

electronic service dealer

Vol. 6, No. 9

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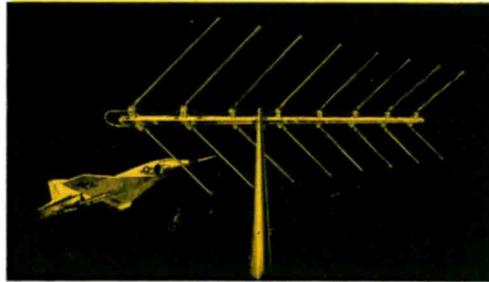


THE INS & OUTS OF OBTAINING A LOAN FROM S.B.A.

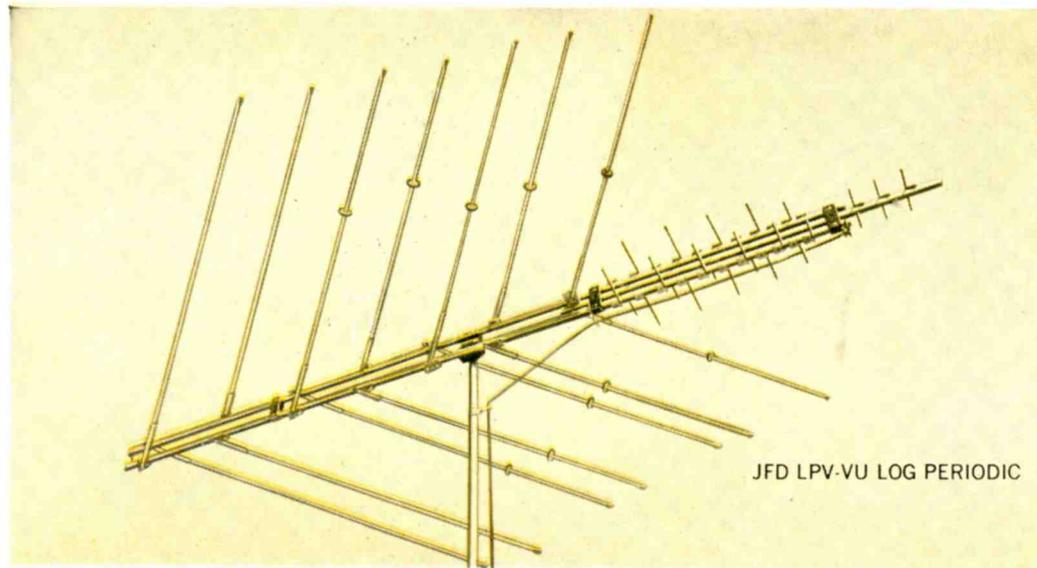


assault on

perfect



Back in 1962, we invented a new kind of TV antenna.



JFD LPV-VU LOG PERIODIC

Licensed under one or more of U.S. patents 2,958,081; 2,985,879; 3,011,168; 3,108,280; 3,150,376; 3,210,767, RE. 25,740 and additional patents pending in U.S.A. and Canada. Produced by JFD Electronics Co. under exclusive license from the University of Illinois Foundation.

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tion: PERFECTION CONQUERED

We did not improve on an old antenna. We started from scratch to design a new one. Really new.

It wasn't easy. And it wasn't cheap. But it worked like mad.

We called it the LPV Log Periodic. Its performance caught our competitors with their charts down. But it wasn't long before they came up with LPV copies in every way—except in performance.

Meanwhile back at the JFD labs in Champaign, Illinois, our scientists and engineers continued their "assault on perfection." In 1963, they again shattered antenna precedent by coming up with the first combination VHF/UHF/FM log periodic antenna, the LPV-VU. Instead of three different antennas, installers now needed only *one* LPV-VU and *one* downlead.

Our competitors scoffed at the idea. They said it couldn't be done. Until the "eyepopping" results started to roll in. Then there was a mad scramble for the LPV-VU bandwagon.

These "me-too" antennas looked like the LPV-VU Log Periodic. Sounded like it, too. But their charms were skin-deep.

Only the JFD LPV-VU delivered deluxe 82-channel log periodic performance. Because only the JFD LPV-VU followed the genuine patented log periodic concept of the University of Illinois Antenna Research Laboratories. Thanks to the protection of eleven different LPV-VU U.S. patents issued and pending—more than those of any other antenna.

You would think by now our Research and Development people in Champaign would leave well enough alone. But no. These "Young Turks" have gone and done it again. This time it's a new all-band log periodic design—the LPV-CL Color Laser. (Must be that "assault on perfection" bug they've still got up their polinear recorder.)

Why did we call it the Color Laser?

Well, engineers tell us that laser light beams with their tremendous bandwidth capacity are the communications carrier of the future. And we believe that our new VHF/UHF/FM Color Laser with its extreme bandwidth, among other unique characteristics, is the antenna of the future—only it's available to you now. How does the Color Laser deliver unsurpassed natural color, black and white across 82 channels, and FM, too?

Three reasons: (1) *Patented *VHF "cap-electronic" Log Periodic V Design*, (2) *a new*

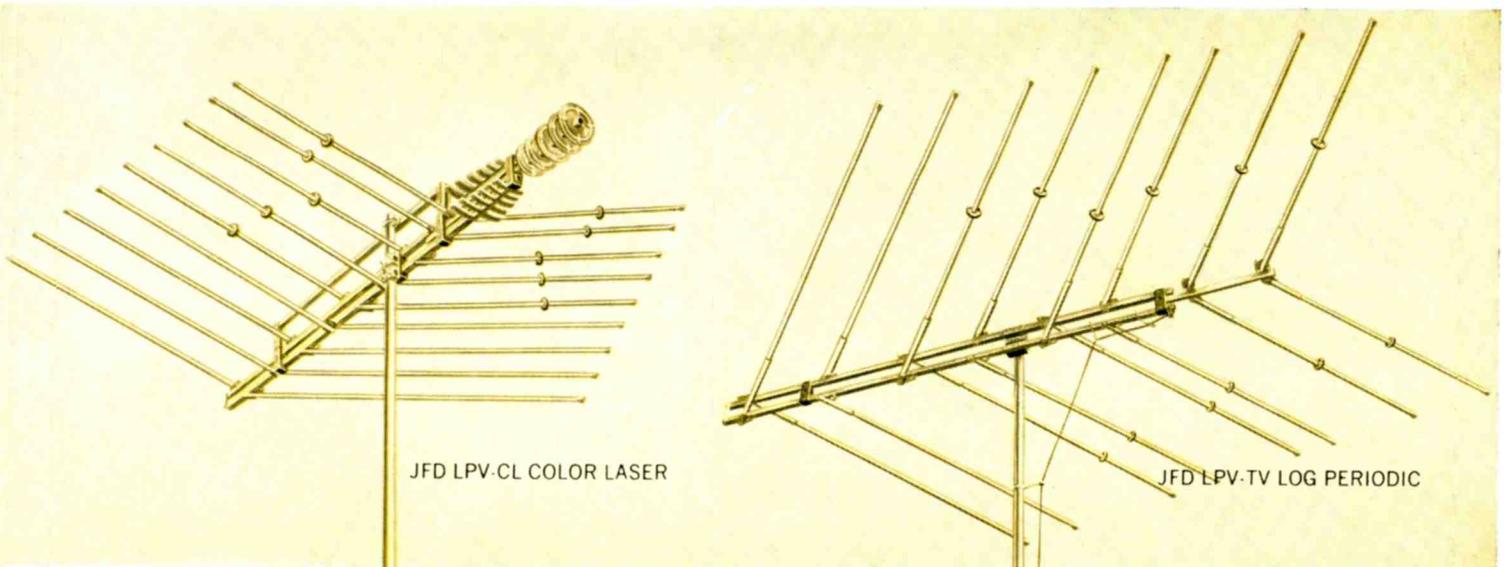
broad band UHF "zoned" trapezoid driver, (3) *a new disc-on-rod UHF director system*. And there are patents issued and pending on all three.

We've also spun off the LPV "cap-electronic" Log Periodic section of the Color Laser. It forms the heart of a great new VHF antenna series we've named the LPV-TV.

This "assault on perfection" of ours involved a complete new mechanical design, as well. Results: "fast-lok" element brackets, "hot" twin booms (no lossy harnesses or transformers), new super-strength double U-bolt profiles, high reliability cylindrical capacitors, plus our electrically conductive gold alodized aluminum.

If you're the breed of professional contract installer or self-servicing appliance dealer who *never* settles for less than the best, we have a suggestion. Use a JFD LPV-CL Color Laser or LPV-TV Color Log Periodic on your next installation. See what it feels like to install the *best* of all in performance and customer satisfaction.

You will also see why our research and development people have now changed their watchword from "assault on perfection" to "perfection conquered".



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LETTERS

In your November ESD you asked why there should be a different charge for Color call and a B/W. I would suggest just a thought, that there might be some justification on the grounds that the extra controls and functions peculiar to Color TV will cause the repairman to spend a few more minutes on each color call. I am sure that we do not use up all the time allowed for a call on some units but in the long run, color will take more time to make sure everything is work-

ing and there will not be a need for a call back. Also, I feel it is fair to charge a customer additional for color on the basis of the cost of color equipment, technology and the hours it has taken to be able to service color. The additional charge for a color call helps to reduce the investment and set up funds for future equipment purchases necessary to do the job right.
Darrell Petzwal
Petzwal's, Sacramento, Calif.

TUNER REPAIRS



\$9.50

FOR COMPLETE OVERHAUL

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ALL labor on ALL makes

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FULL YEAR WARRANTY**

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⊕ 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.

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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.



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TUNER SERVICE DIVISION

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or use this address

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AM-FM RADIOS... AUDIO TAPE... BROADCAST EQUIPMENT

Ed.'s Note

We have received a number of letters along a similar vein and we must agree that this is a valid point. The question was posed by a service dealer in Fresno and we did not have a good answer at that time.

