

**electronic**

Vol. 6, No. 11

March, 1967

**service dealer**

the official publication of the california state electronics association

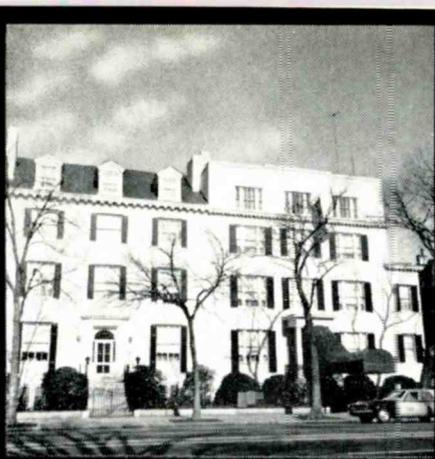
**THE BERDR . . . A HISTORY AND REVIEW**

**a new approach to 82-channel antennas**

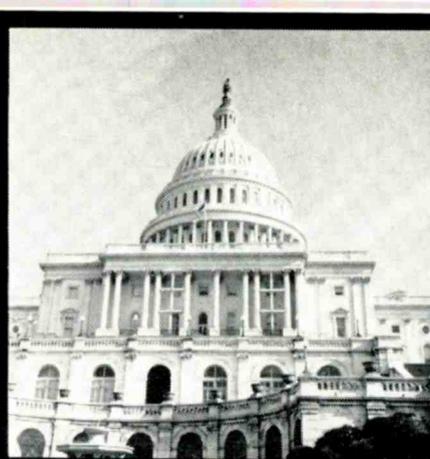
*WHAT PRICE COLOR? GUEST EDITORIAL*

*The Future Belongs To Those Who Prepare For It*

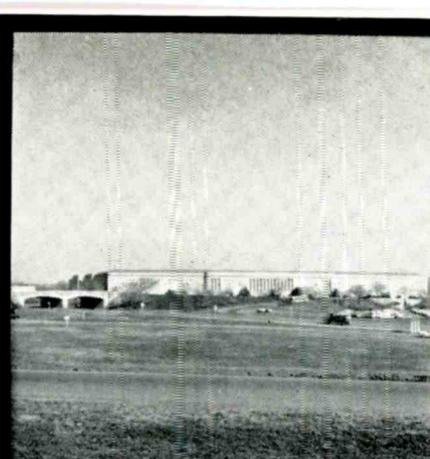
**nea / self certification exam**



1.



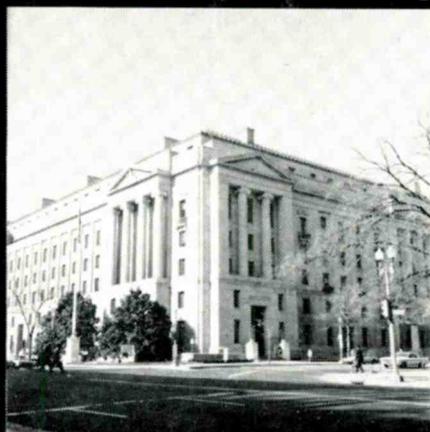
2.



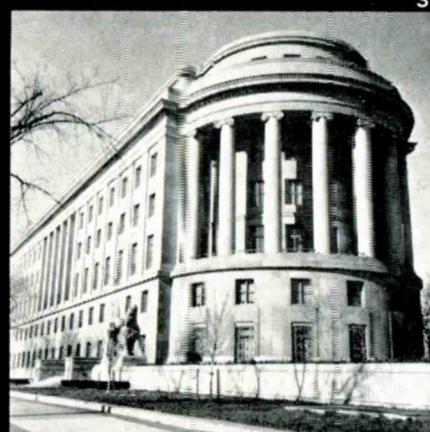
3.



4.



5.



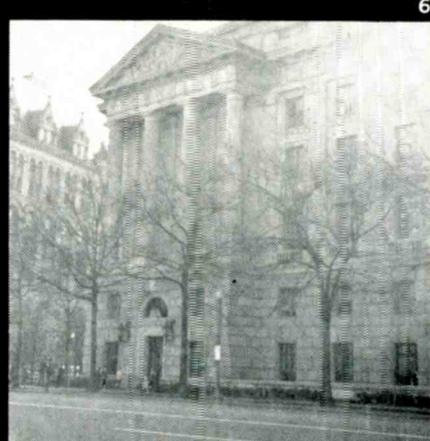
6.



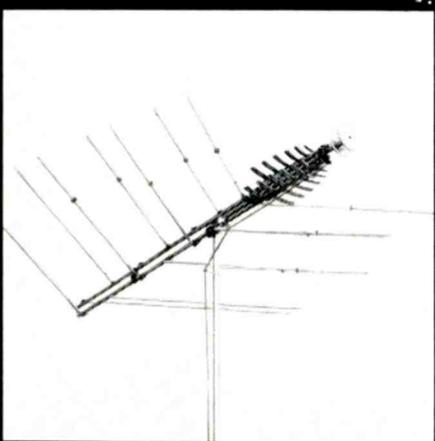
7.

1. Blair House
2. The Capitol
3. The Pentagon
4. Washington National Airport
5. Department of Justice
6. Federal Trade Commission
7. National Space and Aeronautics Administration
8. Federal Communications Commission
9. Model LPV-CL400—one of eight new JFD LPV-CL Color Lasers (with FREE signal splitter) for best VHF/UHF/FM performance
10. Model LPV-TV100—one of eight JFD LPV-TV Log Periodics for most powerful VHF/FM reception
11. Model LPV-UCL22—one of four JFD LPV-UCL Color Lasers for ghost-free UHF pictures

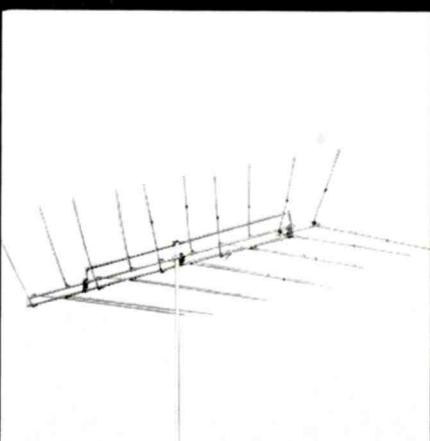
© 1968 JFD Electronics, Inc. All rights reserved. JFD is a registered trademark of JFD Electronics, Inc. All other trademarks are the property of their respective owners.



8.



9.



10.



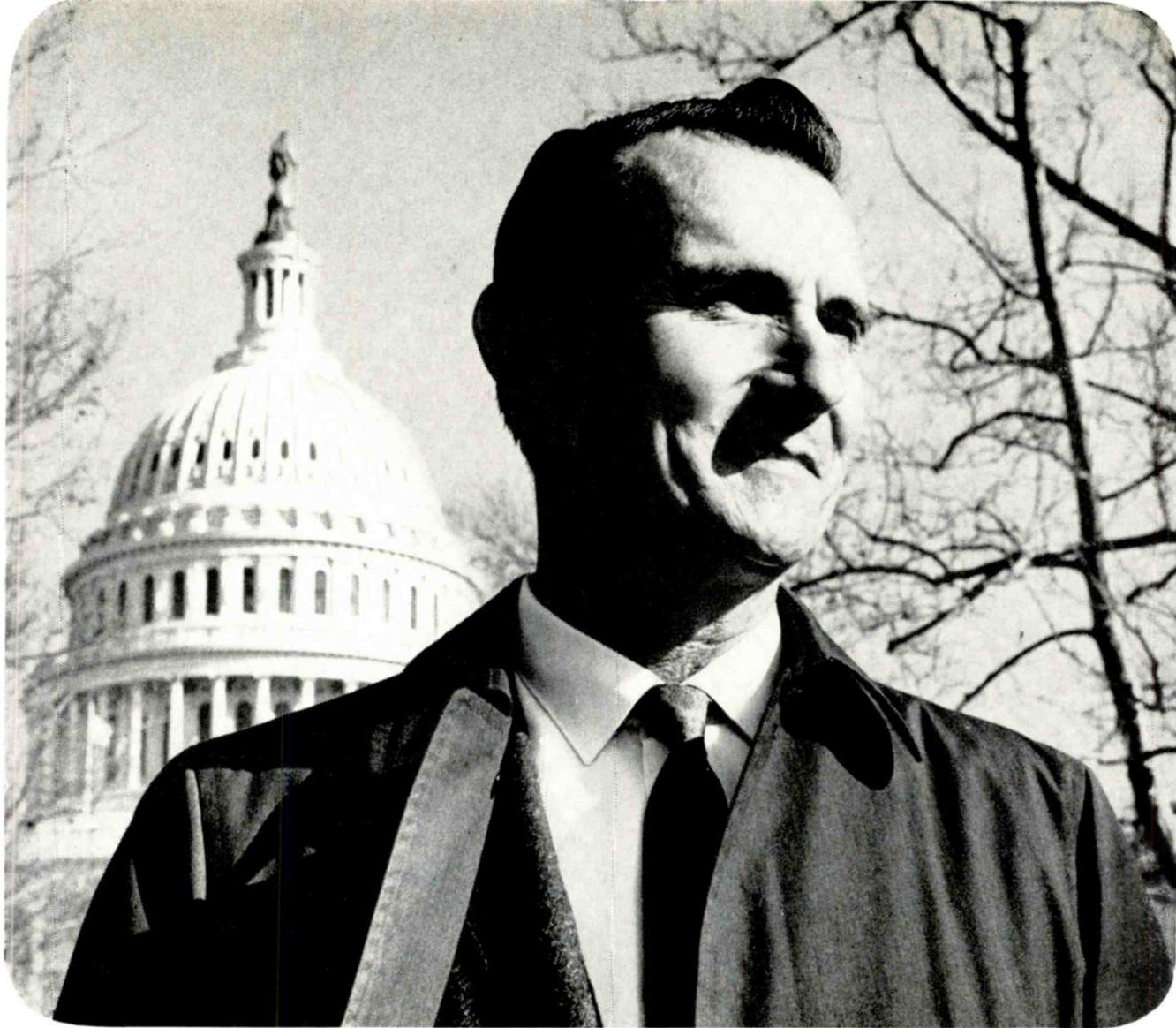
11.

SWITCH TO THE JFD LPV—THE **PROFESSIONAL'S** ANTENNA. YOUR JFD LPV DISTRIBUTOR CAN PROVE IT TO YOU!

**ANDREWS ELECTRONICS**  
1500 W. Burbank Boulevard  
Burbank, California  
**DEAN'S ELECTRONICS**  
2310 Long Beach Boulevard  
Long Beach, California  
**GROSSMAN & REYNOLDS**  
1800 West Valley Boulevard  
Alhambra, California  
**MARCUS ELECTRONICS**  
5751 W. Pico Boulevard  
Los Angeles, California

**MARTIN DISTRIBUTING COMPANY**  
2509 East Florence Avenue  
Huntington Park, California  
**HURLEY ELECTRONICS**  
2101 N. Fairview, Santa Ana, 638-7220  
In: Inglewood, 679-2276 Ontario, YU 6-6638; San Bernardino, TU 5-0721; Long Beach, HE 6-8268; Oxnard, HU 3-0133; Oceanside, SA 2-7694.  
**PAPEL BROTHERS**  
4652 E. Third Street  
Los Angeles, California

**RABER WHOLESALE ELECTRONICS**  
265 So. Laurel St., Ventura  
116 No. Nopal St., Santa Barbara  
**RADIO PRODUCTS SALES**  
1501 So. Hill Street  
Los Angeles, California  
**WESTERN RADIO & T.V.**  
1415 India Street  
San Diego, California  
**VALLEY RADIO SUPPLY**  
1134 33rd Street  
Bakersfield, California



## "When you're commissioned to do antenna installations for the Capitol

... Blair House, the Pentagon, Washington National Airport, Department of Justice, Federal Trade Commission, Federal Communications Commission, and the National Space and Aeronautics Administration Buildings, you can't take chances. That's why we install JFD television antennas exclusively," says JERRY PEAKE, of Jerry Peake Co., Inc., Washington, D.C.

"As the biggest professional antenna installing company around these parts, we can't afford to be No. 2. We've got to deliver top picture—VHF and UHF — for the dealers, retailers and department stores who rely on us to keep their sets sold and customers satisfied. Color, especially, must be natural and ghost-free. Only

JFD LPV antennas come across with this kind of reception."

Jerry Peake Co., Inc., Washington, D.C., has installed over 185,000 antennas in the last 18 years in the Washington, D.C. area. He relies on both JFD LPV-CL Color Lasers and LPV-TV Log Periodics — like other professionals — to get performance people expect from a professional.

Here's why:

**W-I-D-E BAND LPV LOG PERIODIC DESIGN** delivers *more* gain, *higher* signal-to-noise ratios, *pinpoint* directivity that kills ghosts—VHF and UHF.

**SHOWROOM QUALITY COLOR** — *flat* response across each channel. No "suck-outs" or "roll-off." *Out-performs* any other antenna in *color* or

black and white — *keeps* customers sold.

**CAPACITOR-COUPLED ELEMENTS** work on *both* fundamental and harmonic modes. *Entire* antenna (not just part of it as in other antennas) responds to *every* channel.

