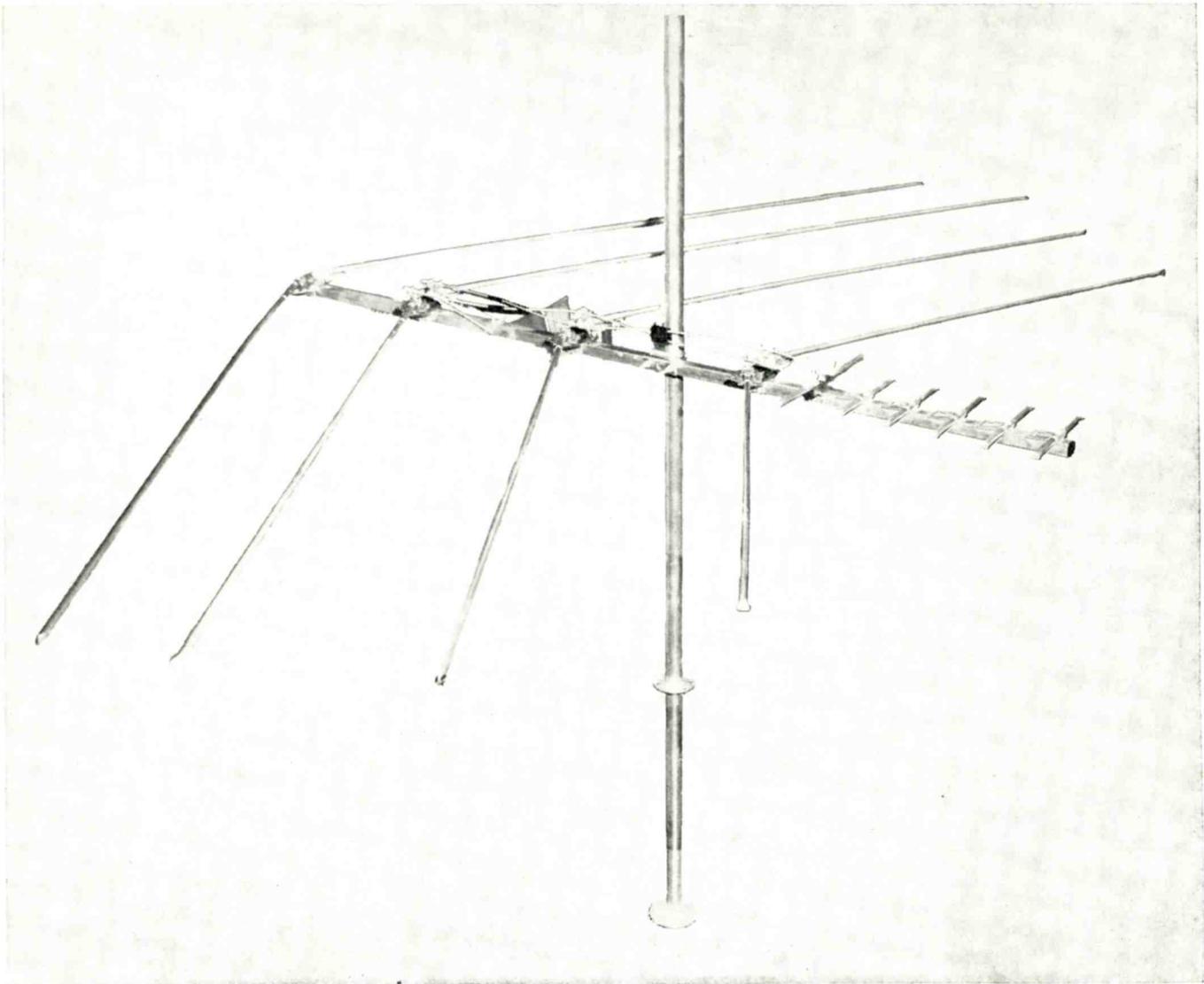
6. But if I really am getting perfect black and white, can I be certain of getting perfect color TV?