We give up . . . a buck or two more per call seems to be in order.

Dear Don;

Just a note to thank you for appearing in San Diego last month and reviewing the service pricing around the State and Nation. I feel this is the type of information the dealer wants to know about and is a real service to the industry.

Ed Fort, Jr.
Mobile TV, San Diego

Dear Mr. Martin:

Serviceability article in Dec. ESD. My first sympathy was with the dis-senter—fix it and charge the customer extra if the TV is hard to service. After all, a Model "T" Ford was easy to service—now you have to spend an hour just to change spark plugs on some models, and the mechanic doesn't absorb the extra labor. As a customer, you wouldn't expect him to, but in electronics, too many technicians are enthusiasts rather than businessmen.

However, it's different if you also sell TV. I sold a color TV to a good customer last May. I have averaged a service call on it every three weeks since. At present I am waiting for a new picture tube for it. The first replacement picture tube took 2½ months to arrive—this time I raised H—with the manufacturer and I am supposed to receive it next week. I am having similar trouble with a music system I installed.

I didn't design or make the equipment but I'm the one who receives the complaints. As an honest Joe, I guarantee everything I see and feel that I'm working for nothing sometimes.

Best wishes,
Faithful Reader

Dear Don:

Just a note to say thanks for everything you have done in behalf of the service industry. Over the years you have been a real crusader for the independent service dealer and the last series of articles on pricing has done more in a few months than the entire industry has ever been able to do. This will be a much better year and for the first time the dealer will be able to make a few dollars instead of working as a hobby. A great job . . . and keep up the good work in the years to come.

ELECTRONIC SERVICE DEALER

electronic service dealer

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FEATURES

- 13 THE IN'S AND OUTS OF GETTING A LOAN FROM SBA, by Ralph Butz
A special ESD Feature that tells how many service dealers are applying for and receiving loans from the Small Business Administration.
- 18 CONSUMER "FACT SHEET" DEVELOPED TO EXPLAIN CALL AND WARRANTY CHARGES
A new form that was developed to be given to service customers explaining policy regarding service calls and warranty problems.

DEPARTMENTS

- 4 LETTERS
- 6 EDITORIALS
House Calls Rates Going Up
- 8 PRESIDENT'S MESSAGE
- 11 CSEA NEWS WIRE
- 15 NEW PRODUCT NEWS
- 17 TRADE TALK

electronic service dealer EDITORIAL



DON MARTIN

House Call Rates Going Up

It looks as if our editorial on service call rates has been effective in California and other parts of the nation. Needless to say, we are proud of this accomplishment but must give credit to a number of things.

First of all, the timing on the subject was perfect. Dealers have been talking about the rates charged by other trades and professions for years, but no one took the bull by the horn and made a concentrated attempt at reaching a fair market value for the repair of home entertainment products.

What made this timing right? Color was a major factor. Sales boomed last fall and continued throughout 1966 with total sales predicted at around 4.7 million sets for the year. Already, manufacturers are predicting 1967 sales at around double this figure, so the situation is not going to hold its own or decrease but will move ahead to even greater volume.

The California Registration Law certainly played a part. The Board of Equalization had over 20,000 names of firms and individuals with resale licenses to repair electronic products but, after the first mailing asking for a \$35 fee to be registered, this dropped to around 6700 actual firms engaged in the business. The very existence of a government agency for the home entertainment electronic industry, forced a clean sweep of the part timers that plagued the industry for so long.

CSEA was a factor, although many may question this statement. Let's take a look at what this organization was able to accomplish. Even before the BERDR they were able to clean up the bait advertising in the yellow pages. This was accomplished through an appeal to the Public Utilities Commission and a new tariff was passed. The same reasoning carried over to the BERDR and this type of advertising is almost gone and in newspaper advertising as well.

These three major factors combined to make the timing right for a re-evaluation of the service charges. The industry in California was free from the part timers, free from the bait advertisers and major offenders and over their heads in consumer demand for their services.

This is a country of supply and demand. Prices are governed by how many and what the demand for the product or service happens to be. Today, dealers are doing twice the work they were asked to do just six years ago. The industry cries out for more technicians. The tube checker has left the vocabulary of the general dealer gripe. License law seems to be tabu since any form of technical restriction, because of knowledge, could mean a serious threat to repairing any type of electronic product.

The timing was right!

Now, second . . . California is and has always been two steps ahead of the rest of the nation. Its people have always been receptive to new things and new ideas. They seem to have more money and spend it right. They do demand full value for their dollar and only ask for top service for top dollar. This has been proven time and time again but a little closer to home is the general reaction to price increases by service firms in the last few months . . . there has been none!

Third . . . there had to be a moving force. There had to be someone interested enough to do the job of finding out just what was going on and relating it to us for general reporting . . . For this we must thank Miles Sterling in Orange County. He did the job at the dealer level to give us the wedge to have something to write about in regards to price trends.

Now let's look at the picture. Timing, including Color, BERDR and CSEA; The right place . . . California and a means to acquire and transmit information of a news value . . . Electronic Service Magazine.

To sum it up . . . the technical advance of color and the coming solid state circuits has had a fantastic effect on weeding out the part timers and tube pullers. The BERDR, through its investigation and regulations, has made the industry un-attractive to the fast buck guys. CSEA has been a driving force in the reaction of the BERDR and was the leader in starting the ball rolling through its attack on the yellow pages. Because of these reasons . . . there are less men, about half, doing the same amount of work that was done six years ago. I have made the demand for service double and placed the dealer in a position of actually turning down work because of a lack of help.

Because of the great demand for service . . . there is a reason for placing the cost on labor rather than hiding behind parts. People understand that they can not fix, or attempt to fix, their \$500 color set. For the first time, they will pay a realistic price for service.

If the service industry is ever going to be able to keep up with the demand, they will have to attract technicians and the only attraction is spelled M-o-n-e-y. the \$5 per hour bench man is either here now or coming fast. The only way you are going to be able to remain in business is to compete for his services by offering top dollar. The only way you can pay top dollar is to charge for it. Remember, the service companies now have an obligation to fulfill and will be out after the technicians with money offers. If you are ever going to be able to compete it must be by meeting them dollar for dollar . . . and I might say . . . if you can't . . . there will be no independent service dealers in the years to come.

First UHF/VHF/FM 2-83 antenna that really works in fringe areas

New Winegard Chroma-Tel CT-100



NEW! Model CT-100 \$52.50

Winegard's sensational new CT-100 Chroma-Tel has 29 elements in all. And they're all working to provide the finest all-band reception (UHF-VHF-FM) even in difficult fringe areas.

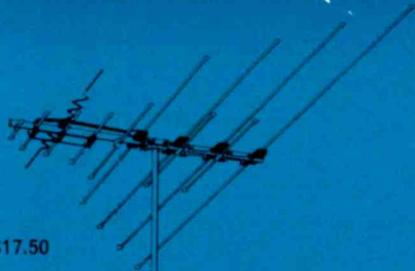
In addition to those 29 elements, the CT-100 incorporates a unique matching network that guarantees maximum signal transfer to the downlead—and on all channels 2-83 plus FM. Gives sharpest color and black & white reception.

And like all Chroma-Tels, it has Winegard's exclusive Chroma-Lens Director System (intermixes both VHF and UHF directors on the same linear plane without sacrificing

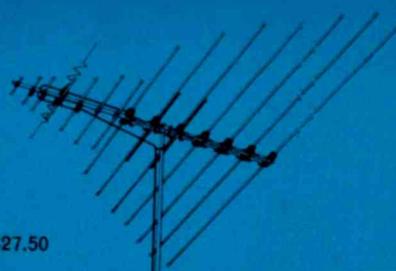
performance) . . . and our Impedance Correlators (special phasing wires that automatically increase the impedance of Chroma-Tel's elements to 300 ohms).

That's Winegard's new CT-100 Chroma-Tel. Bigger and better. But not too big. The full-line of Winegard Chroma-Tels still offers half the bulk; half the wind loading; half the truck space; and half the weight of all other all-band antennas—and at much lower prices. No wonder Winegard Chroma-Tels (now 4 models) are the hottest performing, hottest selling all-band antennas on the market! Better call your Winegard distributor or write for Chroma-Tel Fact Finder 242.

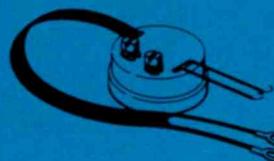
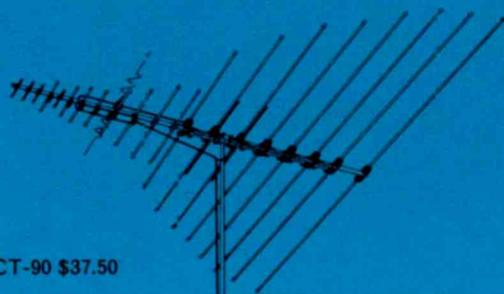
Model CT-40 \$17.50



Model CT-80 \$27.50



Model CT-90 \$37.50



FREE!

Every Winegard Chroma-Tel, including the new CT-100, comes complete with free CS-283 UHF-VHF Signal Splitter. Hangs behind set and separates UHF and VHF signals coming from antenna to the two pairs of set terminals.

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PRESIDENT'S MESSAGE

By ED FORT

I suspect that almost everyone who has ever become involved in association activities has, at one time or another, been enveloped with a feeling of utter frustration and bewilderment—bewildered by the fact that apparently intelligent people are somehow unable to comprehend what is right before their eyes, and frustrated at one's own inability to communicate with these same people in a manner that will give them understanding.