**RUGGED NEW "FLIP-LOK" ASSEMBLY** snaps out elements — keeps them *tight* and right on target.

# JFD® LPV®

**JFD ELECTRONICS CO.** 15 Avenue at 62 Street, Brooklyn, N.Y. 11219

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

**ORVAC ELECTRONICS**  
112-B E. Orangethorpe  
Anaheim, California

**MAR VAC**  
2080 Placentia  
Costa Mesa, California

**CASS ALTSHULER**  
801 Seventh Avenue  
Oakland, California

**DUNLAP ELECTRONICS**  
1800 - 18th Street  
Sacramento, California 95809  
Also in: Chico, Vallejo, Modesto, Fresno,  
Walnut Creek, Bakersfield, Marysville,  
Stockton, Merced, Redding and Reno,  
Nevada

**QUEMENT ELECTRONICS**  
1000 South Bascom Avenue  
San Jose, California

**REDWOOD ELECTRONICS SUPPLY COMPANY**  
711 Summer Street  
Eureka, California

**WHOLESALE RADIO & ELECTRIC SUPPLY COMPANY**  
1348 El Camino Real  
San Carlos, California

**WHOLESALE RADIO & ELECTRIC SUPPLY COMPANY**  
1116 Folsom Street  
San Francisco, California 94103  
Also in Petaluma

## LETTERS

Dear Editor:

You better quit telling me how to operate my business if you know what's good for you. You may think this is a good thing to raise prices but us men what's been around awhile know you can't do that and keep customers. They won't pay those bills cause they know you are making too much off them. My customers won't pay more than \$4.00 for a service call and I know cause I asked one one time how much he thought my time was worth and he told me.

This business is to competitive to let us raise our prices at this time. Around here it's so bad I had to move my shop in to my basement cause I couldn't make the rent down town. What with not being able to get more than \$25.00 mark-up on a color set and everything COD, us little fellows just can't take the chance of raising prices. Besides the big guys will take all the customers if I raise my rates. The only way I can keep them is charging less. Sometimes I think I should quit this business and go work for someone else as a technician except I don't

have enough schooling for them to hire me. Besides they all want color men and I ain't had a chance to get to one of those meetings yet to learn all about it at. I did get a book on how to fix your color set but haven't read it yet.

Besides, what's the good of raising the price if you can't collect what you already got on the books. I tried a while back sending out some statements but nobody paid up. So it's a lot of wasted time and effort to collect those back bills. Anyway I don't believe anybody charges them rates you printed and nobody would pay if they did. People won't stand for being charged too much. Better to put down some tubes or something that you didn't use, they don't miss a big parts bill so much.

It would be easier if those factories made their sets easier to work on. Those printed circuits are impossible to work on. You can't trace out a circuit or anything. Transistors are also impossible. I refuse to work on any of them cause you can't make any money at it. I tried a few and ended up taking them to a big shop down town and he charged me plenty to fix it. I never did get paid for the work by the customer.

Anyway you better quit telling us to raise our prices cause I ain't going to do it and lose all my customers. I made nearly \$3,000.00 last year and if I learn about color, I may make more next year. So you leave me alone.

Sincerely,  
Howard L. Bonar



## RCA Hi-Lite color picture tubes bring OEM quality to your replacement tube customers

Odds are that when a dealer is called to replace a customer's color picture tube and he replaces it with an RCA Hi-Lite, he's giving the set owner a better product than he had when his set was new.

That's because RCA Hi-Lite picture tubes are RCA's best... the same quality... the same tubes... that go into today's original equipment sets. RCA Hi-Lites are all-new... glass, gun, the works! And incorporate the continued advancements in picture tube technology achieved by the world's leading color picture tube manufacturer. So your dealer literally "up-dates" his customer's color set when he installs one.

Here's picture brightness and color fidelity at its finest, available for the service trade in 19-inch and 25-inch rectangular and 21-inch round tube types.

How about you? Are you offering your customers today's color?



RCA Electronic Components and Devices, Harrison, N.J.

**The Most Trusted Name in Electronics**

# CALECTRON

San Francisco: 33 Gough Street, MA 1-3400  
Fresno: 2930 Butler Avenue, 268-8411  
No. Sacramento: 330 Commerce Circle, 922-5885

Dear Mr. Martin:

Let me congratulate you on the job you are doing in firming up the service charges in the California area. I think that your magazine has done and is doing a job I have felt was nearly impossible.

Occasionally I give talks and conduct discussions with service organizations in the Texas-New Mexico area. In conjunction with this I am planning to get up a page or two of printed literature to hand out for the shop owners to take with them. My reason for this is that I feel much of the information is not retained as well if memory is relied upon. And very few people seem to take notes, or know how to do so.

I would like your permission to include a portion of the information in your October 66 article A REPORT ON SERVICE PRICING in the literature that I pass out. I will be happy to give whatever credit information you would care to have included.

Cordially,  
Dick Pavak

COLMAN ELECTRONIC PRODUCTS

ELECTRONIC SERVICE DEALER

# electronic service dealer

## STAFF:

DONALD J. MARTIN  
Publisher and Managing Editor  
CSEA Press Secretary

A. DIANE POWELL  
Associate Editor

FRANK BURNS  
Business Manager

JIM KIRBY  
Art & Cover Director

VOL. 6 / NO. 11

MARCH, 1967

## CSEA EDITORIAL ADVISORY BOARD AND OFFICERS

President  
PAUL E. FORT, JR.  
Vice President  
HUGH WILKINS  
Secretary  
OAKLEY DEXTER  
Treasurer  
CAPP LOUGHBORO  
Immediate Past President  
DARRELL PETSVAL

## BOARD OF DIRECTORS

Zone A  
AL FOX  
ZONE B  
NORMAN JAMES  
LARRY SCHMITT  
OAKLEY DEXTER  
ZONE C  
AL CHESSER  
ZONE D  
MEL HAURY  
ZONE E  
LLOYD KAUN  
ZONE F  
CAPP LOUGHBORO  
VIRGIL GAITHER  
HUGH WILKINS  
ZONE G  
PAUL E. FORT, JR.

## BOARD OF DELEGATES

Chairman  
VIRGIL GAITHER  
Vice-Chairman  
OAKLEY DEXTER  
Secretary  
RAY MERREL



CALIFORNIA STATE  
ELECTRONICS ASSOCIATION, INC.  
JIM WAKEFIELD  
Executive Director  
5154 No. Palm Ave.  
Fresno, Calif. 93704  
227-1587  
Sacramento Phone: 482-0706

Electronic Service Dealer is published monthly at 13543  
So. Hawthorne Blvd., Hawthorne, Calif. 96504. Phone:  
(213) 675-8070 by Associated Publications.

## FEATURES

- 14 The Bureau of Electronic Repair Dealer Registration . . . A history and re-cap of the functions and success of the Registration Law in California.
- 19 What Price Color? A guest Editorial by Forest Belt of Radio-Electronics Magazine.
- 21 The Future Belongs To Those Who Prepare For It.  
by Morris L. Finneburgh, Sr.  
Chairman of the Board—The Finney Co.
- 23 A New Approach To The 82-Channel Antenna  
by James Sarayiotis  
JFD Electronics Co.
- 29 NEA/SELF CERTIFICATION — What to look for before taking the Self-Certification Examination.

## DEPARTMENTS

- 4 LETTERS
- 6 EDITORIAL  
"Improving The Odds Against Being Cheated"  
A Case for the BERDR
- 9 CSEA NEWSWIRE
- 13 PRESIDENT'S MESSAGE
- 25 NEW PRODUCTS
- 27 TRADE/TALK
- 30 CLASSIFIED ADS

Entered as Controlled Circulation  
at Los Angeles, California.

# electronic service dealer EDITORIAL

DON MARTIN



## “Improving The Odds Against Being Cheated”

That's the way the article read on the front cover of Consumer Reports February Issue.

It was supposed to be an article that showed the true picture of the Television service industry but turned out to be another big step backward in a rash of backward steps by major media in recent months.

The newspaper and TV station expose in Chicago last summer started the ball rolling when they showed that 18 out of 20 dealers chosen for an experiment proved to be crooks. Forbes Magazine and Newsweek didn't help matters with their jumping on the bandwagon for circulation building. Oh yes, Educational TV??? also gave the industry a big shot in the arm. Now, Consumer Reports joins the select circle of condemning an industry. You can never tell, however . . . Some magazines may see this trend and actually do a good job of closing the casket for good.

It seems senseless to me that the nation's manufacturers of home entertainment products and the broadcasting industry don't try to do something to change this image. They have all the tools . . . the world's greatest news media and a stake in future sales. Maybe there is something in the wind that they would just as well see the independent service industry fold up its doors and go home. What about the hundreds of service dealer oriented distributors? They certainly have a stake in this business and it could mean the end to them as well as the independent dealer if this type of attack is to be allowed to continue.

In the last few weeks since the CR report, we have seen a lot of letters going across the table condemning the article. Industry leaders, Association leaders, some manufacturers have taken the time to write CR complaining and challenging their figures. Sometimes we have got to get this out of our system, and this is a great outlet, but we doubt the value or effect it will have on the editor of that article.

The time has come to take a positive approach to the problem. Let's build the creditability of our own industry by showing the type of men, the amount of education and the fantastic need for their services. I have seen the service dealer making a house call before a doctor was called to take care of a sick child. The television set is a national institution that demands competent, quick service. If things keep going the way they are now . . . there won't be anyone around to fix those sets, except the manufacturer himself. Maybe an all-industry meeting is needed to discuss the image of the service dealer rather than warranties, open door distributors, tube checkers and the really unimportant items that fill a senseless agenda each year.

## A Case For The BERDR

With a change in California politics, and for the better I might add, there is a great deal of concern regarding the future of the Bureau of Electronic Repair Dealer Registration. There are many who resent paying \$35 per year in order to operate a service shop and we cannot really blame them, except to say that this is a small token they are paying for a clean industry.

When I began publishing MESD in 1960 there were a lot of problems. Yellow page advertising, \$1 house calls, No Fix no Pay advertising, set napping, nonreplacement of parts charged for, TV service on top of the BBB complain list, moonlighters, 20,000 people listed as engaged in the TV service business according to the board of equalization, etc.

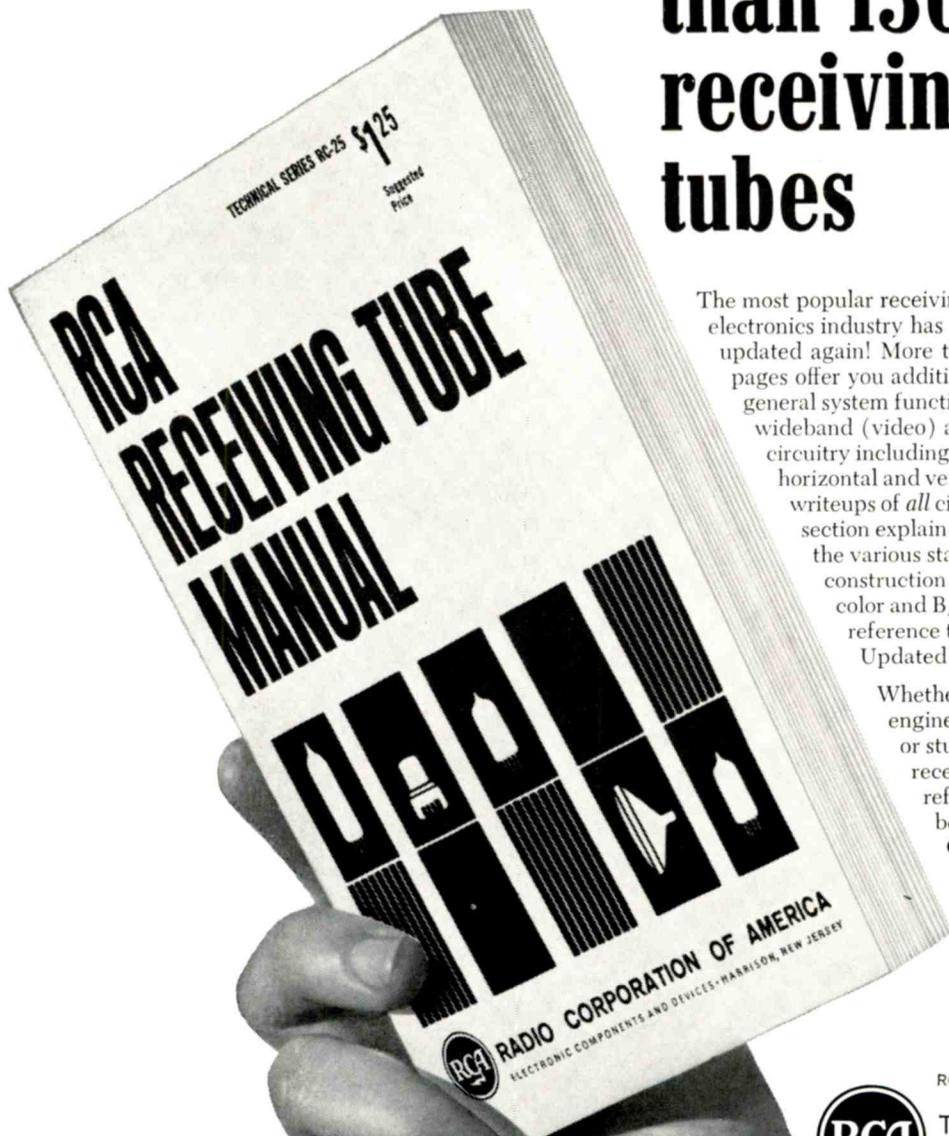
What has happened in the past three years to your own business? Are you busy? Do you see the bait advertising in the local newspapers? Have you checked for TV service in the classified section lately? Have you seen the BBB complaint list and checked how TV service stands? Is the elimination of unfair competition worth \$35 per year?