A. Surprising you can not be certain until you actually hook up the set and look at the picture. Here is why: a black and white picture is carried primarily on only one frequency. (The sound is on another frequency.) But on color TV, the color signals are carried on still another frequency (called the "color sub-carrier"). A well designed color antenna will pick up both frequencies (carrier and sub-carrier) with equal strength. If your antenna is not designed for color, some colors may not come in as strongly as others, and it's possible to even lose a color almost completely. The results may range from distorted unreal colors to poor, muddy, pictures. A carefully designed antenna will pull in all of these frequencies at full strength, and assure you of high-fidelity color reception.

If your customer still thinks his old antenna is adequate for color, ask him if he intends to keep his old set (or sets) for use elsewhere in the house. Point out that multiple set use not only requires an exceptionally good antenna but special coupling equipment, that without this not one of his sets will operate properly. Incidentally, you might run into a technically oriented customer who asks about a "master antenna" or "distribution system". Don't let this throw you. This is known as MATV. Tell your customer it requires a technical survey of his home, then contact your Channel Master distributor for help.

Undoubtedly you will find customers who will say "just deliver the set . . . I'll take my chances with my old antenna". Be sure to give these fellows a copy of the "Color Insurance Policy" booklet you obtained from your Channel Master distributor. It's your best insurance that he will come back for a good antenna installation . . . and not send the set back because of poor reception.

Now, if you're sold on color . . . let's keep color sold.



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| 2 Exclusive triple thick sleeved elements. | 6 Metal reinforced insulator, insert cup, and heavy duty rivet. |
| 3 Drive line pedestals assure positive drive line spacing. | 7 Back-up bracket and square boom. |
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Easy-To-Install Home MATV Opens New Fields For Sales And Profits



By Milt Dienes
Sales Mgr., Dist. Sales Div.
Jerrold Electronics Corporation

With increasing popularity of low-priced television sets, small-size "personal" black-and-white sets and FM and high fidelity equipment, many homes today need the ability to distribute TV signals to two, three or four—and sometimes even more—receivers. This presents distributors and dealers with a golden opportunity to get in on a rapidly growing market.

Although homes in many areas as yet receive only VHF and FM, the increasing number of UHF stations now makes it advisable to install amplifiers, coaxial cable and outlets capable of receiving and distributing signals on all channels from 2 to 83, including FM. As of August 17, 1967, there already were 126 commercial and 62 educational UHF stations on the air, with 181 additional UHF stations scheduled to go on the air soon.

Thus, planning ahead for the whole spectrum of signals will eliminate the possibility of prematurely obsolescing home equipment.

A few years ago, TV dealers and installers hesitated on installing relatively complicated small master antenna television systems (MATV) in homes. But, today, with greatly simplified equipment, such systems can be installed easily and profitably by common-sense technicians.

Simple to Install

Proper installation and wiring of a small home distribution system now is as simple as that for a doorbell, intercom or telephone, already standard equipment in many homes.

It is best done at the time the home is being built, for then, the outlet boxes and coaxial cables can be led most easily through wall cavities, just like electric wires and plumbing pipes. Thus, builders and electrical contractors are natural customers. But, it is by no means impractical for existing homes, too.

Present-day equipment, such as Jerrold's new TAC-4 Colorcaster amplifier, a basic four-set unit, is capable of handling all VHF, UHF and FM signals. It permits outlets to be placed in many

locations around the house to handle all these signals and, the TAC-4 amplifier is as attractive as a decorator-type doorbell unit.

Of course, the system should start off with a good all-channel antenna properly mounted and oriented to feed the amplifier with maximum reception capability. Jerrold recommends its 82-channel Coloraxial antenna, good quality coaxial cable such as Jerrold's "CAC" and Model T-380-A matching transformers at the sets.

The transformer converts the 75-ohm impedance of coaxial cable to a 300-ohm twin-lead input into the set. It also splits the TV signals, sending UHF to the UHF terminals of the TV set and VHF to the VHF terminals.

Coaxial cable should be run from the antenna to the TAC-4 amplifier. Then, similar cables are run to the transformers at the sets. Jerrold "CAC" Cable comes in kit form of standard lengths with factory-installed screw-on fittings, for ease in making connections.

The cable can be run near electric wires, in conduits, through aluminum frames, along baseboards—and still deliver high quality pictures.

How the TAC-4 Amplifier Works

The TAC-4 takes the single input signal from the antenna and splits it into four outputs. It also amplifies each of the four output signals about 11½ times (3 db) the original input signal from the antenna.