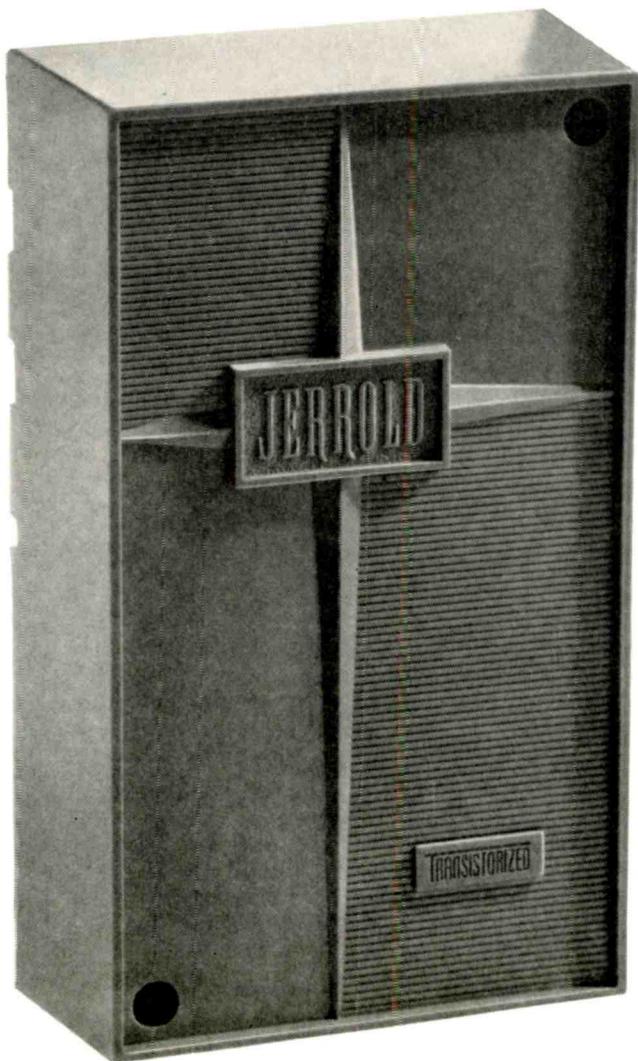
All one need do is to look around him at every successful group and he will find one common denominator—organization. Organization is the key to every successful operation. Look at big business. Suppose, in a large corporation, every department head went his own individual way—how long do you think it would be before that corporation would be devoured by one that was efficiently organized? Take a good look at the labor unions—where would they be without organization? What about the professions—doctors, lawyers, architects, etc.? Without organization do you think for one minute that they would still enjoy the reputation and benefits to which they are now privileged? The answers are obvious to any one who takes the time to think about it. That is what produces this feeling of frustration. The answer is so obvious; yet we are unable to get this point across to the many so-called businessmen in this industry.

Our very existence as an industry of independent service organizations is, at this moment, being threatened from many sides—manufacturers extending warranties and operating service facilities, Cable and Pay TV threatening a possible monopolization of sales and service. These groups are well organized and well financed; but they are not invincible. As an industry we have the necessary strength of numbers. Our power can be felt in the political arena and it can be felt in the manufacturers' pocket books. But this can only be accomplished if there is organization and teamwork. I have heard many people, both inside and outside our industry, describe us as being "individualists;" and

this supposedly explains why there is a resistance to any kind of organization. I have been in this industry for many years and have met a great many of these so-called "individualists" and the conclusion I have reached is this: this refusal to organize is due, basically, to two things—a lack of confidence, and an even greater lack of pride. As to the former: in spite of the lip service they devote to the importance of the television serviceman, they themselves do not really believe it. They do not believe that their efforts have any chance of success and for this reason they are reluctant to try. As for lack of pride: an amazing number of "individualists," who are working fifty hours plus a week and drawing, perhaps, \$8,000 to \$10,000 a year, will tell you that they are doing fine and that they do not need any help. If this is something to be proud of, I will eat my new Christmas hat. These two attitudes really go hand-in-hand. If they had pride in what they were doing, this would give them the confidence to realize that they do have the capabilities of shaping their futures. Those of us who are in this industry now have an opportunity not afforded to many. We have the opportunity of taking an infant industry and molding it into any likeness we desire. It can be molded into a professional form such as that achieved by architects, accountants, lawyers, etc.; or we can remain as we are—a bunch of mechanics. The choice is ours—yours and mine. I am doing something about it—how about you? The opportunity is there and so is the capability—but not for unorganized individuals. If our voice is to be heard, it must be through a concerted effort. These challenges must be met with a solid front—not with a bunch of disorganized "individualists" balefully wailing and bemoaning their fate. Make your voice heard in the only manner available to you—organization. Join and become active in your local association. Be a part of an organization that is helping to shape your future. This is the beginning of a New Year. It could be the start of a great deal more. It is up to you.

Going to profit here?

Then profit here.



82 Channel TAC4
List Price \$72.50

VHF Only Model TC-88
List Price \$39.95

New Jerrold 82 Channel Coloraxial Home System makes perfect sales mate with Color TV Antennas

Look around you. Every home—every new housing development—is a potential profit-making sales spot for you and the TAC-4 Home Master TV System. Here's why:

TAC-4 makes good color TV go a long way. Every color TV set needs a top-grade antenna for good reception. TAC-4 makes this good reception possible anywhere in the house by providing extension antenna outputs in various rooms for portable TV and FM sets as well as extra sets. *You can tie-in a TAC-4 with every antenna sale.* And don't forget, it's a handy sales feature that housing developers like to use to help sell a home.

TAC-4 handles all 82 TV channels (color and black and white) as well as FM. It's the industry's *first* amplified coupler that can handle all present and future channels. Just connect the antenna to the input

and then connect four or more sets to the outputs.

TAC-4 is easy to install. Coaxial inputs and outputs make connections simple. Coaxial cable can be run right along with other electric wires—without interference with the signal. And coil backs are practically unheard of because the amplifier is completely solid-state.

TAC-4 pleases customers. It's the first truly professional installation for assuring better TV and FM reception anywhere in the house. It's the superior amplifier-coupler to sell with any TV set or antenna such as the Jerrold Pathfinder series. Sell them together. Customers get top reception. You get top profits.

For more details, see your distributor.

JERROLD

DISTRIBUTOR SALES DIVISION
401 Walnut St., Phila., Pa. 19105

**When it comes
to color-TV
receiving tubes**



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are always
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WITH CONSEQUENT IMPROVEMENTS
IN **GAIN** AND **g_m** PERMITTED
BY NEW PLATE STRUCTURE
INCORPORATED IN EACH FAMILY.
'KT6 FAMILY ALSO HAS AN
EXCELLENT SEMIREMOTE-CUTOFF
CHARACTERISTIC FOR BETTER
AGC CONTROL.



Features:



3JC6A, 4JC6A AND 6JC6A SHARP-CUTOFF PENTODES
(9-PIN MINIATURES UNILATERALLY
INTERCHANGEABLE WITH 'JC6 FAMILY)

- * $P_b = 3.1$ W
- * $P_{g2} = 0.7$ W
- * $g_m = 16,000 \mu\text{mho}$
- * INTERNAL SHIELD

3KT6, 4KT6 AND 6KT6 SEMIREMOTE-CUTOFF
PENTODES (9-PIN MINIATURES)

- * $P_b = 3.1$ W
- * $g_m = 18,000 \mu\text{mho}$
- * INTERNAL SHIELD
- * SEPARATE BASE-PIN TERMINAL FOR G_3 —
PERMITS USE OF UNBYPASSED CATHODE RESISTOR
- * TWO BASE-PIN TERMINALS FOR CATHODE
TO REDUCE CATHODE LEAD INDUCTANCE

This is what you can expect from RCA Engineers They are
always on the alert for new ideas, new materials and new
methods to give the color-TV circuit engineer tubes that will
provide even better performance at the lowest possible cost.

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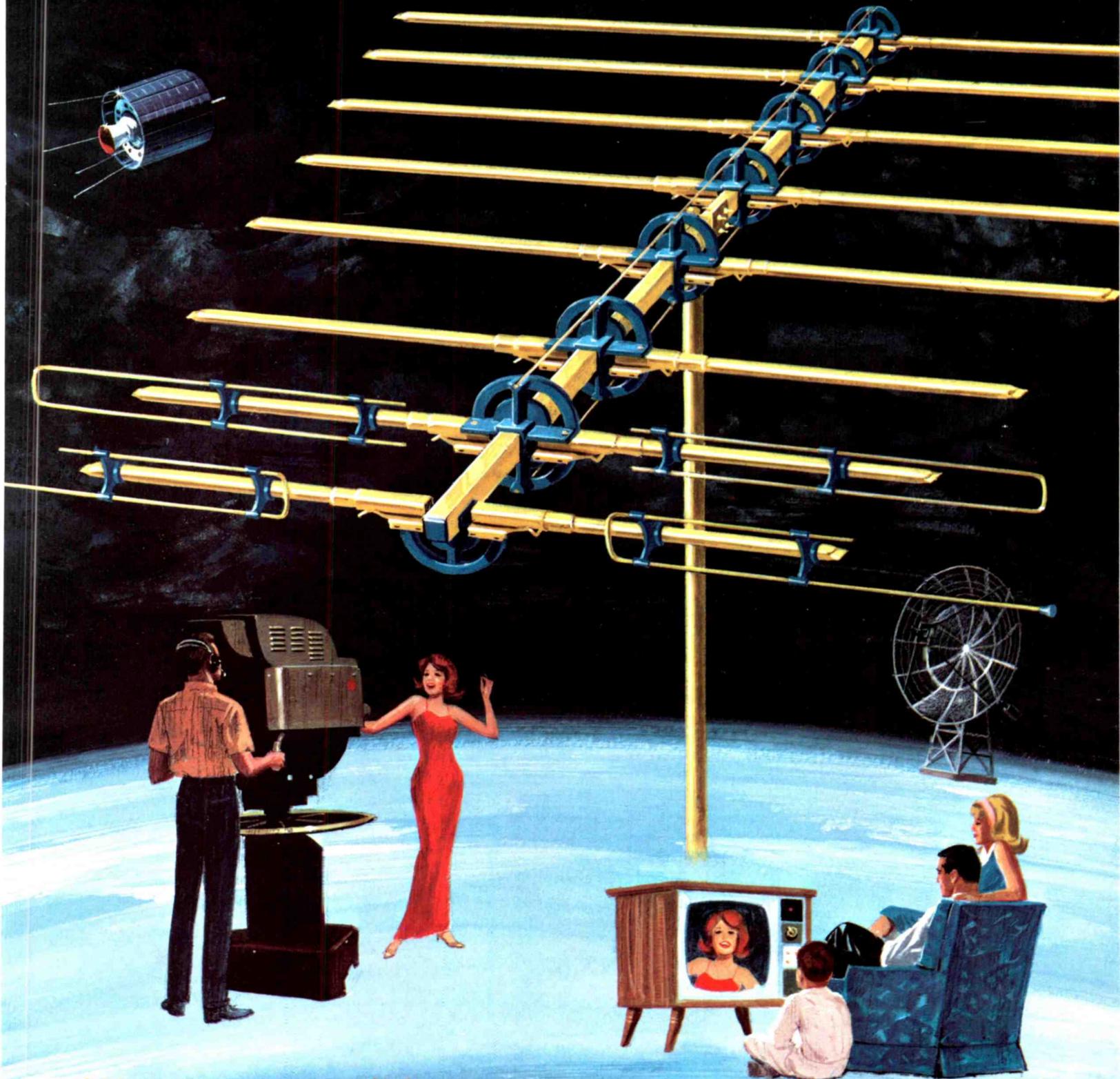
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JERROLD presents