In this issue of ESD we have reviewed a history of the BERDR and re-capped their performance record in the last two years. We believe you will find it very interesting and of benefit to you in judging the BERDR.

Business is better than it has ever been. Dealers are up to their necks in work. You say it is because of color TV? You're right, except that in 1960 there were over 15,000 guys fixing sets and today there are only 6,400 registered dealers. The reduction of the moonlighters and part-timers along with sophisticated color circuits has made your business boom. It has also made it possible for you to charge a fair price for the first time and to make a living for the first time. There isn't any bait advertising in the yellow pages or the local newspapers. In fact, a recent check of the classified section of the metropolitan papers disclosed no service advertising here at all. In years past . . . this section was full. Many of you haven't even had time to look recently. Did you know that television service is not in the top 20 complaint getters for the BBB? Seems strange but true. And, whatever happened to the big clip artists that carried all the phoney phone numbers and no addresses . . . you say they are gone . . . You're right, they are gone. Why? Simply . . . there is a state agency that can collect evidence that will stand up in court and make convictions possible for the first time. Maybe the fines aren't much, but the revocation of registrations certainly are.

If you get a chance, read the article and take a look at the statistics. I think you will find that a clean industry in California is worth \$35 per year.

# Lists more than 1300 receiving tubes



The most popular receiving tube manual in the electronics industry has been revised and updated again! More than 600 data-packed pages offer you additional text information on general system functions, tuned amplifiers, wideband (video) amplifiers, and TV circuitry including scanning, sync, and both horizontal and vertical deflection. Text writeups of *all* circuits in the circuit section explain in detail the functions of the various stages, aiding in the construction of these circuits. Data on color and B/W picture tubes, voltage reference tubes, voltage regulator tubes. Updated Applications Guide.

Whether you're a service technician, engineer, radio amateur, hobbyist or student... the new RC-25 receiving tube manual is a reference work that just has to be in your technical library. Order yours today from your nearest Authorized RCA Tube Distributor.

Only  
**\$1.25\***  
\*Suggested  
Price

RCA Electronic Components and Devices, Harrison, N.J.



The Most Trusted Name  
in Electronics

# There's a *DOUBLE VALUE* in the **RCA** **COLOR PACK**

# '67

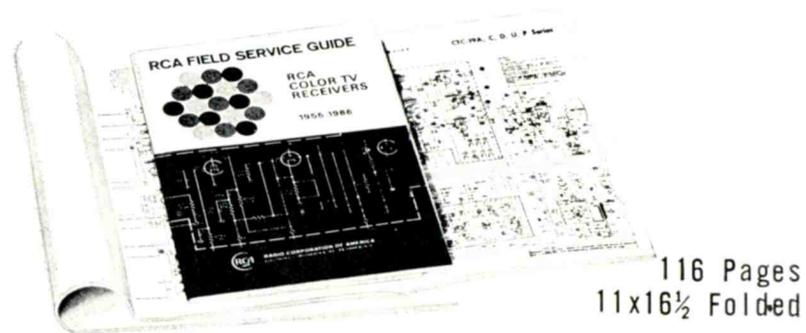


**21 Popular RCA  
 Receiving Tubes  
 for Color TV**



**A FREE Copy of the New  
 RCA FIELD SERVICE GUIDE  
 for RCA Color Receivers  
 from 1955 to 1966**

**\$29<sup>96</sup>**  
**Dir. Net**



116 Pages  
 11x16½ Folded

YOU GET ONE OF EACH OF THESE TUBES:

1V2	6CG8A	6GF7A
3A3A/3B2	6DQ5	6GH8A
6AQ5A	6DW4B	6GU7
6AU4GTA	6EA8	6JU8A
6AW8A	6EM7	6U8A
6BK4B	6EW6	12BH7A
6CB6A	6FQ7/6CG7	12BY7A

Total list\* \$74.90

**AND The RCA FIELD SERVICE GUIDE containing:**

- Schematics on all RCA Color sets for the last 10 years
- Field Adjustments
- Parts list
- Wave forms for majority of chassis
- Top and rear chassis views
- Representative photos of typical receivers
- Comprehensive index of models from CTC2 (1955) through CTC20 (1966)
- 3 Part Index by Model Number, Model Name and Chassis Number
- Separate section on tuners
- Convergence, purity, black and white setup adjustments. Illustration of convergence board for CTC2 through CTC20
- Step by step procedure for replacing a color picture tube.

THE RCA FIELD SERVICE GUIDE helps you perform all adjustments on an RCA color set that can be performed in the home with the aid of a color bar generator.

\* Factory suggested, optional with Dealer.

**AUTHORIZED  DISTRIBUTOR**



**RCA VICTOR DISTRIBUTING CORP.**

6051 TELEGRAPH ROAD, LOS ANGELES, CALIFORNIA 90022

LOS ANGELES  
 SAN FERNANDO VALLEY  
 PASADENA/BURBANK

• 723-6661  
 • 781-6501  
 • 246-8373

SAN GABRIEL VALLEY  
 WHITTIER/ALAMBRA  
 LONG BEACH/DOWNEY

• 443-6907  
 • 728-7295  
 • 639-6950

INGLEWOOD/REDONDO  
 ORANGE COUNTY (714)  
 SAN BERNARDINO (714)

• 675-4401  
 • 521-6700  
 • 889-1518

**Your One-Stop Electronic Parts Supply House**



# CSEA NEWS WIRE

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

## NORTH SAN DIEGO ELECTS CORNELL

Jack Cornell was just elected as the new president of CSEA chapter #18 in North San Diego County. Other officers elected included: Jerry Hieronymus as vice president; Helen Merrill as Secretary-Treasurer; Ray Merrill as CSEA Delegate with Bob Tomko as the alternate and directors Stan Bendowski, F. M. Jones and Phil King. A joint installation dinner is being planned with Chapter 13 in San Diego for later this month.

ESD ESD ESD

## BURBANK-GLENDALE CHAPTER NAME AVRIL

The Burbank-Glendale chapter of CSEA held their elections last month and named Walt Avril as the new president. Everett Pershing was named as Vice President with Art Hirahara as Secretary and Jim Scarborough as Treasurer. Directors for the coming year will include: C. Leonard, B. Seal, R. Gerringer, T. Kamase, K. Satanji and R. Singleton.

ESD ESD ESD

## CSEA TO PUBLISH DIRECTORY OF MEMBERS

The CSEA Board of Directors have directed Jim Wakefield to produce a complete directory of membership along with name of shop, address, phone number, etc. and this is to be distributed to all members. The idea behind such a directory is for members to use in referring customers who are moving to a new location. It will also be used as a handy tool in contacting other members concerning business and association problems.

ESD ESD ESD

## ZONE'S TO NAME P.R. MAN TO AID PUBLICATION

Larry Schmitt of the San Mateo chapter of CSEA has asked all CSEA zones to name a special public relations man to handle the gathering of local information to be reproduced in ESD each month. This person is to be asked to attend all chapter functions as guests of the chapter or zone and, in return, will take pictures and write stories about the activity for the magazine. Schmitt has been named to handle the Zone "B" material.

ESD ESD ESD

## CONVENTION TO BE SET FOR JUNE IN FRESNO

Although the exact dates are not set, the annual CSEA convention will be held in Fresno during the month of June with a special committee being formed to make this an outstanding event. Manufacturers and Distributors are being asked to sponsor certain events and it is hoped that through this industry cooperation we will be able to offer all delegates a great cost package for the entire family. Last year it was held in San Francisco but did not draw the attendance that Fresno has over the years. There will be more on this at a later date.

ESD ESD ESD

## LIEN LAW DISCUSSED

The Board of Directors of CSEA discussed the problem of the current lien laws regarding set repossession. It seems that once a set is returned to the home there is no way in which it can be repossessed for non payment of the bill. Banks and other lending institutions are faced with the same problem and there will be an effort made to have the law changed.

ESD ESD ESD

## BUREAU CHIEF APPOINTMENT COMING UP

The appointment of a chief of the Bureau of Electronic Repair Dealer Registration should be made within the next few weeks, according to word out of Sacramento. Several people are being mentioned for the \$9,000 a year job, including some well-known industry leaders. At the present time the Bureau has registered around 6,400 service dealers, including multi-registered service organizations such as Sears, Packard Bell, etc.

ESD ESD ESD

## WES NOVATNY NEW SAN DIEGO CHAPTER PRESIDENT

Wes Novatny has just been named as the new president of CSEA chapter #13 in San Diego. Other officers recently elected included: Lew Lewton as Vice President; Dick Schuricht as Secretary-Treasurer; Harold Baughman as delegate with Wes Novatny as alternate delegate. Director from the zone is Ed Fort and directors of the chapter include: Sid Chemnick, Jay Goodwin and Walter Trook. At the same time, it was announced that their color course has been postponed.

(Continued Next Page)

SANTA CLARA CHAPTER NAMES NEW OFFICERS

Jim Ballard has been named as the new President of the Santa Clara Chapter of CSEA with Barney Finger named as Vice President, Woodrow Yoder as Secretary-Treasurer and Mrs. E. C. Marshburn as Executive Secretary of the group. T. C. Marshburn, immediate Past President remained on the Board of Directors.

ESD ESD ESD

MARIN COUNTY CHAPTER MEMBERS CLOSE SHOPS ON MONDAY

Don't ever say it can't be done because it can . . . the Marin chapter members voted last month to close their shops on Mondays and go on a five-day work week. To the cry of the Barbers do it . . . service shops throughout the county will remain closed on Mondays.

ESD ESD ESD

CSEA BOARD GOES ON RECORD OPPOSED TO LOTTERY SYSTEM FOR YELLOW PAGES

The CSEA Board of Directors recently went on record as opposed to a change in the present system of placing yellow page advertising by seniority. A local dealer has a law suit against the Telephone Company and has asked that the system be changed to a lottery system for ad placement with no regard to seniority.

ESD ESD ESD

CSEA TO ADD NEA DUES TO MEMBERSHIP STATEMENTS

Many members have not joined the National Electronic Associations because they didn't know how it was done. The CSEA Board voted to add NEA dues to the regular billing statements with an option to pay or not to pay dues to NEA. As soon as a new member joins his name will be sent to NEA so that all of the materials can be sent to him immediately. Some members stated they had joined but had never received any information from NEA. Needless to say, there has been some confusion in regards to this membership but it is being cleared up at the present moment. Anyone interested in joining NEA—dues are \$12 per year. May do so by sending a check for this amount to the CSEA executive offices in Fresno marked clearly NEA or wait for the next billing. The Los Angeles chapter recently voted 100% membership in NEA.

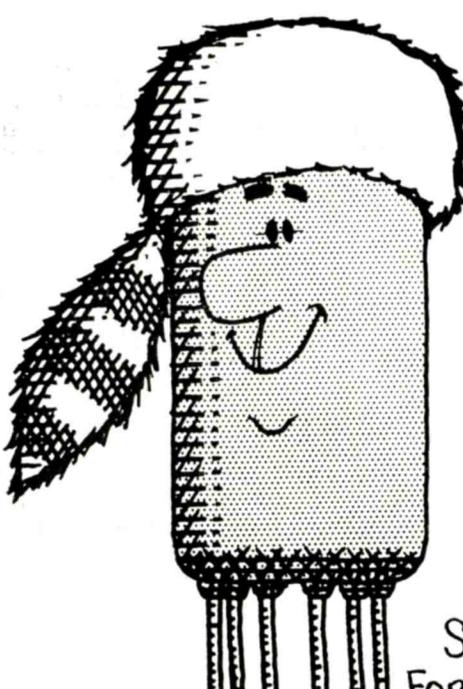
ESD ESD ESD

LEE HOY TO HEAD ZONE "B"

Lee Hoy of Marin County Chapter of CSEA was just elected as President of the Zone "B" Council. Ken Deedler of San Mateo chapter was elected V.P. and Vern Hassett of Sonoma County Chapter will be the new treasurer. Phil Fisher continues as Zone Executive Sec.

ESD ESD ESD

GE... THE COMPACTRON PIONEER



CREATING BUSINESS FOR YOU  
WITH MILLIONS OF  
NEW SOCKETS ANNUALLY.

SEE YOUR AUTHORIZED GE DISTRIBUTOR  
FOR ALL YOUR RECEIVING TUBE REQUIREMENTS.