For the many people who like to carry portable TV sets and FM radios into bedrooms, down to the basement or out on the patio, four antenna signal outlets might not be enough.

Fortunately for them, up to eight outlets can be provided in a home simply by using splitters with the TAC-4. By connecting Jerrold SCX-2, 82-channel, two-way splitters to each of the TAC-4 outputs, double the original number of outlets can be provided. The TAC amplification offsets signal losses caused by the splitters.

Tremendous Potential Market

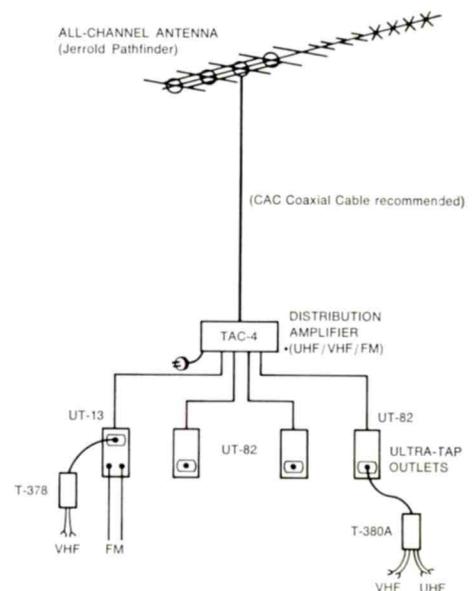
Such simple-to-install systems thus will satisfy the TV requirements for the majority of home owners for many years to come. Yet the cost of such convenience is modest, considering what it offers.

Because of the importance of TV and FM in today's homes, builders can use the convenience of MATV systems as a major selling feature. But, distributors first must sell this idea to builders and electrical contractors.

Installation of interference-free MATV systems in a few homes will lead to more sales as neighbors and friends compare their own relatively poor reception with the convenience and signal quality of MATV-equipped homes.

Thus, there are opportunities for distributors, dealers and installers to benefit from this profitable new field. Installers will find small systems a profitable new business, or a wise adjunct to their present operation.

TYPICAL ALL-CHANNEL UHF/VHF COLORAXIAL BROADBAND 75-OHM MATV SYSTEM



Planning Life Insurance For Business Contingencies

By Ralph Butz

Special ESD Feature Editor

Partnership Insurance—Archer and Vogel established a business on a partnership basis, each man investing \$20,000. The business prospered and within five years each partner's interest in the business had increased to \$40,000.

One morning Vogel's wife called Archer to report that her husband had become ill during the night. A doctor was called. "A case of food poisoning," he said. "You'll be OK in a few days."

When Vogel returned to work a few days later, Archer remarked that he had been worried his partner's illness might be serious.

"I know what you were thinking," Vogel replied. "I was thinking about the same thing while I was sick. If either one of us should die it could break up the business unless the surviving partner could finance the other half of the business."

"I doubt whether you or I could do that," Archer commented. "We have all our money tied up in the business. Suppose we talk to Attorney Folsom and find out what he suggests."

After they explained their situation to Folsom, he suggested that the men enter into a buy-sell partnership agreement, binding the surviving partner to purchase the deceased partner's interest at an agreed price, also binding the deceased heirs to sell at that price. This would eliminate the necessity of liquidating the business.

"It isn't likely that either of us would have the ready cash to fulfill the terms of such an agreement," Archer objected.

"The easy way to take care of that problem," Folsom suggested, "is for you, Archer, to purchase a life insurance policy on Vogel. Vogel, in turn, will purchase a policy on your life. A \$40,000 life insurance policy on each partner would meet the needs of the present situation, and the surviving partner would use the proceeds from the insurance policy to pay according to the buy-sell agreement. If the busi-

ness continues to grow, a new agreement may be written at any time and additional insurance may be purchased to cover the increased value of each partner's assets in the business."

Archer and Vogel readily agreed that it would be worth paying the insurance premiums under such an arrangement, enabling them to plan for the future expansion of the business.

Insuring A Key Employee—Woodley incorporated his business and owned all the company's capital stock. He had become dependent on Gordon, a key employee, who had demonstrated his ability to manage the business when Woodley went away on business trips for extended periods. Woodley agreed to sell Gordon shares covering one-fifth interest in the business, enabling him to share in the profits in addition to his salary.