PARALOG *Plus*™



Plus GAIN • Plus FLATNESS • Plus MATCH

THE NEW LOOK OF POWER!

JERROLD PARALOG Plus™

With the introduction of the original Paralog series, Jerrold set new standards for the TV industry, making the familiar yagi almost obsolete.

Now, we're proud to present another advance in the state of the art—the Paralog-Plus.

The Paralog-Plus is designed to improve color reception in three important ways:

1

PLUS GAIN—Color carriers are detected in phase. Therefore, more directivity is needed for good color reception than for black and white. The extra high gain of the Paralog-Plus provides sharp directivity, producing excellent color pictures.

2

PLUS FLATNESS—The color information occupies a 1.4 MHz bandwidth and requires phase detection. Thus, any tilt in the frequency response of the antenna can cause phase delays, resulting in incorrect colors on the TV screen.

Old fashioned yagis are tilted by as much as 6 to 8 db within a single channel. Technicians sometimes try to tilt the response of the color receiver to compensate for the antenna tilt, but it's almost impossible to make all colors true this way. Industry experts say that a flatness of ± 2 db per TV channel is required for good color reception. But the Paralog-Plus is flat within ± 1 db per channel.

3

PLUS MATCH—A poorly matched antenna, such as a conical, shifts the phase of incoming signals, distorting color. The excellent match of the Paralog-Plus prevents color distorting phase shifts.

Plus CHOICE OF 300 AND 75 OHM OUTPUTS

It's not enough to pick up a strong, clear signal. You have to deliver it to the set. 75 ohm Jerrold Coloraxial cable is a must for consistently excellent color pictures. All Paralog-Plus models (except the JPP-35) include both 300 and 75 ohm outputs, for match to either twinlead or coax.

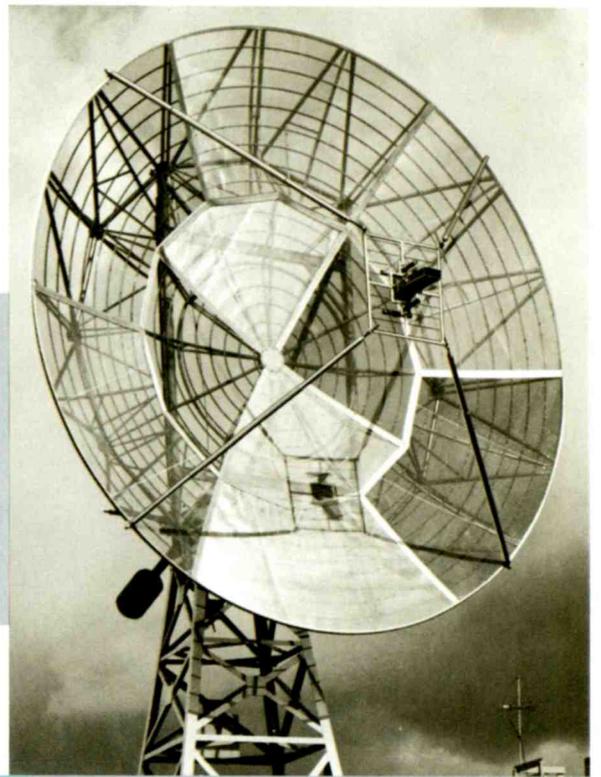
These benefits are the result of an innovation in the antenna field, the exclusive BI MODAL DIRECTOR system. BI MODAL directors enable Jerrold to achieve better antenna performance with a more compact parasitic array. Thus, all Paralog-Plus models are shorter, easier to install, and offer less wind loading than ordinary antennas providing comparable gain.

Plus FM

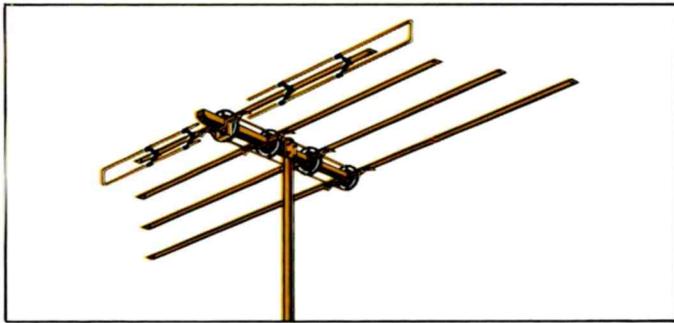
Like Color TV, FM stereo requires an especially strong, clean signal. Every Paralog-Plus model provides full, flat gain over the entire FM band.

PARALOG Plus™

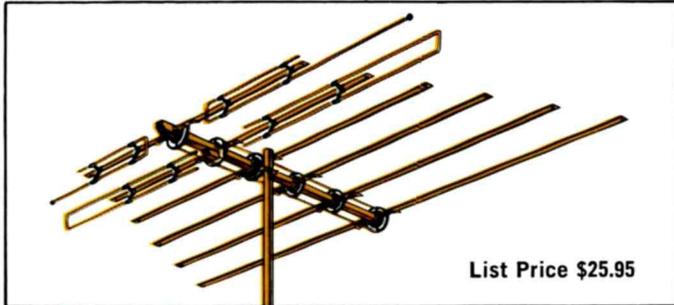
antennas were created by the same engineering and the same plant that produces America's greatest satellite tracking and telemetry antennas.



A COMPLETE LINE OF PARALOG *Plus*TM VHF TV-FM ANTENNAS

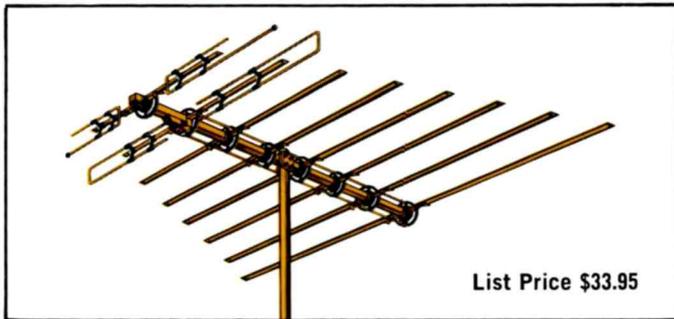


Model PIX-35 — 4 driven elements. **List Price \$17.95**
Model JPP-35 — 300 ohm version. **List Price \$15.95**



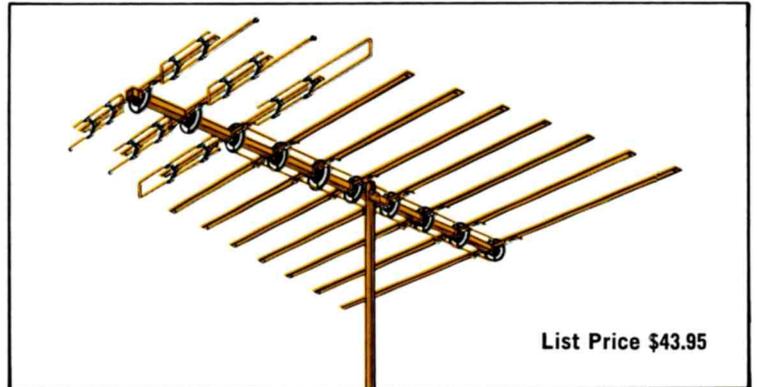
List Price \$25.95

Model PIX-45 — 5 driven elements and 1 parasitic element.



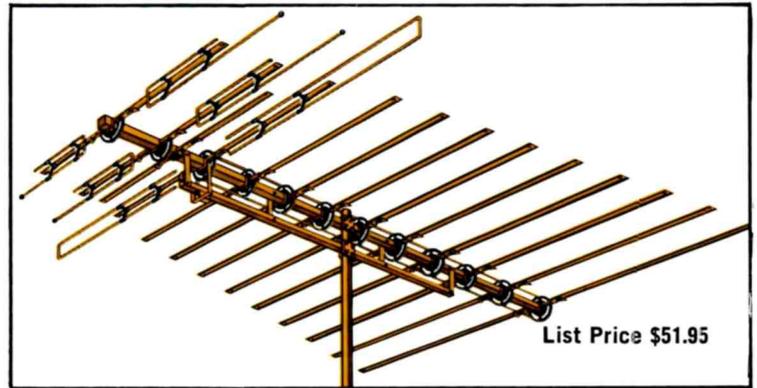
List Price \$33.95

Model PIX-75 — 7 driven elements and 1 parasitic element.