**GENERAL  ELECTRIC**

288-05A2

Finally somebody is helping...  
helping you prepare for

# The growing crisis in service

Motorola takes the bull by the horns . . . introduces  
“on-the-job” technical training  
for your men—with a greatly expanded  
staff of technical personnel.

Home entertainment products are changing—fast. There’s more transistorization . . . and of course more color every year. This means great opportunity for service organizations that keep abreast. Well-informed technicians will be in even greater demand than they are now.

Motorola can help your service department be well prepared.

We have recently increased our staff of field technical personnel. It is their job to help provide you with Technical information for your men and to give some of the training your men will need to cope with this rapidly changing industry.



Each of our technicians has had extensive, practical consumer experience. They know their business—from your side of the fence. The training will be done *right in your place of business*. It will provide a valuable adjunct to the large-scale training meetings held by Motorola Regional Managers & Distributors.

Two hours will be spent in formal training. The remainder of the day will be spent working with your men *on your work* to give information—and to help find ways to make more profitable and productive use of service time. Get full information on availability of this training for your shop. Just call your Motorola Distributor.



**MOTOROLA®**

# Be a Bright Guy. Get your name into TV Guide up to 4 times this year.

Your Sylvania Distributor will put your name, your town and your phone number in TV Guide for your area as many as four times this year. And to make the most of it, we'll tie you into our big in-store display program. If you're a bright TV serviceman, you carry the most advanced replacement parts: Sylvania's famous *color bright 85*<sup>®</sup> color picture tube and receiving tubes.

Because you're an Independent, we're telling TV Guide readers you're in the best position to make an honest, unbiased recommendation on color set repairs. We list your name right on the facing page.

That's what our double-page, full-color ads in TV Guide, and the display program, are all about. Business for you. If you like the bright idea, see your Sylvania distributor and ask him to include you in.

Sylvania Electronic Tube Division, Electronic Components Group, Seneca Falls, New York 13148.

**SYLVANIA**  
SUBSIDIARY OF  
GENERAL TELEPHONE & ELECTRONICS **GTE**





## PRESIDENT'S MESSAGE

ED FORT, JR.

C.S.E.A. is undoubtedly the most successful electronic service association in America. We have always been the leader—the model to which other associations look for guidance and inspiration. Have you ever stopped to wonder why?

There are, and always have been, many natural obstacles that should have slowed our growth—many barriers that, at times, have seemed almost insurmountable. There have been sectional biases, varying business conditions, differing social outlooks, as well as many other problems arising from our rather unique geography. California covers an area on the west coast that, if transposed to the east coast, would extend from New York to South Carolina. It would seem somewhat absurd to consider one association that would be able to serve at a grass roots level all these areas, where their problems and conditions are so varied. And yet, here in California, C.S.E.A. has continued to progress and continued to be a leader—with internal differences equally as vexing as those encountered in the East.

This success can be attributed to the calibre of leadership that C.S.E.A. has always been able to attract. These leaders have, with few exceptions, been men of more than usual vision and foresight. When differences have inevitably arisen, they have never removed their sights from the ultimate goals of the association. They have been able to gather together, as reasonable men, and reconcile these differences. Instead of concentrating on those factors that would tend to divide the association, they have been able to direct all their efforts toward solving these problems common to all.

As president, I am extremely grateful to those who have served in the

past and have passed on such a healthy and robust organization—it makes our present task that much easier. I have mentioned this before, but it

bears repeating. Our present Board of Directors is the finest group of men with which I have ever worked. These men are carrying on the traditions of their predecessors. In the near future, the need for these men to reach realistic decisions will continue to arise. Like any growing entity, C.S.E.A. will continue to experience normal growing pains. But with a Board such as we have, one thing is certain: whatever decisions are reached, they will be in furtherance of our common goal—the continued growth of C.S.E.A. and its members.

Tarzian offers  
**FAST, DEPENDABLE  
TUNER REPAIR  
SERVICE (ALL  
MAKES)**



It just makes sense that a manufacturer of tuners should be better-qualified, better-equipped to offer the most dependable tuner repair and overhaul service.

Sarkes Tarzian, Inc. pioneer in the tuner business, maintains two complete, well-equipped Factory Service Centers—assisted by Engineering personnel—and staffed by specialized technicians who handle ONLY tuner repairs on ALL makes and models.

Tarzian-made tuners received one day will be repaired and shipped out the next. Allow a little more time for service on other than Tarzian-made tuners.

Tarzian offers a 12-month guarantee against defective workmanship and parts failure due to normal usage. And, compare our cost of \$9.50 and \$15 for UV combinations. There is absolutely no additional, hidden charge, for ANY parts except tubes. You pay shipping costs. Replacements on tuners beyond practical repair are available at low cost.

Ⓢ Tarzian-made tuners are identified by this stamping. When inquiring about service on other tuners, always give TV make, chassis and Model number. All tuners repaired on approved, open accounts. Check with your local distributor for Sarkes Tarzian replacement tuners, replacement parts, or repair service.

 **SARKES TARZIAN, INC.**  
Bloomington, Indiana

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

ONLY  
**\$9.50**  
INCLUDING

**ALL PARTS**  
(except tubes)  
and **LABOR**

**24-HOUR SERVICE  
1-YEAR WARRANTY**

**TWO SERVICE CENTERS  
TO SERVE YOU BETTER**

See your distributor, or use the address nearest you for fast factory repair service

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

# The Bureau of Electronic Repair Dealer Registration

... a history and re-cap of  
the functions and success of  
the registration law in California

## *HISTORY AND ORGANIZATION*

The Bureau of Electronic Repair Dealer Registration was established by the addition of Chapter 20 (California Business and Professions Code, Sections 9800-9874), the Regulations are contained in the California Administrative Code, Title 16, Sections 2700-2721. This Electronic Repair Dealer Registration Law became effective September 20, 1963. The Bureau became operative December 11, 1963.

The duties of the Bureau are to implement and enforce the Electronic Repair Dealer Registration Law.

The Chief of the Bureau serves under the supervision and control of the Director of Professional and Vocational Standards. An Advisory Board consisting of five (5) members, assists the Director and the Chief in the operation of the Bureau by inquiries into the practices of the industry and by appropriate recommendations resulting therefrom. Three (3) members of the Advisory Board are selected to represent the public and two (2) members are selected from the industry. The Chief and the Board are appointed by the Governor with the Board members serving staggered four (4) year terms.

Operations of the Bureau are financed wholly by service dealer registration fees. The objective of the Bureau is to provide certain consumer safeguards to California citizens in their repair of television, radio or phonograph equipment. The law protects the public by

imposing upon service dealers certain obligations of the consumer concerning the significant aspects of the repair transaction.

The jurisdiction of the Bureau extends to persons or businesses whose activities include the repairing, servicing, or maintaining of television, radio, or phonograph equipment, normally used or sold for use in the home. All persons engaged in this business are required to register with the Bureau.

The Act, in general, prohibits untrue or misleading advertising, the making of false promises likely to induce a customer to authorize repair, any conduct which constitutes fraud or dishonest dealings, and conduct constituting gross negligence in the repair of television and associated equipment. The service dealer is prohibited from making compensation of any employee dependent upon the value of the parts placed in any equipment.

The service dealer is directed to return all replaced parts to the customer excepting such parts as are specifically exempted by the regulation. If a customer requests an estimate for labor and parts, the service dealer must give such an estimate in writing and is forbidden to charge in excess of the estimate without the previous consent of the owner. If a television tube is replaced, the invoice must set forth the intermix of new and used parts as set forth in a schedule contained in the regulations.

The following major programs have

been implemented to achieve the objectives of the legislation.

A. *REGISTRATION*. All service dealers must register. A service dealer is the owner of a business which engages in the activity of repairing television, radio, or phonograph equipment.

*ELEMENT 1*. Issuing registration to those who apply. This includes the sending out, receipt, and checking of application forms, the collection and accounting of fees, the issuance of registration certificates, issuance of renewal notices, and the updating of files involving change of addresses, and change of ownership entity.

*ELEMENT 2*. Discovering service dealers who are not registered and operating in violation of the law and securing their registration. This includes checking all service dealers who are mentioned in complaints to ascertain if they are registered and also checking all telephone advertisements and spot checking newspaper advertisements.

B. *ENFORCEMENT*

*ELEMENT 1. INSPECTION*. Making periodic inspections of shops on a state-wide basis. These spot checks are concerned primarily with proper posting of registrations, examination of advertising material and examination of invoices for full and complete disclosure as set forth in the regulations.

**ELEMENT 2. INVESTIGATION.**

An investigation is where the Bureau sends one of its own television sets through a shop where evidence available indicates dishonest dealing. Prior to running a set through a shop each part of the set is identified and marked in some manner, the circuits are checked for proper working order, and then the set is intentionally disabled by creating a controlled malfunction in a part or parts. A Bureau Field Representative, who is an electronic technician, places the set in the home of an "operator" and the suspected service dealer is called. When the set is returned by the service dealer the set is taken to one of the Bureau's laboratories (one in Los Angeles, and one in Sacramento). At this time it is determined whether the parts allegedly installed were in fact installed and also if the parts which were installed can be justified from the controlled symptoms which the set previously exhibited.

**ELEMENT 3. DISCIPLINARY ACTION.** Depending on the seriousness of the violations disclosed by customer complaints, inspection or investigation, the Bureau may (a) issue warnings, (b) initiate registration revocation or suspension proceedings, (c) request criminal prosecution by the local district attorney, or (d) request injunctive remedy by a Superior Court. All court actions or administrative hearings require the preparation of reports and the given of testimony by Bureau employees. All proposed decisions of the hearing officers are reviewed and adopted (or modified) by the Bureau.

**ELEMENT 4. INFORMAL CONCILIATION.** The Bureau processes approximately 3000 complaints per year received from the public or law enforcement agencies. Where violations have occurred which are not sufficiently serious to justify disciplinary action, but yet have resulted in some harm to a member of the public, the Statute provides for informal conciliation. In accordance with the Statute (B & P Code 9860-9863) the Bureau may recommend that the service dealer compensate the complainant for damages suffered.

**C. BOARD HEARINGS.** The Board of the Bureau of Electronic Repair assists the Bureau in the achievement of its objective by considering and making recommendations on its own initiative as to change in, additions to, or deletions of the regulations.

(Continued Page 30)

**BUREAU OF ELECTRONIC REPAIR  
SPECIAL INVESTIGATION CASES  
SENDING MARKED TELEVISION SETS THROUGH DEALERS TO DETECT FRAUD**

	1964-65 FISCAL YEAR	1965-66 FISCAL YEAR
1. <i>CASES REFERRED TO DIVISION OF INVESTIGATION DURING PERIOD</i>	15	20
A. Sent to Attorney General for Administrative Hearings	6	14
B. Sent to District Attorney for Criminal Prosecution	4	9
2. <i>CASES COMPLETED DURING PERIOD</i>	5	12
A. Cases closed because of insufficient evidence of fraud.	2	7
B. Cases closed with Attorney General		
1. Revocation of Registrations	3	6
2. Suspension of Registrations	0	1
C. Cases closed with District Attorney		
1. Convictions	2	3
2. Acquittals	0	1
3. <i>CASES PENDING AT THE END OF THE PERIOD</i>	6	18
A. Cases pending with Attorney General	0	11
B. Cases pending with District Attorney	0	7
4. <i>CASES INVOLVING FRAUD BY EMPLOYEES OF SERVICE DEALERS THAT WERE INVESTIGATED BY BUREAU</i>		
A. Referred for prosecution during period	4	3
B. Completed during period	4	2
C. Pending at the end of period	0	1
5. <i>DISPOSITION OF CASES INVOLVING FRAUD BY EMPLOYEES</i>		
A. Accepted by District Attorney for Prosecution	4	1
B. Rejected by District Attorney for Prosecution	0	0
C. Convictions	4	1
D. Acquittals	0	0