Woodley thought of the possibility that Gordon might die, which might cause a serious financial loss until a suitable successor could be found. He would also want to purchase from Gordon's heirs the shares representing the one-fifth interest in the business. To cover that contingency, Woodley purchased life insurance on Gordon for an amount to cover the probable loss.

Sole Proprietorship — When Bill Smith started his own business at age 30 he invested all his savings in the venture. He was aware that his wife would not be capable of continuing the business if he should die, that she might be forced to liquidate the business at a heavy loss. In order to provide for such a contingency he purchased a whole life insurance policy for \$50,000. He had thought of a \$100,000 policy but decided he couldn't afford to pay the premiums while starting a new business.

The insurance company declared a dividend each year and Bill had three options. He could take the dividend in cash, use it to reduce the annual premium, or apply it to the purchase of as much additional insurance as the dividend would buy.

He selected the latter option, aware that in future years he might not be in physical condition to purchase additional insurance. He also knew that the premium rate would increase as he grew older.

He made a wise choice because the dividends were buying insurance at "pure" insurance rates, without paying for overhead or commissions. After 20 years the dividends had purchased almost \$10,000 in additional insurance. At times during the 20-year period he could have used a cash dividend to good advantage, but he was intent on having his protection increase from year to year. He knew that if he needed money temporarily he could request a loan against the cash value of the policy.

Bill plans to continue using the dividends to increase his insurance, at least until age 65, when he estimates his original \$50,000 policy will have increased to about \$75,000.

An executive of a large mutual life insurance company said that most people in the past have taken the dividends in cash or used them to reduce premium payments because the insurance industry had been in the habit of promoting these plans.

"Insurance needs have changed," he said. "Men admit the need for more permanent insurance protection for themselves, their business and their families. Using the dividends to purchase low-cost permanent insurance is an easy way to increase protection from year to year."

He listed the following advantages of using dividends to accumulate paid-up additions:

(1) A policyholder can increase his permanent insurance with the dividends option even though he may be "uninsurable" for medical reasons.

(2) Death benefits and cash surrender values of paid-up additions have the same exemptions from creditors' claims as the benefits and values of the policy itself.

(3) A policyholder can borrow against the cash surrender values of paid-up additions.

(4) The cash values of these paid-up additions will never be less than the total of the declared dividends, and generally will exceed the declared dividends.

(5) The policyholder who has used his dividends to purchase additional insurance will have provided his business, or his family, with greater protection than if he had taken the dividends in cash or left them to accumulate at interest. Moreover, interest on dividends left to accumulate is fully taxable year by year as credited.

electronic
service dealer

TRADE / TALK



**FIGART'S NAMED TOP
JERROLD ANTENNA
DISTRIBUTOR**

Los Angeles, California—The Figart's Radio Supply Co. in Los Angeles was recently named as Jerrold's top Antenna Sales winner for California. The presentation of the award was made by the Jack Berman Company who are the local Jerrold Representatives in Southern California.

The award was made in recognition of the largest sales volume in Jerrold Antennas for the past year to Jim Pelham (third from left), owner of Figart's. Also receiving an award was Gid Hallford as Figart's "Best Saesman" (second from left). Berman Company personnel are Stan Weiss (left), Jack Berman (second from right) and Dan Levine (right).

**SOUND BUSINESS SHOW
DATES SET FOR NOVEMBER**

Los Angeles, California—The Sound Business Show, sponsored by the Electronic Representatives Association of Southern California, is set for November 9 and 10 at the Olympian Motor Hotel in Los Angeles. Sound dealers are asked to mark their calendars and make sure they attend this outstanding event.