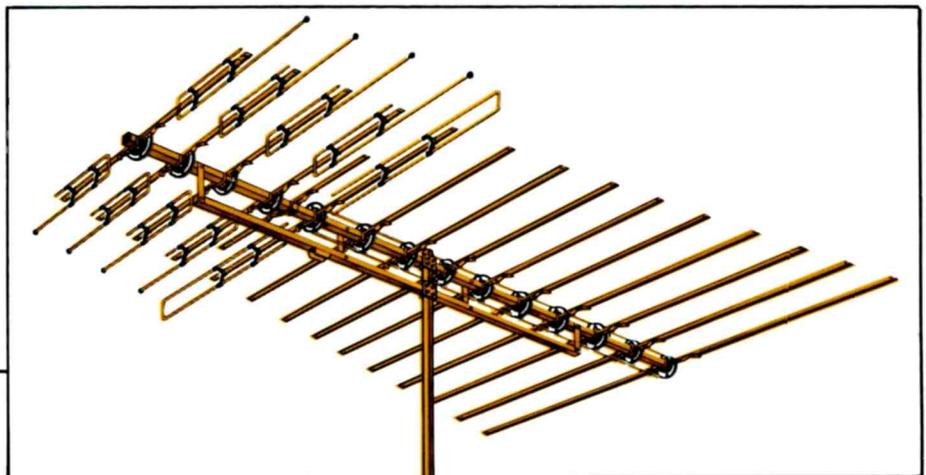
List Price \$43.95

Model PIX-105 — 8 driven elements and 2 parasitic elements.

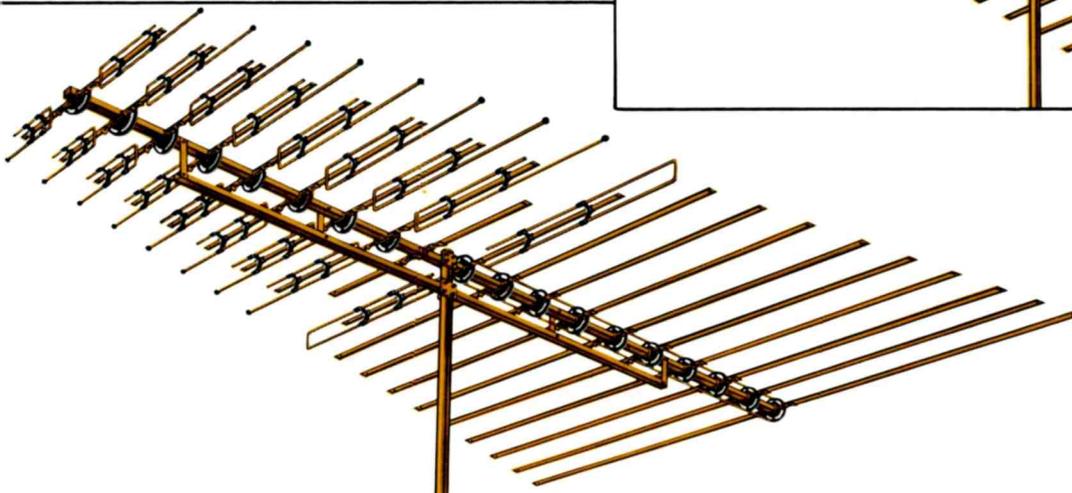


List Price \$51.95

Model PIX-135 — 10 driven elements and 3 parasitic elements.



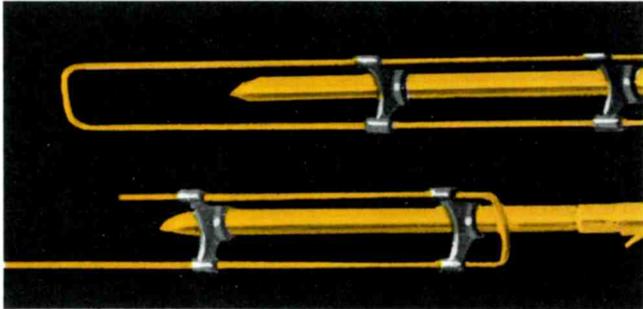
Model PIX-165 — 10 driven elements and 5 parasitic elements.
List Price \$61.95



Model PIX-225 — 10 driven elements and 9 parasitic elements.
List Price \$81.95

HOW THE PARALOG TM Plus WORKS

The unique feature of the Paralog-Plus is a BI MODAL DIRECTOR system (below).



The BI MODAL parasitic elements combine two high band directors into a single director covering all low-band channels, plus the entire FM band. These directors are resonated to overcome the natural tendency for fall-off in gain at 108 MHz and 216 MHz. Thus, the Paralog-Plus is exceptionally flat across the entire VHF television and FM bands.

Further, the distance between parasitic elements is varied. Because of this, signal velocity is highest at the front of the antenna. At the point of coupling, signal velocity approaches that of free space, thus improving match and coupling.

The Paralog-Plus driven elements work in two modes simultaneously:

- (1) 1/2 wavelength for low band channels.
- (2) 3/2 wavelength for high band channels.

Thus, each element in the Paralog-Plus serves double duty. When ordinary periodic type antennas are operated in the 3/2 wavelength mode through a frequency spread approaching a full octave, dual phase problems develop.

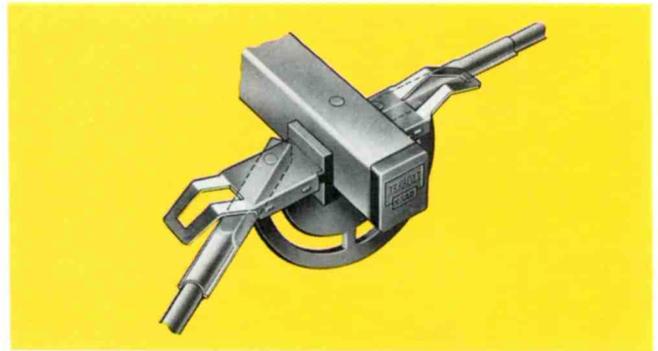
Some manufacturers minimize this problem by vee-ing the elements. However, vee-ing introduces another problem—deterioration of low band response.

Other manufacturers resort to correction stubs, which are bulky and expensive.

The Jerrold Paralog-Plus is designed without vee-ing or stubs. The secret? A capacitively loaded element varies the taper at the point of entry to the driven section so that high band frequencies see a longer element than low band frequencies. This permits enough tapering to afford excellent matching of low band channels while eliminating dual phase problems. Thus, the Paralog-Plus can use the natural third resonance patterns of the periodic antenna.

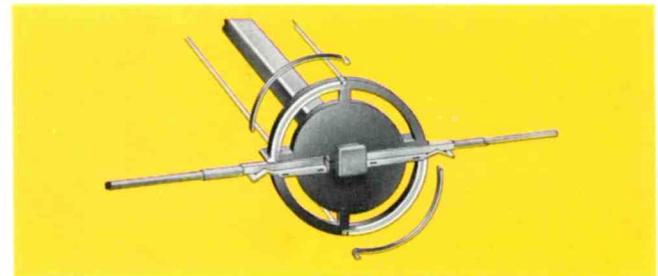
In the Paralog-Plus, more of the elements work to bring in any given channel. The result is an "ungimmicked" antenna that is unusually compact. An antenna that returns to the basic periodic principle and gives it a new direction. Test the Paralog-Plus against any antennas comparable in size and price. You'll be surprised at the difference.

Plus THESE QUALITY MECHANICAL FEATURES



SELF-CLEANING—WEDGE-SNAP LOCKS— ELIMINATE DIPOLE JUNCTION NOISE

The Wedge-Snap lock actually tightens and improves with vibration! Made with a spring-steel-like aluminum alloy (5052H34) for permanence, the joint is in the shape of a clamp. The dipole end is squared off, and the clamp has a wedge-shaped aperture to fit over this square when the dipole is fanned out. The spring pressure of the clamp jams the wedge aperture over the squared dipole end. Since it cannot seat all the way down, a sharp pressure is maintained on the edges of the dipole. Vibration merely tightens the pressure, jamming the wedge into the dipole so that it is both self-cleaning and self-tightening. Vibration—the very difficulty which damaged previous designs—is actually used to maintain, clean and preserve the positive connections of the dipoles.



CYCOLAC INSULATORS

Tough enough to be used for timber splitting wedges and golf club heads. Eliminates cumbersome cross feed points. Makes each insulating mount a strong point. And 4 inch separation of feed lines eliminates shorting due to icing or salt build-up.

GOLDEN ARMOR COATING

A superior corrosion resistant finish.

DUAL SQUARE BOOM CONSTRUCTION

For extra ruggedness (on Models 135, 165 and 225).

ENTIRE ANTENNA ARRAY GOES UP IN ONE PIECE

No time wasted attaching dangling braces.

MOUNTING BRACKETS POSITIONED FOR PERFECT BALANCE

Since the array is in equilibrium, there is less strain on the mount—more resistance to wind damage.

GROUNDING TRANSMISSION LINES

Prevent build-up of static electricity (in all Models except JPP-35).

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CSEA NEWS WIRE

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

Not much business but a lot of social activities high lighted December for most CSEA chapters. Pasadena and the Glendale Burbank chapters both reported outstanding social evenings with others still to be heard from.

ESD ESD ESD

There is no doubt about it in anyone's mind, the social highlight of the Zone B Council of CSEA for the year had to be the Bay Cruise Dinner Dance on November 19th. One hundred and sixty seven dealers and their wives danced to the music of Ray Hackett's band on the double deck Harbor Queen while crossing the bay to Alameda. Upon arriving at the Galleon Restaurant a delicious dinner was served, then everyone adjourned to the circular bar room for more dancing. The boat was boarded again at 11:30 p.m. with dancing all the way home. Larry and Dorothy Schmitt, who had arranged the trip, reported the weather kept many from attending, however those that did attend said the storm only added to the excitement of the evening. The rain had stopped before the return trip and many enjoyed the beautiful San Francisco skyline from the open deck. The trip was so successful that another is being arranged for next September.