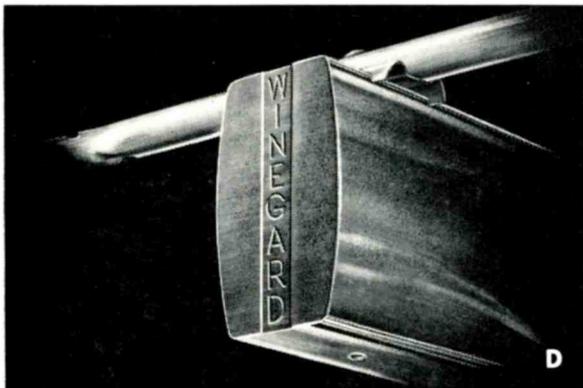
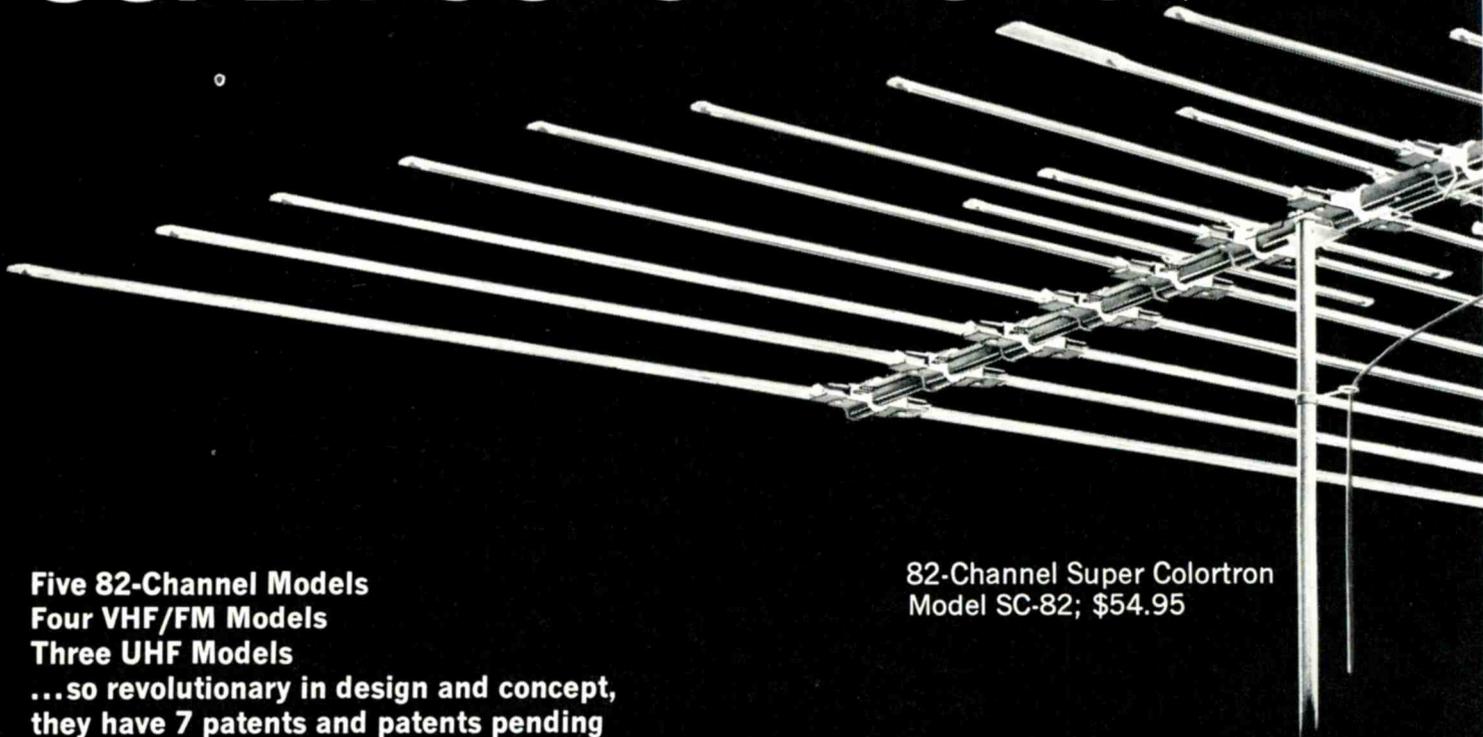
**BUREAU OF ELECTRONIC REPAIR  
CASES REFERRED TO THE LOCAL DISTRICT ATTORNEY FOR CRIMINAL PROSECUTION DUE TO NON-REGISTRATION AND DELINQUENT RENEWALS.**

	1964-65 FISCAL YEAR	1965-66 FISCAL YEAR
1. <i>REFERRED TO DISTRICT ATTORNEY FOR CRIMINAL PROSECUTION</i>		
A. Registered Dealers	25	37
B. Non-Registered Dealers	14	13
2. <i>COMPLETED DURING PERIOD</i>		
A. Registered Dealers	13	44
B. Non-Registered Dealers	6	19
3. <i>PENDING AT THE END OF THE PERIOD</i>		
A. Registered Dealers	12	5
B. Non-Registered Dealers	10	4
4. <i>DISPOSITION OF CASES</i>		
A. COMPLIED	13	51
B. Out of Business	6	10
C. Convictions	8	17
D. Rejected	0	1
E. Outstanding Bench Warrants	4	4

# Winegard Introduces Super Compact Total Design Electronic SUPER COLORTRONS

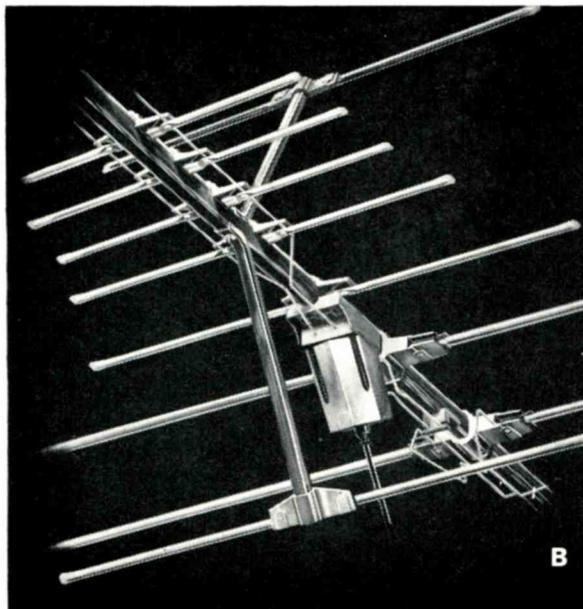
Five 82-Channel Models  
Four VHF/FM Models  
Three UHF Models  
...so revolutionary in design and concept,  
they have 7 patents and patents pending

82-Channel Super Colortron  
Model SC-82; \$54.95



## The World's First Total Design Antennas

New antennas come and go. But there's never been an antenna like the amazing Winegard Super Colortron. 12 models in all—totally designed with more exclusive electronic, construction and performance features than all other antennas combined. It's taken us a while to create and develop and perfect the Super Colortron. But it was worth the time. See for yourself. Read about the Super Colortron's exclusive features. Then call your Winegard distributor. Or write for full color, 8-page brochure.



### (A) Total Design

#### Cartridge Pre-Amps:

Exclusive solid state, instant-loading cartridge pre-amps drop into totally enclosed, weatherproof cartridge housing at point of signal interception. Models for 82-channel (VHF-UHF) antennas, VHF only, UHF only—plus a color spectrum filter. Custom-match the Super Colortron to any reception requirements.

### Total Design

#### Impedance Correlators:

Exclusive impedance correlators (2 patents pending) automatically increase 75 ohm driven elements to 300 ohms to provide 100% signal transfer from antenna to set. Enables antenna to be 20% more compact!

### (B) Total Design

#### Vertical Resonant Reflectors:

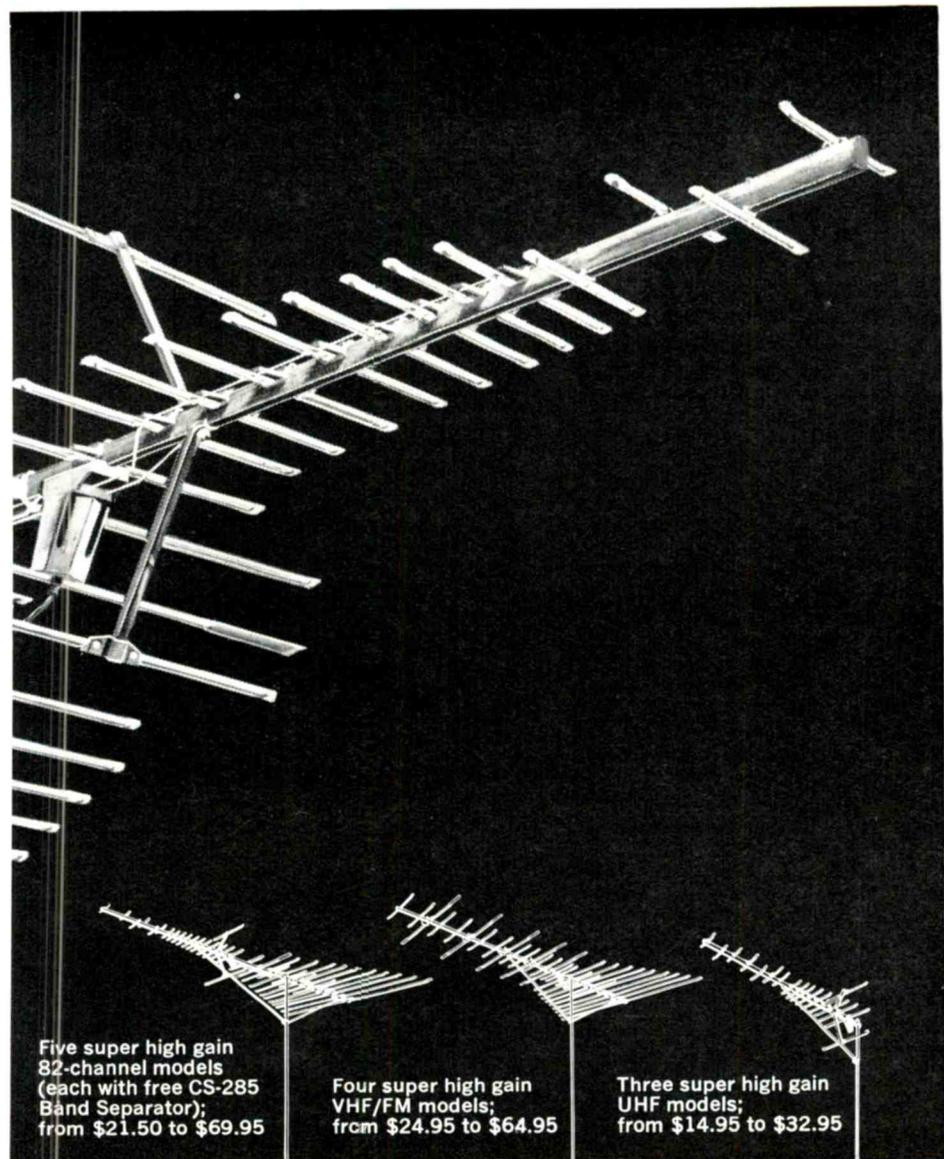
Exclusive UHF vertical resonant reflectors achieve highest realizable gain on channels 14-83 because of exceptionally large vertical capture area. More UHF gain than any other 82-channel antenna design.

### Total Design

#### Electro-Lens Director System:

Exclusive patented Electro-Lens system (U.S. Patent 2,700,105; Canada 511,984) absorbs entire signal and focuses it directly onto the driven elements to give Super Colortrons pinpoint directivity.

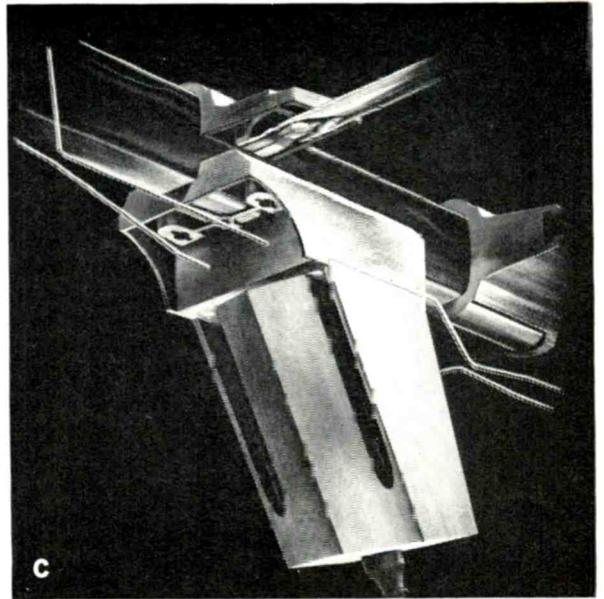
Circle 19 on reader's service card



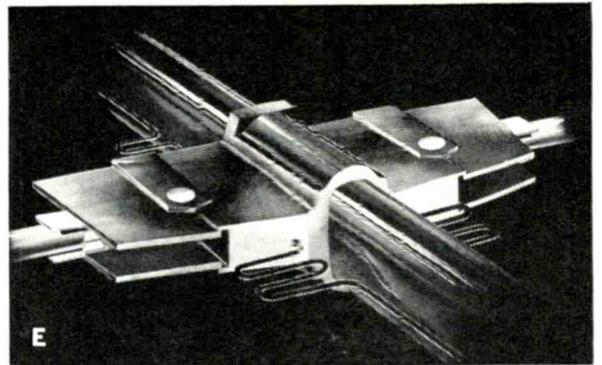
Five super high gain 82-channel models (each with free CS-285 Band Separator); from \$21.50 to \$69.95

Four super high gain VHF/FM models; from \$24.95 to \$64.95

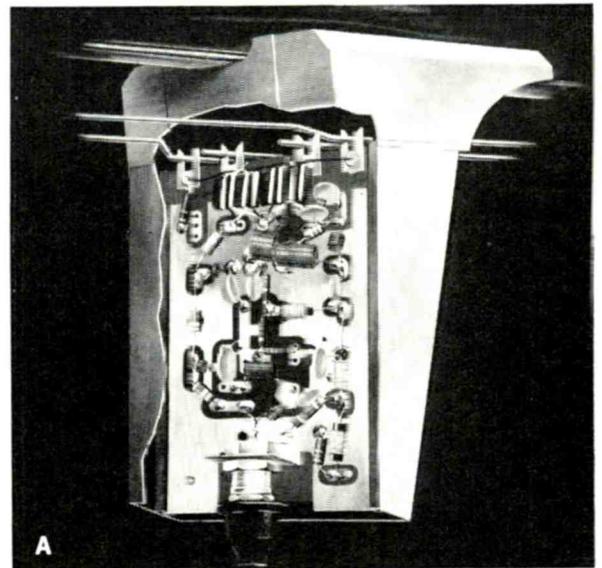
Three super high gain UHF models; from \$14.95 to \$32.95



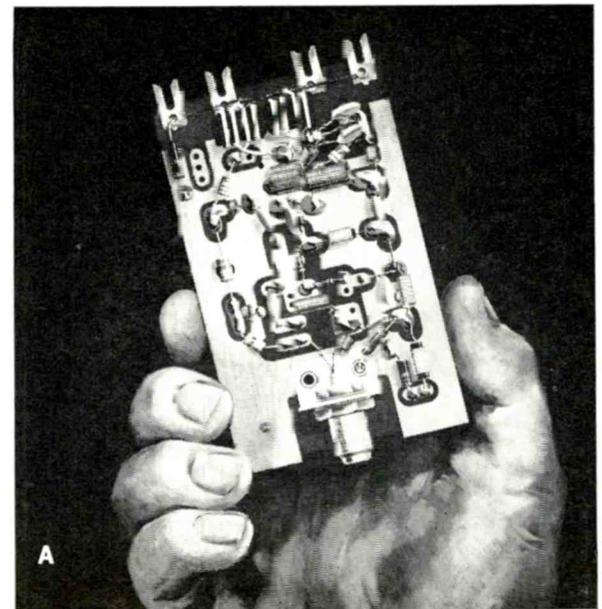
C



E



A



A

**Total Design FM Control Element:**

Exclusive FM element provides high gain on FM bands—and enables you to attenuate FM bands in areas where strong FM signals interfere with TV reception.