**SHEPARD-STERN TO REP.
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Los Angeles, California—With reorganization of Harman-Kardon, Inc. as a wholly owned subsidiary of Jervis Corp.,

representations of its Commercial Sound Products Division has been awarded to Shephard-Stern Company of Burbank. The firm will represent the line in Southern California, Nevada and Arizona.
(Continued on Next Page)

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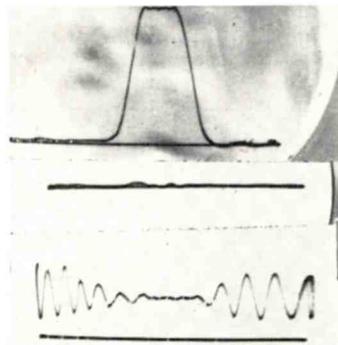


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TRADE TALK

(Continued)

M. L. FINNEBURGH SR. CONTINUES EFFORTS IN BEHALF OF TV SERVICE TECHNICIANS

Mr. M. L. Finneburgh Sr., Board Chairman of The Finney Company, Bedford, Ohio based Electronics firm, will round out the third quarter of his 1967 speaking activities with an address to the convened TV Service Technician members of the Television Service Association (TELSA) of Connecticut.

The well known and popular spokesman for the TV Service Technicians, and Chairman, of the All Electronics Industry Speakers Bureau, with this address to be given October 1st at the Hotel America in Hartford, will have brought his philosophies, capsuled in his subject title, "The Future Belongs to Those Who Prepare for It," to some 32 industry audiences in almost as many states, thus far this year. Two recent such addresses were before the National NEA Convention in Des Moines, Iowa, and the National NATESA Convention in Chicago.

RCA OFFERS PREMIUMS WITH COLOR TUBE PURCHASES

A new premium program that offers TV service dealers and technicians their choice of two science books or one famous-brand shirt with purchase of any replacement-type RCA 21-inch color TV picture tube was announced by RCA Electronic Components and Devices.

Details of the program, called "Volumes of Value," which extends from August 7 until January 31, 1968, were disclosed by Joseph J. Kearney, Manager, Distributor Sales.

During this period, a TV service dealer is entitled to receive, without added charge, any two selections from the LIFE Science Library with the purchase of any RCA 21-inch color picture tube, other than test tubes. With 24 covers fascinating aspects of the world of science including "Mathematics," "Machines," "The Body," "Flight" "The Engineer," "Man and Space," and other interesting topics.

If a dealer prefers, he may obtain, as an alternate, a gift certificate for his 21-inch color tube purchase, which entitles him to select any item in the 20-page "Best of Van Hensen" shirt catalog. The catalog features permanently pressed shirts with dozens of attractive styles for both men and ladies.

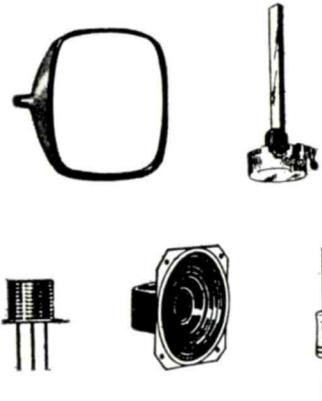
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PRODUCT NEWS

NEW JFD SPLITTERS FOR 75 OHM COAXIAL CABLE

A new 75 ohm, 2-way splitter and a new 75 ohm, 4-way splitter have been announced by JFD Electronics Co. Both are designed for VHF, UHF, and FM transmission. Low insertion loss, good interset insulation and low VSWR recommend these units for use with color sets as well as monochrome. Wideband response is essentially flat.

Model SC12-75, the 2-way splitter, splits one 75 ohm VHF/UHF/FM line into two 75 ohm outputs. Insertion loss is 3.2 db, isolation 15 db, frequency response $\frac{1}{2}$ db, and VSWR 1.2:1. Three "F" connectors are supplied.

Model SC72-75, the 4-way splitter, splits one 75 ohm VHF/UHF/FM line into four 75 ohm outputs. Insertion loss is 6.4 db, isolation 12 db, frequency response $\pm\frac{1}{2}$ db, and VSWR 1.3:1. Five "F" connectors are supplied.

Both units convert to 300 ohm impedance through use of JFD Matching Transformers, Models MT54, MT56 or MT58. Both may be combined to provide any number of lines. Measurements of both are 2"x2"x $\frac{3}{4}$ " high. Model SC42-75 retails for \$7.95; Model SC72-75 retails for \$10.95.

For further information, write or call JFD Electronics Co., 15th Avenue at 62nd Street, Brooklyn, N.Y. 11219. Phone 212-331-1000.