ESD ESD ESD

Publisher Don Martin was the guest speaker last month at the regular meeting of the Pasadena Chapter of CSEA. Ben Leff, President of the chapter, introduced Don to the members and he went over many of the things that are happening in our Industry. Not only did he go over the pricing program but answered questions on the Educational TV program controversy and other questions of general interest to the members. They also announced that their Holiday party would be held at the Tikis Restaurant on December 17th with three bands providing the music and complete a Polynesian show highlighting the entertainment.

ESD ESD ESD

The Board of Directors, meeting in November in San Francisco, have set up a special committee to investigate the possibility of better quality control by manufacturers. The committee, headed by Virgil Gaither in Los Angeles, will attempt to accumulate as much information as possible and report back to the board next month.

ESD ESD ESD

The educational TV program was also a matter of discussion at the last board meeting with the group voicing opposition to any further viewing of the controversial film. In the meantime, official word has been received that the program had been taken off the air and would not be used in the future. Titled "Your Money's Worth" it proved to be misleading and placed the service industry in a very bad light.

ESD ESD ESD

CSEA Chapter 13 in San Diego recently sponsored a program featuring ESD Publisher Don Martin. The main reason for the meeting was to learn what was going on throughout the state on pricing and to evaluate San Diego prices as compared to other areas. A snap tally showed that the average service call in San Diego was around \$5.75 and \$6.75 but a call on local service companies showed that their rates were up over \$10 for color. A representative of the BBB was also there and reviewed the history of the service industry from a top complaint getter to some 40 or 50 per year. The chapter is also planning a color course and will go completely through color adjustments and alignments featuring four major manufacturers' chassis.



Here are a few snapshots of the recent Zone "B" Boat Party held in San Francisco last month. We want to thank Larry Schmitt for sending them along and you can see that everyone had a great time.



Suddenly, everyone's a Watch Watcher!

And for a good reason. Service dealers found out we were right when we said Amphenol's Color Commander color bar generator would save them enough time for two or three extra service calls a day.

What's it all about? We're so sure we can save you as much as 18 minutes a call, we're including a \$10.95 Timex watch with every Color Commander purchased—just so you can prove it yourself.

And if the Color Commander doesn't save as much time as we say, return it within 10 days and keep the Timex watch with our compliments.

What makes us so sure? Amphenol's exclusive technique of color alignment which features a:

1. Single crossbar to immediately center the raster.
2. Single dot for fast, consistently accurate static convergence.
3. Three-bar color array to isolate your working bars—the 3rd, 6th and 9th.

Join the Watch Watchers

If you take advantage of this limited-time offer today, your Color Commander can be paying for itself in extra income tomorrow. For the name of your nearest Amphenol distributor, contact your nearest Amphenol Sales Division office or write Dan O'Connell, Head Watch Watcher, Amphenol, Box 134, Broadview, Illinois 60153.

Watch Watcher Offer

With every lightweight, compact, completely solid-state Amphenol Model 860 Color Commander we'll include a \$10.95 Timex for you to time your savings. If the Color Commander doesn't save you time, return it within 10 days and keep the watch with our compliments.

\$169.95*

Model 860AC \$20.00 higher*

*Suggested resale prices

 **AMPHENOL**

The Ins and Outs of Getting a Loan From SBA



by Ralph Butz



An ESD Special
Feature

Despite the tightening money market during the past year, the Small Business Administration has helped many small businesses to obtain needed funds. Bernard L. Boutin, SBA Administrator, reports that 43,678 loans totaling \$646 million were approved during the fiscal 1966.

The three types of loans available for small business are direct loans, guaranty loans and participation loans. Loans in the three categories have ranged from \$1,000 for direct loans to small business to \$400,000 for loans to local development companies. Direct loans are seldom made in excess of \$15,000.

A direct loan is one in which SBA advances all the funds, but direct loans are made only after the potential borrower has been unable to obtain needed financing from local lending institutions. Most of the funds available for direct loans are derived from repayments to the SBA revolving fund, averaging about \$17 million a month, and from sales of loan agreements to commercial banks.

SBA's present policy is to place emphasis on small loans, specifically loans of \$15,000 or less, to help small enterprises that previously had been turned down because local lending institutions were unwilling or unable to furnish the necessary long-term financing.

Owners of small businesses protested that loans from local banks are usually restricted to short-term loans, maturing in one year or less, claiming that such short-term loans would not be adequate assistance. Firms qualifying for SBA loans, they argued, were permitted to repay the amounts borrowed over a longer period.

How to Qualify

Before qualifying for a direct loan the applicant must have tried, without success, to obtain financing from banks or lending institutions at reasonable rates. If a bank will not make a loan by itself but is willing to do so if the SBA agree to participate, then a bank-SBA loan may be made.

In most cases of bank-SBA participation agreements the bank will assist the potential borrower with filing the loan application. If a bank will not assist, the applicant may visit the nearest field office of SBA, obtain the proper forms and discuss his needs with a financial specialist.

If a bank will not make a loan with SBA participation, the businessman may apply for a direct loan. Application for a direct loan must be accompanied by a letter from a bank, stating that the bank is unable to make the requested loan. A statement of inability to make a loan usually indicates that the bank is not willing to assume the risk. When a bank agrees with SBA to participate in making a loan, the bank will furnish not less than 25 percent of the amount and SBA will furnish the difference.

Average Loan is \$15,000

To the average small business direct loan is one that does not exceed \$15,000 and is to be repaid in installments over a period of 10 to 15 years. These loans are designed to meet the needs of the very small business. The character of the borrower is an important consideration for this type of loan because the applicant may have little to offer in the form of collateral or security. Loans as small as \$200 have been made in this category.

Under SBA's loan guaranty plan loans up to \$350,000 may be made because the government does not advance any portion of the funds. The loans are made by banks

(Continued Next Page)

In's and Out's of an SBA Loan

Continued

with SBA standing by with a guaranty of up to 90 percent of the amount of the loan.

When a bank decides that it can make a loan under the guaranty plan, the details are submitted to SBA for approval. If accepted by SBA, the bank has protection covering 90 percent of the loan. Most of the larger business loans made by banks during recent months under the guaranty plan have been made subject to SBA's guarantee in case of default by the borrower.

Under the Economic Opportunity Act the SBA has authority to make loans to businesses where such loans would help to reduce unemployment in areas where the percentage of unemployed persons is above normal.

SBA Administrator Boutin reports that 211 Economic Opportunity loans were approved in one month, creating jobs for many people who had been unemployed. Most of these were direct loans in amounts of \$15,000 or less.

Disaster loans are direct loans made to businessmen in sections designated as disaster areas by the White House or an authorized federal agency for any of a number of reasons, such as drought, flood, tornado, or other natural disaster. These are low-interest loans, 3% per annum, made to assist the disaster stricken.

A rural development loan may be made to a business in a rural area if it is found that such a loan would prevent unemployment or increase employment in the area. It may a direct participation or guaranteed loan.

Rural development loans are also available from the Area

Redevelopment Administration, which is interested in helping business expansion in rural areas, specifically those areas where the rate of unemployment is above normal.

Recently a bank-ARA participation loan was granted to a rural North Carolina processing plant, enabling the firm to double the number of its employees.

Despite the publicity about SBA, many business men are not aware of the many services available. The range of these services is constantly expanding, offering counsel on management and marketing problems to bring small business into a more competitive position.

Many businessmen have been helped by SBA's Office of Procurement and Technical Assistance. One function of this division is to help small business obtain a share of government procurement. A single small firm could not afford to have its own special procurement representative permanently located in Washington. It is in this area of representation where small business has reaped benefits from the Office of Procurement.

Refer to SCORE

Management problems that confront many small businesses can be referred to SCORE, the Service Corps of Retired Executives. More than 1,000 retired executives are available for help in solving small business problems.

Chief beneficiaries of the SCORE program are firms with a small number of employees. Among the several million small firms in the United States, many need help in such areas as merchandising, finance, sales, advertising, and general guidance.

At present SBA has about 3,200 employees working through 68 local offices from coast to coast. A small business in any locality is not far distant from source of information and assistance.

FAMOUS ZENITH QUALITY TUBES for greater reliability, longer life



TV Picture Tubes

A complete line of more than 200 top-quality tubes. For color, black-and-white, or special purposes.

Zenith black & white replacement picture tubes are made only from new parts and materials except for the glass envelope in some tubes which, prior to reuse, is inspected and tested to the same high standards as a new envelope. In Color tubes the screen, aperture mask assembly and envelope are inspected and tested to meet Zenith's high quality standards prior to reuse. All electron guns are new.

"Royal Crest" Circuit Tubes

A full line of more than 875 tubes . . . the same quality tubes as original Zenith equipment. Your assurance of the world's finest performance.

Order all genuine Zenith replacement parts and accessories from your Zenith distributor.



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OF ZENITH ORIGINAL PARTS

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PRODUCT NEWS

Conducted by **A. Diane Powell**, Associate Editor



CDE OFFERS COMPLETE LINE OF DC TO AC POWER SUPPLIES

Cornell-Dubilier Electronics *Powercon* Power Supplies provide the ultimate in economical and useful inverters to supply alternating current (AC) from a battery (DC). Each one of these complete line of Powercon Inverters delivers 115 volts AC at 60 cps.—the same as household power—and is ideal for operating many types of electronic entertainment equipment such as TV, Radio & Phonograph—as well as small power tools, appliances fluorescent and incandescent lights.

These are truly portable power supplies designed for mobile mounting. They can be used in trailers and boats or for camping.

All units are enclosed in a modern attractive metal cabinet. There is no AC shock hazard in handling the unit, and the exposed DC input terminals are limited to 12 volt operation, involving no shock risk. All controls are located on front panel printed on anodized aluminum. Cases are lowered for efficient convection cooling.

Powercons are available over a wide range of DC input voltages and output AC power ratings. Available in both square and sinewave output.