**(C) Total Design Cartridge Housing:**

Exclusive housing is an integral part of Super Colortron—built-in and permanent. Completely weatherproofed to protect solid state cartridge pre-amps and connections.

**(D) Total Design Ellipsoidal Boom:**

Exclusive boom is the first aluminum tubing shape engineered especially for antenna use. Proved far stronger than any other existing boom design.

**(E) Total Design Wrap-Around Insulators:**

Exclusive low loss dielectric insulators completely encapsulate and weatherproof elements and correlators at point of electrical contact. Hi-impact polystyrene. Provide perfect alignment of elements and eliminate sagging and loosening.

**Total Design**

**High Tensile Aluminum Elements:**

Exclusive aluminum alloy has PSI rating of 38,000 as compared to 27,000 PSI for alloys used in other antennas. More than 49% stronger—and 29% more resistant to bend and wind distortion.

**Total Design Wrap-Around Mast Clamp:**

Exclusive mast clamp has 4 pair of locking jaws (not just 2) to automatically align antenna on mast and for greater strength and durability. Requires only one U bolt.

**Total Design Gold Anodizing:**

Exclusive Gold Anodizing is the only permanent gold finish used on any antenna—the only positive protection against corrosion and fading.

**Total Design Assembly:**

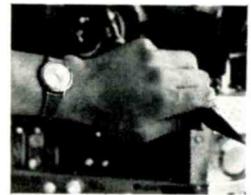
Exclusive construction makes the Super Colortron truly easy-to-install—unfolds in seconds—completely factory pre-assembled.



**Winegard**  
ANTENNA SYSTEMS

WINEGARD COMPANY, 3000 KIRKWOOD STREET, BURLINGTON, IOWA 52601

# OK, Watch Watchers!



## We want you to time your

## next service call

## with our watch!



Buy our Color Commander color bar generator. If it doesn't save you time, return the Color Commander within 10 days and keep the \$10.95 Timex.

What makes us so sure you'll save time? Amphenol's exclusive technique of color alignment. Only Amphenol gives you a:

1. Single cross bar that immediately centers the raster.
2. Single dot for fast, constantly accurate static convergence.
3. Three-bar color array that isolates your working bars—the 3rd, 6th and 9th.

### Your Time is Money

If you're spending 45 minutes on a color alignment job, the Color Commander technique can cut that to as little as 27 minutes. That could mean two or three more calls a day—\$24-\$36 more income. Result: The Color Commander could pay for itself in two to three weeks.

### Become an Amphenol Watch Watcher

Take advantage of this limited time offer. Cut out this coupon and beat the Watch Watcher rush. For the name of your nearest Amphenol distributor, write Dan O'Connell, Head Watch Watcher, Amphenol, Box 134, Broadview, Illinois 60153.



### Watch Watcher Special

Count me in on the Watch Watcher Special. I understand I will get a lightweight, compact, completely solid state Amphenol Model 860\* Color Commander along with a Timex watch to time my savings all for **\$169<sup>95</sup>**

Model 860AC \$20.00 higher\*

\*Suggested resale prices



# AMPHENOL

This editorial appeared in a recent issue of Radio-Electronics and has been picked up by many local association papers throughout the United States. We felt it had real merit and might be of particular aid to California dealers.

---

## FROM THE EDITOR

---

Forest Belt  
Radio-Electronics Magazine

# What Price Color?

How often do you hear the question: I wonder what it really costs to own a color TV? Do you ever try to answer it? Have you often wondered yourself?

The question is one of today's most common. No more is there the barrier of "few programs." NBC is transmitting 100% of its network shows in color, and CBS and ABC aren't too far behind. Almost 15% of all television sets in use are color. You can hardly find anyone anywhere who isn't vitally interested in or curious about color television.

So, how much *does* it cost? There are two approaches to a valid answer. Let's look at the cold-cash-outlay approach first.

A new color receiver in the 25-inch class, which is becoming a popular size this season, retails for \$500 to \$900, depending on the cabinet and chassis. So, take \$650 as a median price. An antenna, if one is needed, can add \$25-\$100 to the investment. A typical cost, installed, is \$55.

Then there's maintenance. Service charges vary so widely it's not easy to pin down a "typical" cost. However, there are fixed-cost annual service contracts, payable in advance; we can use one of them for a norm. One company's first-year contract sells for \$47.

Adding up all these costs, you find an average initial investment of \$752. That's the hard-dollar cost of owning a color-TV receiver, including the first year's maintenance. That's the amount a buyer must lay on the line or get from his bank or finance company.

In essence, this cold-cash approach answers the "How much?" question like this: For \$752 you get a brand new, working, wood-and-guts color set, a color-oriented bunch of fancy aluminum called an antenna, and a year's freedom from service-cost worries. Not a very inviting answer, but an answer nevertheless.

Thank goodness there's another approach to the question—one that's both more attractive and more meaningful. This approach demands a little deeper thinking, however.

Start with the cold-cash figure I already gave you: \$752.

Consider then the expenses for the next two years, mostly for maintenance. Second- and third-year service contracts average \$80 a year. Pretend the set will be thrown away after 3 years (it won't, but this way we avoid bothering about trade-in values). Overall cost, then, is \$912 for 3 years. Averaged out, that's \$304 a year, or \$5.85 a week.

For the final answer to the question "What price color?," figure just what you can get for \$5.35. Most families can find at least three good-quality color movies worth watching each week; cost to see— $\$5.85 \div 3 = \$1.95$ . Consider football, baseball, hockey, races, sports of all kinds; any real sports fan can find two or more of these contests any weekend, in color. Cost: \$2.98 apiece. Color TV babysitting, at 2 hours each weekday and 4 hours on Saturday (forget Sunday), would cost 42¢ an hour.

A most interesting point about these color TV benefits is that none of them conflict with each other in time, and therefore they can all be spread over the cost of a single color set. Considering that, if the owner gets no more from his color receiver than these three services, the cost (computed wholly on a time basis) nets out to a startlingly small amount. To watch two movies—say, "Cleopatra" and perhaps "Bridge on the River Kwai"—will cost 38¢ each (with attendance unlimited). Two ball games—maybe Michigan State vs. Notre Dame plus the Chicago Bears playing the St. Louis Cardinals—can be seen by as many people as the TV room will hold, for only 75¢ a game. Afternoon babysitting: 25¢ an hour. Throw in a few favorite soap operas, some daily quiz and game shows, an important documentary now and then, and a couple of early morning adult-education courses. You can easily build a case for the best entertainment bargain in any marketplace.

But no one looks at it that way, you protest. Why don't they? Those services are exactly what every color TV dollar is buying. Next time you hear someone ask "What does color TV really cost, now?"—tell them.

ALL CHANNEL PRODUCTS CORP.

*Rembrandt*

INDOOR-OUTDOOR ANTENNAS

ALLIANCE MANUFACTURING CO., INC.



ALLIANCE TENNA-ROTORS



**BLONDER-TONGUE**

CONVERTERS · AMPLIFIERS · COUPLERS · SPLITTERS



**BSR (USA) LIMITED**

AUTOMATIC CHANGERS



**CAROL CABLE COMPANY**

CORD SETS · WIRE · CABLE · WELDING CABLE

*Dry-R-X Products*

HOLE SAWS · VENT KITS

*ElectroVoice*

INCORPORATED

NEEDLES · CARTRIDGES · COMPONENTS



**PHILCO - FORD CORPORATION**

PARTS · TUBES · COMPONENTS · ACCESSORIES



**FINCO**

COLOR VE-LOG ANTENNAS  
VHF-UHF-FM ANTENNAS



**GC ELECTRONICS** Company

COLOR MAGIC ANTENNAS  
CHEMICALS · TOOLS · HARDWARE · ACCESSORIES



FLASHLIGHTS · BATTERIES



**SENCORE, INC.**

TEST EQUIPMENT



*Components Specialties, Inc.*

UNIVERSAL MINIATURE & SUB-MINIATURE CONTROLS



**SPRAGUE ELECTRIC COMPANY**

CAPACITORS · RESISTORS · FILTERS



**TENNA CORPORATION**

REVERB UNITS · ANTENNAS

Here are a few of the more than 50 famous brands stocked by your Philco Distributor.

One Stop Shopping  
at your Philco Distributor's  
saves you precious time,  
spelled M·O·N·E·Y



PHILCO . . . . . THE SERVICEMAN'S FRIEND FOR 38 YEARS

PHILCO PARTS STORE  
6393 E. Washington Blvd.  
L.A. 22, RA 3-0345

PHILCO PARTS STORE  
6150 Mission Gorge Rd.  
San Diego, 283-6545

PHILCO PARTS STORE  
701 Sixteenth St.  
San Francisco, MA 6-1717

PHILCO PARTS STORE  
1891 W. Roosevelt St.  
Phoenix, AL 8-3965

# The Future Belongs To Those Who Prepare For It....

This the first of four parts of an article written by Morris L. Finneburgh, Sr.  
The remainder of the article will appear next month in ESD.

Morris L. Finneburgh, Sr., is a remarkable individual with a more remarkable philosophy. He is probably better known than any other figure in the Television Service Industry and is called on regularly as a speaker, writer or teacher.

Recently, Mr. Finneburgh has written what we like to call the "10 Commandments of Success." In our opinion they are an outstanding outline to business success and we have asked permission to re-print them in ESD. We will begin with what he calls... "The Philosophy" and publish the first five commandments. In the next issue of ESD we will publish the second half of these and sincerely hope our readers will both enjoy and benefit from this effort.

## ... "The Philosophy"

Perhaps more has been written on "Success" than any other state of human attainment. The formula is definite... "Hard work and application"... yet the combination is elusive and indefinite as the varied ambitions of man.

A business life is usually made up of many small attainments, a few big accomplishments, and a liberal sprinkling of failures. Success is not a fixed or stationary thing. It must be constantly cultivated in order to survive. It knows no season, no handicaps, no effort too much or too long, and can disintegrate rapidly unless the spirit to do... and do better than you have done... is kept alive, as the never quite reachable goal.

In the Service Dealers highly specialized field, success can only be attained by becoming a Recognized Electronics and Television Authority.

Equally important It is mandatory that we exercise the basic fundamental principles of good business management... We must have more than a casual understanding of Advertising, Sales Promotion, and Customer Relations. It surely would not hurt our cause to be a reasonably good psychologist sprinkled with a goodly potion of philosophy.

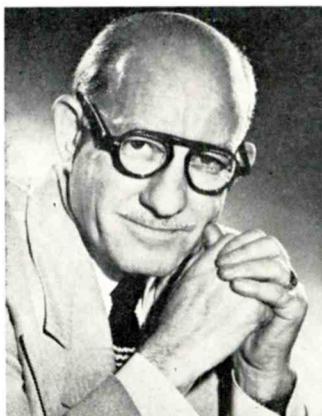
Too Tough? Too much work and thought?... Well, there is an answer... (Be it acceptable or not rests in the individual.) It is this simple:

"Is there anyone among us that desires "SUCCESS" less than to put all of his Talent and effort into the cause? If so... let him give up the ghost now!"