PRECISION APPARATUS VTVM NEEDS NO OHMMETER BATTERY

This new professional VTVM, Model V-95, introduced by the Precision Apparatus Division, Dynascan Corporation, Chicago, incorporates an exclusive solid-state power supply replacing batteries normally required in a VTVM's ohmmeter section. Features include a rugged 7" meter movement with mirrored scales to eliminate parallax; specially-calibrated scales for reading low-voltage measurements during transistor analysis in the .5-, 1-, 1.5- and 5-volt ranges; and simplified peak-to-peak and db scales. A personalization feature designed to accommodate the user's name is built into the handle. Price is \$79.95. Complete specifications may be obtained from Dept. MJ, Precision Apparatus Division, Dynascan Corporation, 1801 W. Belle Plaine Ave., Chicago, Ill. 60613.



TIPS FOR MODEL 100A ENDECO DESOLDERING IRON

NEW TIPS ADD NEW USES FOR ENDECO SOLDERING IRON

Two new tips that add new uses for the Model 100-A Endeco desoldering iron are announced by Enterprise Development Corporation, 5149 East 65th Street, Indianapolis, Indiana 46220. They bring to six the number of different size tips available for the largest of the two Endeco irons.

The irons are used to remove soldered components from circuit boards and to resolder replacements. Hollow tips fit over leads or around connections to vacuum all solder, leaving terminals and mounting holes clean.

The new tips are in the intermediate size range—with openings of .046" and .067". Packaged in clear plastic, Endeco tips come three of each size per package, or in an assortment of six different sizes for both model irons.

SKYLINE SERIES AR-10B ANTENNA ROTOR SYSTEM DESCRIBED IN BROCHURE

A new four page brochure completely describing the newly revised AR-10B Antenna Rotor System is available from Cornell-Dubilier Electronics. This system includes a rotor adapter which adds further structural support to accommodate large antenna arrays.

Also illustrated and described is the TA-6 Thrust Bearing, which when incorporated into the system, permits installation of antenna arrays over 5 feet above the rotor unit.

Control of the Skyline Series AR-10B is provided by the same automatic control box used on larger rotor systems. The performance of this unit has been proven through extensive consumer use.

Technically correct installations are

also illustrated showing proper installation techniques for chimney mounted, eave or wall mounted, roof-guyed mounted, and tripod mounted antenna rotor systems.

NEW G.E. COMPONENT REFERRAL MANUAL NOW AVAILABLE

Owensboro, Ky. — The newest edition of General Electric's popular "Essential Characteristics" component reference manual is now available through GE distributors.

The twelfth edition of this electronic components publication contains 360 pages of data on receiving tubes, five-star tubes, special-purpose tubes, picture tubes, capacitors, photoconductive cells, photoconductive cell-lamp combinations, and reed switches.

Prepared by General Electric's Tube Department, this "single-source reference" has been updated to include over 300 of the newest receiving and television picture tubes, and will provide excellent guidance for service technicians, design engineers, and hobbyists.

Of the 3287 tubes described in the manual, 741 are black-and-white and color picture tubes. This broad coverage describes practically every tube found in any piece of electronic equipment, including AM, FM, or television. The detailed data also applies to special tubes and products for use in a variety of situations.

The handy manual, ETR-15M, is available from General Electric distributors at a cost of \$2.00.

FINCO EXPANDS COLOR SPECTRUM ANTENNA SERIES

Bedford, Ohio—With the addition of four new models to the Finco Color Spectrum Series of Frequency Dependent Antennas, The Finney Company, Bedford, Ohio based manufacturer of TV and FM antennas, electronic components and accessories, announces that the Color Spectrum Series is now available in 35 basic models and with kit packs and special applications, a total of 45 Color Spectrum model antennas are now available. "With this many models, conceived to answer the problems in most every antenna market," Burton Johnson, Finco Sales Promotion Manager states "we feel we can truly say

(Continued Next Page)

NEW PRODUCTS

(Continued)

that Finco has a Color Spectrum Antenna to meet the most stringent requirements found in any reception area both as to signal frequency, signal strength and marketing conditions."

The new models are the CS-B2, an 82 channel TV combination 300 ohm impedance antenna which is designed for those areas where the VHF signal is of moderate strength and the UHF signal relatively weak. The model XCS-B2 is a 75 ohm version where the same relative signal strengths are found, but interference conditions or the installation make the use of coaxial cable transmission line preferable. The new model CS-C2 is also an all channel TV plus FM 300 ohm antenna designed for those reception areas where both the UHF and VHF signals are relatively weak. The new XCS-C2 is the 75 ohm version of this model. Manufacturers suggested list price for the new models are \$39.95 for the CS-B2, \$48.45 for the XCS-B2, \$51.95 for the CS-C2, and \$60.45 for the XCS-C2.