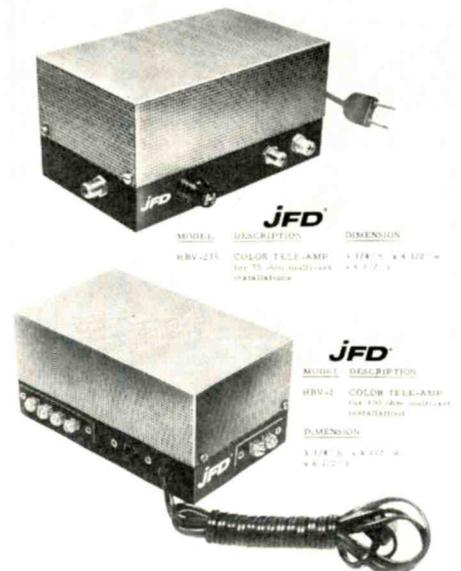
NEW MERCURY CATALOG AVAILABLE

Mercury Electronics Corporation announces that their new 1967 catalog has just come off the press. The new 16 page book illustrates Mercury's complete line of test equipment.

Technicians will find a wide choice of tube testers, solid-state color generators, VTVM, VOM, component substitutor, CRT tester-reactivator, in-circuit capacitor tester, signal generator . . .

in addition there are many wire-it-yourself kits featured.

The catalog will be available at parts distributor; or they can be requested without charge directly from Mercury Electronics Corp., 315 Roslyn Road, Mineola, New York.



NEW JFD COLOR TELEAMPS FOR 300 OHM OR 75 OHM MULTI-SET INSTALLATIONS

Two new amplifiers/splitters — the JFD Color Tele-Amps for VHF/FM — are announced by JFD Electronics Co. These models are especially designed for color reception. One (Model HBV-2) is for 300 ohm installations of up to 4 sets; the other (Model HBV-275) is for 75 ohm installations of up to 4 sets. Both can be added to existing antenna installations for gain of up to 7 db to each of 4 sets.

Both models feature etched copper circuit boards with poly-U sealant, fixing critical tuned circuits in place; and two frame-grid, low-noise tubes for VHF. Wideband response is preserved by inherent low interelectrode capacitance and high input impedance of 6HA5 tubes.

A unique 4-set splitter network completely isolate each output, preventing interaction between sets. Amplifier, power supply and signal-splitter circuits are integrated in one compact design. Two pairs of outputs facilitate attach-

ing and dressing of transmission lines to respective sets. Attractive gold housing on black base is perforated to keep components cool.



MUTUAL CONDUCTANCE TUBE CHECKER

An all-new true mutual conductance tube checker, the MUI40 Continental, has just been announced by SENCORE. Exceptionally compact and completely portable, the all-purpose Continental is designed for fast, extremely accurate, true mutual conductance tests. Said to be the only Gm tester using a 5kc square wave for tests, mutual conductance can be measured in actual micro-ohms, thus making it ideal for precise lab work, for use in broadcasting stations, and for incoming inspection, production line testing, and quality control in electronic manufacturing.

Featuring an exclusive automatic biasing system, the MUI40 Continental circuit actually biases the tube being checked for mutual conductance with the correct bias voltage at the current selected for the plate circuit. This eliminates a set-up control, and reduces possible errors in set-up and readings.

Checking all TV and radio tubes, including Novars, Compactrons, Nutvitors, Magnovals and foreign tubes, space is also provided for additional sockets to accommodate future tubes with different base arrangements. Protection against obsolescence is thus assured.

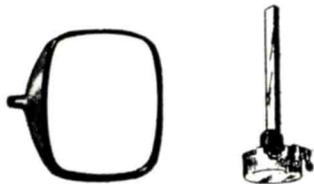
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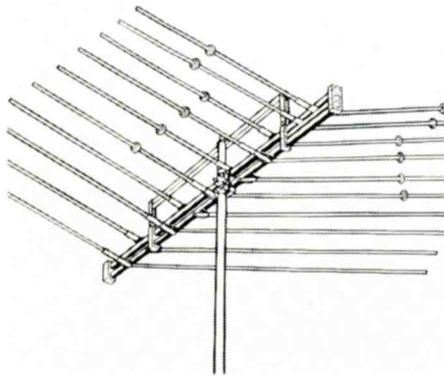
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VI 9-6014

NEW PRODUCTS

(Continued)



NEW VHF/FM LPV LOG PERIODIC TV ANTENNA BY JFD ELECTRONICS CO.

A new series of antennas—the JFD LPV/TV/FM Color Log Periodic series was announced today by the Antenna Research and Development Laboratories of JFD Electronics Co., at Champaign, Illinois.

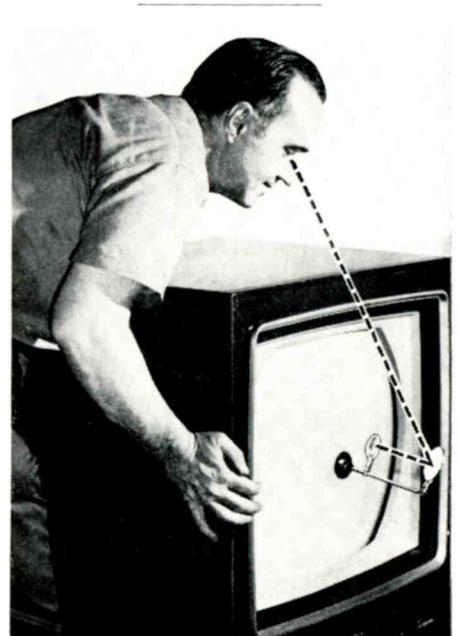
Four concepts are incorporated in the new LPV-TV series to provide improved VHF and FM reception. They are (1) JFD's famous patented log periodic design, (2) "cap-electronic" dipoles, (3) lower-impedance twin-boom feeder, and (4) integrated transformer design.

1. JFD's new improved log period design produces more uniform gain on both high and low bands, lower side-lobe levels and narrower beamwidths. This results in clearer pictures, greater reflection of ghosts and other interference, and stronger signal response than previous VHF log periodic antennas. Fidelity color reception is also assured by virtue of its flat response across each channel.

2. An outstanding characteristic of JFD's patented LPD-TV design is its system of capacitor-coupled "cap-electronic" dipoles. The capacitor-coupled elements respond on the third harmonic mode as well as the fundamental mode—for highest effective gain. This results in more elements optimally tuned to work on both low and high-band VHF channels for narrower beams and higher gains. "Cap-electronic" design eliminates "lazy" elements that are effective on only a limited number of channels and may detract from the overall performance on the others. These improvements are especially effective in color.

3. Low-impedance twin-boom feeder insures optimum impedance-match to dipoles for maximum signal transfer on all VHF channels.

4. Integrated transformer design improves impedance-match to the 300-ohm downlead. Combines the rigidity of twin and triple-boom construction with superior electrical performance of a step-up transmission-line transformer.



NEW DYNASCOPE SERVICE AID SPEEDS ADJUSTMENT ON COLOR TV SETS

Color TV sets can now be adjusted quickly and easily with Dynascope, a new service aid which permits the serviceman to observe an enlarged view of the TV screen while working on controls in the back of the set.

Introduced by the B&K Division, Dynascan Corp., Chicago, Dynascan consists of a 2 $\frac{1}{4}$ -inch-diameter mirror attached to one end of a 6-inch-long stainless steel rod and a suction cup at the other end. Mounted on the rod in the middle is a 1 $\frac{1}{2}$ -inch-diameter, three power magnifying lens.

To use Dynascope, the serviceman simply attaches the unit to the TV screen with the suction cup and adjusts the mirror and lens for the viewing from the back of the set. Then, while using controls for focusing static convergence, dynamic convergence and color purity, he looks over the top of the set to observe the changes on the screen. Eliminated is the wasted time and motion of having to constantly walk back and forth between the front screen and real controls.

Designed to fit easily in a tube caddy or other service case, Dynascope is furnished with a plastic carrying case. To simplify storage and prevent damage, the mirror folds down while the magnifying lens can be removed from the rod for insertion into a special protective pocket in the carrying case.

SEATTLE RADIO SUPPLY NAMED RCA DISTRIBUTOR

Seattle, Washington — Seattle Radio Supply, Inc. has just been named as a fullline RCA replacement distributor for the Northwest. The announcement was made by Parts Manager, Walt Spaulding who stated that the new RCA program will be a great aid in parts and inventory control and also give faster service to the dealer.

MOTOROLA ANNOUNCES NEW TRAINING PROGRAM

Chicago, Illinois—A nationwide program to support home electronic service companies and servicing retailers with a large contingent of "Technical Training Representatives has just been announced by Motorola.

Over 50 men will be strategically located across the nation to train Motorola dealers and service firms so they will be better equipped to provide customer service is our aim, stated Ed Griden, national service manager.

Full details are available from local Motorola distributors and all interested persons should contact these men as soon as possible.

ERICKSON SALES & CARELLI SALES TO REP. CRAFTSMAN

New York, New York — The Lou J. Erickson Sales Company of Los Angeles and the Carelli Sales Co. of Burlingame, California have been named as California Representatives for Craftsman Electronic Products, Inc.

The appointment was made early last month and these firms will handle the complete line of TV/FM products and components for Craftsman. The firm manufactures master TV products for home system as well as motels, apartments, schools, showrooms and other larger installations.

WENDELL WOODY JOINS THE DISTRIBUTOR SALES DIV. OF JERROLD ELECTRONICS

The Distributor Sales Division of Jerrold Electronics, Philadelphia, Pa., has named Wendell Woody as Assistant Manager of the Western Region,

according to Sanford Berlin, Distributor Sales Division Manager.

In this post, Woody works directly with Robert Snider, Western Regional Manager, with headquarters in Redwood City, California. The regional office markets Jerrold's home TV antennas, home TV-FM reception aids, master antenna systems and educational TV systems throughout 15 western states.