The Successful Dealer and his Technicians create this "dedicated effort and enthusiasm"... with a complete DISRESPECT for the "Price Buyer." He is the culprit that has caused the now popular phrase "Profits Prosperity." He is merely the ghost of a false assumption coupled with a weak sales presentation. Price Buyers? There are very few! But there are thousands of "Price" Salesmen, "Price" Shop Owners, "Price" Technicians, "Price" Manufacturers, and "Price" Distributors! Remember—no one can blame the buyer if "We" think in terms of "Price" instead of *quality, service, and reputation*. He (the Buyer) will purchase *good* service at good prices if the manufacturer, the jobber and the service-dealer phases of the TV industry do a collectively good job of SELLING quality, service and reputation!

We believe that now is the time for all of us to take "Mental Inventory" of our daily habits, activities and accomplishments. We must be and do better than "the average," or we shall perish in the RAZOR SHARP COMPETITIVE business swirl of tomorrow! The best will never be too good for the buyer, and thus a little extra effort in presenting your product, your service and your ethics to your customer will pay big dividends. At no time... past or present... has there ever been greater need for all of us to take careful and serious inventory of our qualifications for BUSINESS SURVIVAL. Each day there are greater opportunities for growth, expansion and profits... But the obstacles, the pitfalls, and the possibility of failure have grown commensurately. The stakes are good, but HIGH!

We can be indifferent and possibly just get by, or we can work intelligently and be paid more and more... in keeping with our productivity... Definitely there ARE no restrictions on enthusiasm, ability, and ingenuity. Our children can AND SHOULD begin where we leave off... to do more and live better! What has all this to do with you and me? Just this... (Continued Next Page)



## ... About the Author:

Morris L. Finneburgh, Sr. is Chairman of the Board of the Finney Company, Bedford, Ohio manufacturers of FINCO antennas and antenna components. He is Permanent Chairman of the "All Electronic Industry Speaker's Bureau." Rated as one of the Nation's most talented Public Speakers and a leading exponent of dramatized salesmanship, Mr. Finneburgh probably has contributed more time and effort toward the development of greater profits, higher individual incomes and better merchandising at the Distributor and Service Dealer levels of the Electronic Industry than any other executive in the field. Known as a non-conformist... his colorful address entitled "The Future Belongs To Those Who Prepare For It," coupled with the now famous FINCO Bronze Medallion, is widely acclaimed as a forceful and most serious challenge to the manufacturer, the distributor and the dealer.

## THE FUTURE BELONGS TO THOSE WHO PREPARE FOR IT . . . Continued

Our collective business objective is to do the best possible job of meeting our responsibilities . . . free enterprise is a blessing which allows us to study . . . to learn . . . and to fight for every dollar's worth of business profit potential. If you and I fail to get our share, or even MORE than our share . . . it is OUR FAULT, as each of us holds within himself the key to individual success, independence, and security.

They say we are fighting a war on foreign soil to protect the "future" of Democracy. . . . I believe we are also fighting this same war of "*Democratic Survival*" in the conduct of our personal affairs and in our Businesses. Questionable business tactics, inertia, and the lack of "guts and fortitude" . . . can easily tarnish the escutcheon of a dealer and his personnel. If we want fewer Federal Government controls, continued freedom of enterprise and the right to work and do as we see fit . . . Then, the price of these blessings must necessarily rest in our appreciation not only of our own interests . . . but equally important . . . in our willingness to say, "No" when "No" it should be! . . . and to respect and be respected. We would like to see a more firm coherence of "*togetherness*" in overall "*Electronic Industry*" effort to build greater Dignity, more realistic credit and financial supports, and greater profits.

Every manufacturer, distributor, service dealer and salesman in the electronic industry should, in his own success formula, recognize the vital significance of Three important words:

*PREPARATION*: (*Planning for tomorrow — thinking ahead!*)

*DETERMINATION*: (*To stay with it—Not be swayed from logic!*) . . . and . . .

*INSPIRATION*: . . . That certain "something" that comes to those who know not the stigma of "*ME, TOO!*"

Your future and your potential success is, in the final analysis, "all there is—There Just Ain't No More." . . . so "Think" for it . . . "Do" for it . . . and if necessary, "FIGHT" for it!

### Subject #1 . . . Preparation

Preparation is the first and one of the three most important words in the planning of man's future. It is the start . . . the beginning!

At any given time, everyone is somewhere along the road to success, status quo or failure. Yet, it is never too late to "START" a new program of preparation. This, we believe to be true because no man has ever reached, or even nearly reached, a state of perfection.

In "SALESMANSHIP" it means planning your daily, weekly, and even monthly activities in advance. Don't say it can't be done! . . . It most surely can . . . and the plan can be easily altered to fit conditions and changing times without damaging penalty, if there is a will and desire to do so.

Possibly the most descriptive proof of the value of a well thought out plan of action is to realize that to build either an Outhouse or a Castle, you would, by necessity, start with the first brick. Now some smart Wag is sure to say "suppose we don't use bricks???" Regardless . . . it is elementary that without a good foundation, no structure (material, physical, or mental) can long stand. It applies to all of us, whether we be Butcher, Baker, or Candlestick Maker, and, more especially, if we are involved in SALES and the development of Customer Confidence and Buyer Loyalty.

Planned customer contact, developing a logical point by point presentation, knowing when to stop selling and when to start writing up the order . . . means the saving of pre-

vious time . . . and Time is our most valuable possession.

Without the "PREPARATION" of an effective working plan and its subsequent application . . . man can be likened to a staircase with the first few steps missing . . . pretty difficult to reach a safe landing!

### Subject #2 . . . Determination

Determination (the second important word in the sequence of our story), simply means that once you have established a working plan—Do not become discouraged—Do not "Give Up"—Do not yell too quickly for help, because the first place to look for a "HELPING HAND" is at the end of your own arm!

Just ask the Fuller Brush Man. He'll tell you that if you knock upon enough doors, a fair percentage will open up for you.

What we really are trying to say is that in any endeavor, electronic sales or otherwise, there must be a definite degree of persistency and consistency of effort, as well as exposure to your prospects and customers.

Remember!—In the continuing struggle for SUCCESS—There is NO TIME TO LOSE; Only TIME TO WIN—So stay with it! The intensity of determination will be reflected in your accomplishments.

### Subject #3 . . . Inspiration

The third word is INSPIRATION! It is the most difficult to interpret in relation to SALESMANSHIP and PRODUCT PRESENTATION.

Artists, Musicians, Speakers, and even famous Chefs are often referred to as being inspired when they Draw, Write, Speak, or Cook something of a rare and outstanding nature. So—why not the Salesman?

We know from experience that one CAN become DEEPLY INSPIRED through the dramatization of product—product design—product quality—product performance—product value—product warranty. It becomes a matter of dedicated service—a worthwhile contribution to a customer's welfare—be it through his earned profit or product usage.

The fact that YOU are building PERSONAL as well as COMPANY prestige, respect, stability, patronage, and profits is certainly more than enough to unleash that ETHEREAL SOMETHING that makes you tingle when a "MUTUALLY GOOD DEAL" is consummated—and a mutually good deal is mandatory if we are to build for the FUTURE!

Inspiration is the force that drives man towards greater achievement.

### Subject #4 . . . Success or Failure?

A great difference? . . . Why of course . . . But ONLY in the end results! Not necessarily is there a great difference in the qualifications of the individuals. We do not believe that there is a vast difference in the basic qualities of a successful man as against a man who has failed. Granted, if you look at the extremes . . . yes . . . the difference is usually marked and recognizable. But we are not talking about "extremes," we are talking about the average man.

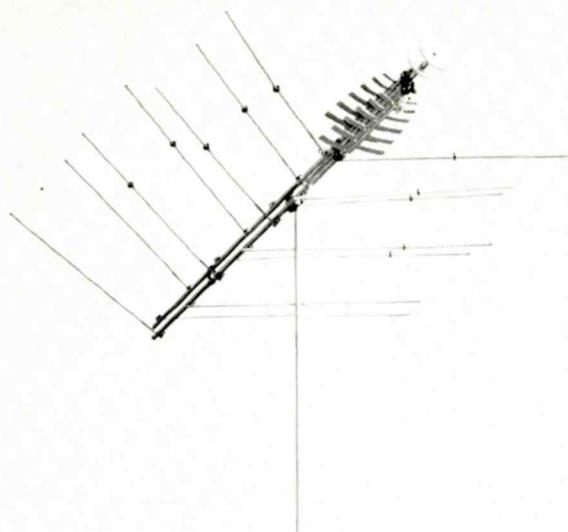
Giving full credit to acquired knowledge and education as well as the possible lack of "learning" we still contend that HARD WORK and APPLICATION, all too often, are the real common denominators that spell the difference between Success and Failure.

What is easy for you, may be hard for me, or vice versa, but CONTINUED EFFORT and DOGGED TENACITY can place within the reach of the vast majority a far better than even chance to be a winner in any profession.

It can be said in eight words: NO MAN IS DEFEATED UNTIL HE ACKNOWLEDGES IT. The disheartening fact is that too many . . . Too easily . . . do!

(Continued Next Month)

New All-purpose  
JFD-UHF/VHF/FM  
Antenna



# A NEW APPROACH TO THE 82-CHANNEL ANTENNA

JAMES SARAYIOTES

JFD Electronics Co.

Ever since Popov put up the first sky-wire in the 1890's, scientific research workers and practical designers have been trying to improve the antenna. And their work is important. No matter how good your TV or communications equipment may be, it's worthless if you can't give it a signal.

Several successful types of communications antennas have been worked out: arrays of tuned elements, parabolic reflectors, horns. But television poses special problems: the antenna must be directional; it must be (fantastically) broadband; it must be sensitive. And above all it must be low-priced. Few people are going to pay more for their antennas than for their TV sets.

Let us look at some of the problems. The antenna must pick up a band of frequencies extending from 54 to 88 MHz (in many cases up to 108 MHz, so it can be used as an FM antenna.) Then it must cover another range from 174 to 216 MHz. After that, the same antenna (or one working closely with it) must tune in a band of signals from 470 to 890 MHz.

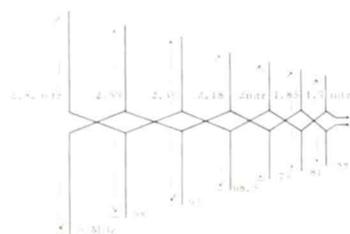


Fig. 1—A typical log-periodic array for television channels 2 to 6.

That is not all. It must be highly directional and able to shut out signals from the back and sides. Ideally, its response should be perfectly flat over all ranges, and practically it must not tilt noticeably over any 4-5 MHz portion — the color TV signal is wider than the old black-and-white, and very sensitive to signal strength differences in its channel.

It would seem that an antenna to fill all these requirements would be a theoretical impossibility. But such an antenna is an economic necessity, and actually has been approximated through a number of approaches.

One attempt to make a broadband array was to make up an antenna from a number of elements (dipoles for example), to make each element resonant to a somewhat higher frequency, then so connect the elements that their outputs would add in phase. Looking at that approach, researchers discovered that as the length of the elements was increased or decreased, the reception pattern and impedance would repeat periodically at lower or higher frequencies. These lengths could be related to each other by a simple number, related not directly to the length of the dipoles, but to the logarithm of that length. (This is much the same as a factor related to the square root of a series of numbers or quantities.) Because of this periodic replication of antenna characteristics, the antenna so designed (Fig. 1) was called *log-periodic*.

The log-periodic antenna was adapted for television broadcast reception by the JFD Antenna Research and Development laboratories in Champaign, Ill., under the direction of some of the men who developed the basic log-periodic concept originally.

## The LPV Concept

Because the VHF TV band is divided into two sections, one from 54 to 88 MHz, the other from 174 to 216, it was necessary to combine elements for both bands in the same antenna. But an interesting thing happened. Some of the dipoles in the low-band section contributed to reception over part of the high band. A half-wave dipole at 60 MHz, between channels 2 and 3, becomes a three-half-wave dipole at 180 MHz and thus helps reception on channels 7 and 8. This makes the antenna more sensitive. But since the three-halfwave reception pattern consists of two broad lobes, that increase is offset by loss of directivity. Dr. Mayes of the University of Illinois conceived the idea of bending the elements forward in the form of a "V" to make the two lobes overlap each other (Fig. 2-a&b). This increased directivity and sensitivity at the same time, and the *Log-Periodic V* antenna was born.

(Continued Next Page)

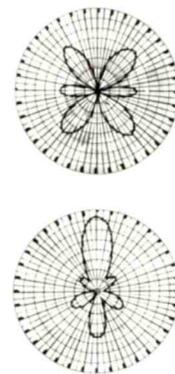


Fig. 2-a—Polar pattern of dipole acting as three-half-wave antenna. 2-b—Effect of bending the elements forward in V-style.

# ORIGINAL



FACTORY  
REPLACEMENT  
PARTS  
FOR T.V.  
& RADIO

- DELCO AUTO RADIOS
  - RCA
  - ZENITH
  - GENERAL ELECTRIC
- PLUS—THE BEST LINES  
OF GENERAL  
REPLACEMENT PARTS



## ANDREWS

ELECTRONICS  
1500 W. BURBANK BLVD.  
BURBANK, CALIF.  
TH 5-3536 ST 1-3120  
VI 9-6014

### A NEW APPROACH TO 82-CHANNEL ANTENNAS

(Continued)

The Log-Periodic V was improved later by increasing the number of low-band elements that would act as three-wave dipoles in the upper band. This was done by lengthening them physically and then shortening them electrically by inserting capacitors in them (Fig. 3).