LOW-LOSS PERFORATED TV ANTENNA WIRE OFFERED FOR COLOR TV, UHF AND VHF

Wayne, New Jersey—A new perforated television antenna wire designed to improve all types of TV reception—color, UHF and VHF black-and-white—was introduced by Jersey Specialty Co.,

Inc., P.O. Box 235, Wayne, N.J.

The new perfo 8-0 lead-in wire increases signal transfer from antenna to TV set by two and a half times over conventional wire. It is constructed with full 20 gauge copper conductors.

Extremely low signal loss is achieved in the Perfo 8-0 because of the air spaces between the conductors. Because air is the best Dielectric, the perforations in Perfo 8-0 insure maximum signal strength transfer from antenna to TV set, thereby producing vastly improved picture quality.

The new Perfo 8-0 has a 300-ohm matching impedance. As all TV sets and most home antennas also are rated at 300 ohms, virtually all matching problems are eliminated.

The New Jersey Specialty wire is light weight, offers improved flexibility for easy installation, and is less resistant to wind. It is available in 500-foot spools and in 50, 75 and 100 foot precut lengths.

MERGER OF JERROLD AND G.I. APPROVED

New York, New York—Martin H. Benedek, Chairman of the Board of General Instrument Corporation, and Robert H. Beisswenger, President and Chief Executive Offices of The Jerrold Corporation, announced that their respective Boards of Directors have approved the acquisition of Jerrold by General Instrument on the basis previously announced. The formal merger documents, pursuant to which General Instrument will issue seven-tenths of a share of its Common Stock for each outstanding share of Common Stock of Jerrold.

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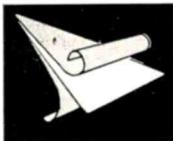
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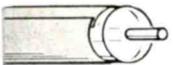
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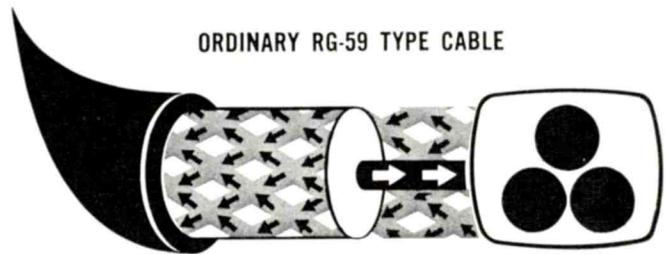


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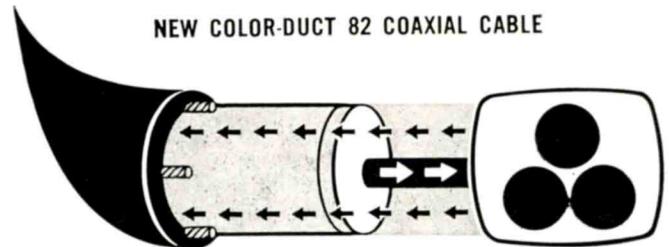
In ordinary braided shielding, air spaces are formed between the wire strands, reducing both the conductivity and the shielding effect from 80 percent in the best qual-

ity coax to as low as 50 percent in lower grade cable where fewer strands have been used in the braid.



ORDINARY RG-59 TYPE CABLE

While current in the center conductor flows in a straight line with minimum resistance, to complete the circuit between set and antenna, return current must traverse individual braid strands in a "maze" pattern that creates a resistance loss. In lower grade standard coax with fewer strands, this loss is even greater.



NEW COLOR-DUCT 82 COAXIAL CABLE

The over-all shield, plus four wires, conducts current through the same low resistance, straight-line path as the center conductor. The result is lower db loss per 100 feet at both VHF and UHF. In fact, at higher UHF frequencies in the average installation, use of Color-Duct 82 instead of ordinary coax is actually the equivalent of adding a 3 db amplifier to the installation! This is a tremendous advantage for UHF color as well as VHF fringe area coaxial installations.

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