JACKSON CONDUCTING INTENSIVE TEST EQUIPMENT CLINICS ON WEST COAST

"Interest in our test instruments is exceeding our greatest expectations", noted Mr. Harry M. Rich, president of the Jackson Electrical Instrument.

Mr. Rich was on hand on one of his company's clinics being held at the Medford, Oregon branch of United Radio Supply Inc. He is shown (center left) accepting a large order from United Radio Supply manager, Wayne Arbaugh. United Radio Supply has distributed the Jackson line for over 10 years. Flanking Harry Rich and manager Arbaugh, are, from left to right: Ted Silva, of Ray Squibb Corp., Jackson's Seattle Representative—George Carr, United Radio Supply, Medford—Orlan Stone, Stone's TV, Medford—John Chitwood, Ralph's TV, Medford—Gordon Bashe, Ralph's TV—Vic HAY, Hay's tv, Eagle Point—Phil Henning, KMED-TV, Medford—Ellis Feinstein, Chief Engineer, KMED-TV — Bob Roark, United Radio Supply—Ralph Roark, United Radio Supply —Ralph Weiss, Ralph's TV.

Jackson is covering the west coast in a series of informative clinics conducted by Leonard Williams. Len has been with the company for over eleven years and knows the instruments thoroughly.

WHITTEN COMPLETES SPECIAL COLOR COURSE IN NO. CALIFORNIA

San Francisco, California — Frank Whitten, National Philco-Ford Electronics Training Specialist from Philadelphia has just completed a series of color television service meetings in San Francisco.

The series began November 29th and ran through December 1st with meetings in Palto Alto, Sacramento and San Francisco.

ASSOCIATED RADIO NEW RCA DISTRIBUTOR

San Francisco, California — Associated Radio Distributors with stores in San Francisco, San Mateo, Mountain View and Vallejo have been appointed as distributors of RCA receiving tubes, picture tubes, transistors, batteries and test equipment.

The appointment took effect on December 1st, according to Eric Ledin, V.P. for the local distributor. Following the announcement, Associated held a series of open houses at all of their branches and are planning a similar type open house in San Francisco some time this month.

PROGRAMMED COURSE OFFERED BY G.E. IN TRANSISTORS

Owensboro, Kentucky—The General Electric Company has just announced a program instruction course on Transistors & Circuit Troubleshooting that will be available through their distributors.

The new course, in three attractively bound volumes, is designed to instruct electronic service technicians in trouble shooting the transistorized stages in radios, stereos and the new TV receivers.

A recent review of the effectiveness of the course indicated a test score, prior to the course of 23.4% while a similar test given after the course had been taken indicates score of 96.8%.

CONSUMER "FACT SHEET" DEVELOPED TO EXPLAIN CALL AND WARRANTY CHARGES

Last month the CSEA Glendale Burbank Chapter developed and adopted a "fact sheet" on service calls and warranty policy to be used by the industry. Under the direction of Ralph Johonnot, this one page "explanation" is given to the customer when the call is made and they are asked to read it. The plan has been in operation about a month now and the results have been outstanding. All dealers using the "Fact Sheet" report customer interest and appreciation of having service calls and warranty problems explained to them in writing. The form is so successful that a special committee has been set up by the National Electronic Associations for its possible use nation-wide within the near future.

The Fact Sheet reads as follows:

ELECTRONIC REPAIRS YOUR WARRANTY ON MATERIAL AND LABOR THE SERVICE CALL

A service call entitles the customer up to one-half of time in the home. Any additional time is charged as overtime and will be billed to the nearest fifteen minute period at rates as specified by the dealer.

If the product can not be repaired in the home and must be removed from the premises for repairs, the customer is entitled to an estimate before completion of repairs. If such an estimate is higher than the customer wishes to spend, a diagnosis and handling charge as prescribed by the dealer, will be made.

If the product can not be repaired in the home and the customer does not wish the product removed from the premises for repairs, the servicing firm is entitled to collect for all time and material used in the diagnosis and attempted repair of the problem.

When the product is removed from the premises for repairs, the service call charge reverts to a diagnosis charge for time spent on an analysis of the problem. Removal and re-installation charges are dependent on the type of product involved and the labor rates as prescribed by the servicing firm.

PARTS WARRANTY

Replacement parts are warranted for a period of ninety days with the exception of picture tubes which carry a one year warranty. This is the same warranty the servicing firm receives from the manufacturer. If any material under warranty fails in the warranty period, it will be replaced without charge for the material — the customer will pay only for the labor involved.

WARRANTY OF LABOR ON THE SERVICE CALL

Upon completion of the repairs, make certain that the product is operating to the customer's satisfaction. If additional service is required after the technician has left the premise and has to be "re-called," an additional charge based on a time period as explained above, will be made. This is not another service call, but time that would have appeared on the original billing if he had remained longer on the original call.

WARRANTY OF LABOR ON SHOP REPAIRS

Upon delivery of repaired product, customer should check and make sure the results of the repairs are satisfactory. If additional service is required to correct such problems as poor reception caused by "ghosts" or a faulty antenna system, or an unreported problem which was not called to the attention of the servicing technician, an additional charge will be made as explained above.

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San Francisco, HE 1-0212

IN
Palo Alto: DA 3-3173
San Mateo: FI 5-3575
Vallejo: MI 3-4531

HURLEY ELECTRONICS

2101 N. Fairview, Santa Ana, 638-7220
IN

Inglewood: 679-2276
Ontario: YU 6-6538
San Bernardino: TU 5-0721
Long Beach: HE 6-8268
Oxnard: HU 3-0133
Oceanside: SA 2-7694

KIESUB CORP.

311 W. Pacific Coast Hwy.
Long Beach 591-1335 & SP 5-1428
IN

Anaheim: KI 7-3527 & 865-0688
Bakersfield: FA 7-5535
Oxnard: HU 3-9541
San Bernardino: TU 5-6807
Van Nuys: ST 1-3930

MILLER'S RADIO & TV SUPPLY

530 East 8th Street
Oakland, TE 4-9185
IN

San Jose: CY 5-6818
Santa Rosa: LI 2-5423
Walnut Creek: YE 4-3000

NORCAL ELECTRONICS

1115 "R" Street
Sacramento, 442-9041

WESTERN RADIO & TELEVISION SUPPLY CO.

1415 India St., San Diego
BE 9-0361

Poll shows dealers prefer Channel Master color antennas by tremendous margin. We're not surprised. Read why.

When it comes to color antennas, we know our place. That it happens to be **first** place—and that Channel Master has been up there a long time—is a sweet thing to know. (Just try and budge us.)

But—once in a while—isn't it nice to have somebody else confirm what you've always known?

What happened was this: One of the nation's top three publications in the radio-TV-appliance merchandising field—(name on request)—made an independent survey of color set appliance dealers. Result? The lopsided box-score, in case you haven't noticed,

is down below. Please observe that the opposition isn't even close.

Now as long as Channel Master Crossfires are up there we wanted to know why they're up there. So we requested the same publication to take a second poll. And just as we thought: Any specific brand of antenna may be preferred on many counts. But one reason leads all the rest. Performance! That's why the Crossfires are No. 1. They work better! (With color sets or black-and-white, naturally). This includes our VHF/FM series for suburbs-to-fringes, our Coloray ghost-killer series, and our

Ultradyned Crossfire 82-channel FM or Ultradyned UHF only series.

To what do we owe our success? Our principles. (Unique engineering ones, of course. All of them patented or with patents pending.) They make the Crossfires the mightiest antennas ever developed. With remarkably high gain and up to 30-to-1 front-to-back ratios. (Maybe the competition's principles just aren't as powerful as ours.)

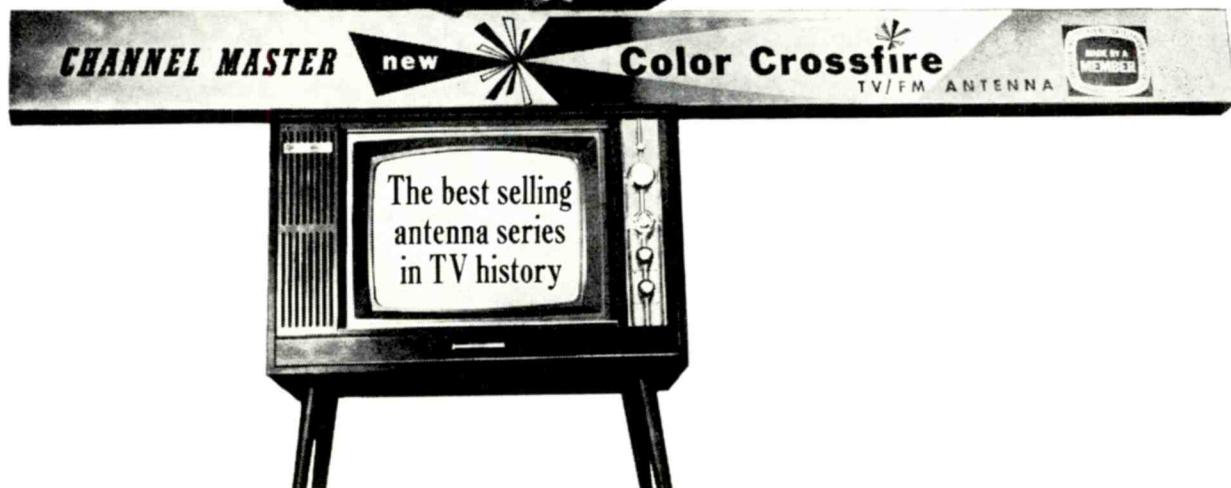
So call your nearest Channel Master distributor, join the rest of the gang, and come on up. The installation's fine and the profit's high.

High Man
On The
Totem Poll!



OF THE 5 TOP-SELLING
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3 to 1 over Brand **C**
3½ to 1 over Brand **D**
5½ to 1 over Brand **E**



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