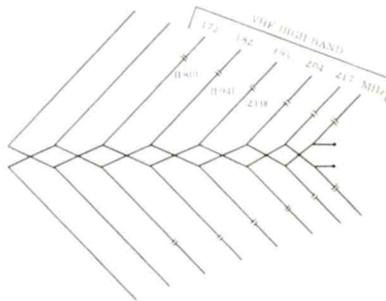


Fig. 3—Capacitors shorten the dipoles electrically on the low band, while not affecting them as much as the high band. Capacitor-loaded dipoles therefore resonate at a lower frequency than three times the low-band figure. Resonant frequencies without capacitors are shown in parentheses.

The effect of the capacitors is, of course, greater on the low band. (Thus a dipole with a three-half-wave resonance at 204 MHz can be tuned up with capacitors to be a half-wave dipole at 83.3 MHz, where without the capacitor a dipole of the same physical length would resonate at about 69 MHz.) Thus five of the dipoles in the 8-element antenna of Fig. 2 are useful in both the high and low VHF TV bands, where without capacitors three would be the maximum number that would work in both bands.

#### The UHF Section

The log-periodic principle worked well in the UHF band, but the smaller elements meant less signal pickup. Directors were added to increase signal strength. This brought its own problems. The Yagi-like rod directors were essentially narrow-band devices, even when their diameter was made large relative to their length. Since the UHF band covers almost a two-to-one range, directors could be useful over only a small part of it. Another problem was that the horizontal rods further sharpened up the horizontal polarization of the array. This was not good, since UHF signals — especially if they arrive from any distance — often depart quite a bit from the horizontal.

In the search for improved bandwidth and signal pickup, the laboratory investigated another member of the family to which the log-periodic antenna belongs: the *circular tooth structure*. Its electrical characteristics were excellent, but its mechanical construction was not adapted to home receiver use. Dr. D. E. Isbell found, however, that it could be

flattened and folded back on itself to make an antenna adapted to mast mounting. The resulting *trapezoidal tooth* structure, Fig. 4, is the fundamental design of the JFD UHF antenna.

The flat plate rather than wire or rod construction of the JFD UHF section makes for excellent broadband reception. The design also lends itself to a cast plate construction, making an exceedingly rugged and reliable unit in comparison with older designs using rod elements.

#### The Disc Directors

Next thing to receive attention was the director problem. Government agencies had been using an antenna in which both driven and director elements were discs, and which was both highly directional and broadband. An attempt to adapt this type of antenna element to UHF TV use revealed that it was, indeed, the answer to the UHF directivity problem. And it brought some additional advantages as well.

The disc can be thought of as a rod broadened out in the upper and lower direction, but remaining the same length (horizontally). In the process, the ratio of diameter to length increases tremendously, increasing the bandwidth with it. The capture area also increases with the increase in the surface of the element, picking up correspondingly more signal.

Another characteristic of the disc director is that it boosts the signal at the end of its range, supplying more signal at the top of the UHF band where it is most needed. In addition, it responds equally well to waves of any polarity, thus helping to improve the strength of signals whose polarization has departed from the horizontal.

Added to the trapezoidal tooth collector, the disc director makes a combination that approaches the perfect UHF antenna. And when that combination is added to the newest LPV VHF unit, the result is an all-channel TV antenna that will take a great deal of research and experimental work to improve.

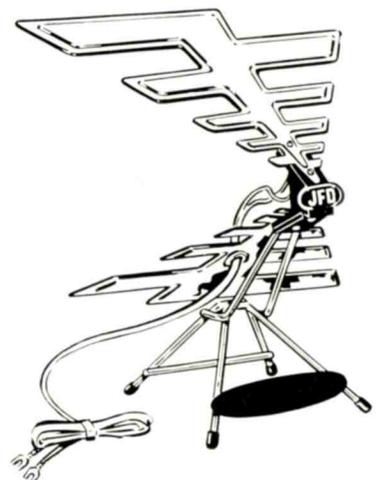
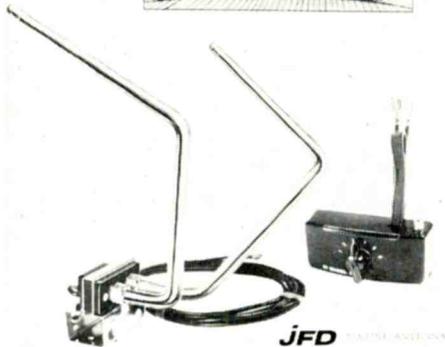


Fig. 4—How the trapezoidal tooth array can be made from the circular structure.

ELECTRONIC SERVICE DEALER



### MARINE ANTENNA FOR TV AT SEA OFFERED BY JFD ELECTRONICS CO.

A specially designed antenna to bring "living room TV" reception on all channels to cruising and anchored pleasure boats has been announced by JFD Electronics Co., Brooklyn, N. Y., world's largest manufacturers of TV and FM antennas and accessories.

Called the JFD Marine TV Antenna, it is supplied with a versatile marine mounting bracket which permits side or top mounting on any horizontal or vertical surface of the boat. Special features are built-in to make it seaworthy as well as cruising TV-worthy.

The JFD Marine Antenna is an offset, omni-directional V-dipole unit that pulls in clear pictures on all channels from all directions. It works with practically every portable TV set. It can be installed and detached in minutes and stowed away on any craft, large or small.

Maximum signal aboard is produced through a six-position clarifier. Interference from ignition and motor is suppressed by a 25-ft. shielded coaxial cable. Rugged triple chrome-plated brass construction eliminates corrosion and withstands severe weather conditions.

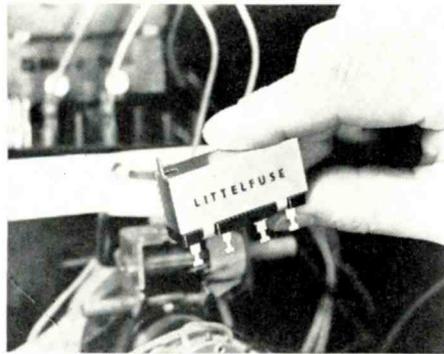
### G.E. INTRODUCES NEW COLOR RECEIVING TUBES

General Electric's Tube Department has introduced four new compactrons for color television receivers.

The 6KD6 and 40KD6 are compactron

beam-power pentodes primarily designed for use as horizontal-deflection amplifiers in color TV sets. The 6CG3 and 25CG3 are their respective "teammates"—compactron damping diodes containing a single heater-cathode diode.

The 6KD6 and 40KD6 will provide peak scanning large-screen color picture tubes at 25 very low plate voltages for efficiently scanning large-screen color picture tubes at 25 KV from B+ supplies of 280 volts or lower. They are rated at 30 watts plate dissipation and 5 watts screen grid dissipation which allows their use in self-regulating type systems as well as shunt regulated systems. In addition, both of these tubes have controlled warm-up heaters at 450 milliamperes for series string use.



### LITTLEFUSE DEVELOPS DEGAUSSING SWITCH

A new automatic operating degaussing switch that eliminates annoying picture blurs and color distortions in color television sets has been developed by Littlefuse, Inc., maker of circuit protection devices and switches in Des Plaines, Illinois.

The new switch is said to be the answer to the blurs and loss of true colors on tv picture tubes that are the effects of residual magnetism that builds up on the shields which surround the picture tubes. The buildup of residual magnetism may be caused by household appliances in close proximity to the set, children's toys, such as electric trains and battery operated cars, and by on or off switching of the color set itself.

To restore true image and colors of the television picture, the residual magnetism built-up around the picture tube has to be eliminated. In earlier and many present day color tv sets this demagnetizing action was accomplished by complex electronic circuitry or by a manually operated push-button device

located at the rear of the set. Each time the set was turned "on" the device had to be manually actuated. The Littlefuse degaussing switch now makes this operation automatic.

The Littlefuse degausser switch is an automatic, trouble-free, compact (1 $\frac{3}{4}$  by  $\frac{3}{4}$ " by  $\frac{1}{2}$ " unit calibrated to close electrical tolerances. The switch is fully enclosed in a heavy gauge metal with solid, molded phenolic base. The switch has four cadmium plated terminals for printed circuit board mounting or soldering into the television receiver. It is designed for quick, easy installation. One switch will fit most color television sets.

### NEW LINE OF TV-FM WALLPLATES AND PLUGS INTRODUCED BY SLATER ELECTRIC

A line of combination TV and FM wallplates, incorporated the exclusive StA-Kleen design feature, has been introduced by Slater Electric Inc., Glen Cove, N. Y.

The new wallplates combine distinctive design and quality construction in an attractive and functional unit, according to Martin Schwartz, Slater's Vice President-Marketing. The TV and FM devices incorporate receptacles recessed in flush mounted wallplates, providing a slim compact installation. A TV and FM plug is key to fit the receptacle, permitting easy connection to receivers. The plug attaches to the connector line in seconds without soldering, providing a permanent installation and insuring proper polarity. The devices fit either new or existing installations.

Slater TV and FM receptacles are available in six different configurations: single and double gang, single and double gang with one duplex outlet, architectural face single gang and double gang with one duplex outlet. They are designed in five decorator colors: Ivory, Brown, Gray, Tan, and White, to complement the decor of any room setting.

Until recently, two separate antennas were required for a modern 82 channel TV set — one for UHF and one for VHF.

Several manufacturers, however, are now marketing 82 channel antennas. But there is still a problem. The output of an 82 channel antenna is a single twinlead or coaxial cable. Yet an 82 channel receiver requires two inputs — one for VHF and one for UHF.

## NEW PRODUCTS

(Continued)

### Channel Master Adds 2 Multi-Band Radios

The Channel Master Corp., Ellenville, has announced two multi-band portable solid state radios, one, a six-band model (6437, and the other (6436) a four-band model. Both models include FM and AM bands and operate on batteries or an accessory AC adaptor-charger.

In addition to the AM /FM broadcast frequencies, the six-band set covers long wave (150 to 400 kc; short wave bands (4.0 to 10 mc and 10 mc to 18 mc), and marine (1.7 to 4.2 mc).

The four-band model, shown here, covers the marine band (1.8-4.7 and the 5.0 to 12.0 mc short wave band in addition to AM and FM.

### NEW SWITCHCRAFT SHORT-FORM CATALOG AVAILABLE

Switchcraft, Inc., Chicago, has announced a new edition of its Short Form Catalog No. 67 containing condensed descriptions, plus illustrations, of every electronic component stocked by Switchcraft's nationwide network of Authorized Industrial Distributors.

The catalog contains 25 pages and its purpose is to provide engineering personnel with a ready reference to Switchcraft plugs, jacks, switches, connectors, molded cable assemblies, adapters and audio accessories available for off-the-shelf delivery at factory prices.

Short Form Catalog No. 67 is available by writing: Switchcraft, Inc., 5555 North Elston Avenue, Chicago, Illinois 60630.

### NEW SILICON NPN TRANSISTOR AVAILABLE FROM IR

A new silicon NPN transistor for UHF application has been introduced by International Rectifier, El Segundo, California. Addition of the new device expands IR's line of replacement transistors to 24. Packaging for the new device will be compatible with all of IR's merchandising programs.

Don Prescott, Manager of IR's Distributor Division, explained that the transistor, designated TR-24, is specifically engineered for general replacement use in UHF-TV oscillators, FM converters, and general commercial applications operating in the 100MHz

range. "Addition of the TR-24," Prescott stated, "emphasizes that IR's line of universal transistors is the most placement devices available to the independent dealer-serviceman."

The device will be available after March 1, 1967, Prescott said. He added that replacement information and technical specifications for the entire line of 24 transistors will be included in the 1967 issue of IR's perpetual cross-reference book.

### NEW ITEM PREVENTS VOLTAGE SURGE DESTRUCTION

Voltage surge destruction in color TV sets can now be prevented with a new product designed and manufactured by Workman Electronic Products, Inc., Sarasota, Florida. Model TG2, tube guard, U. S. patent #2675503 will absorb the shock of 600 watts that damage tube filaments and component parts. When set is first turned on, tube guard, acting as a rheostat, feeds current in slowly while parts are warming up.



### DELUXE COLOR GENERATOR INTRODUCED RECENTLY

A new deluxe color generator featuring an automatic timer heating element and movable single dot and single vertical line patterns has been announced by Sencore. Compact and completely portable, the CG141 "Color King" is AC operated and solid state throughout.

The automatic timer heating element is thermostatically controlled to maintain a minimum operating temperature of 80 degrees. This assures the most favorable temperature inside the case, and eliminates instability caused by weather changes whether the outside temperature is 20° below zero or 140° in the shade.

The new movable single patterns, a Color King exclusive, make it possible to follow the set manufacturer's convergence recommendations to the letter, without the confusion sometimes caused by multiple lines and dots. The

single dot and single vertical and horizontal line patterns can be positioned at any point on the CRT screen.

To compensate for component gain, timers are readily adjustable like the horizontal and vertical holds on a TV receiver. All adjustments are located on the front panel under the hinged pattern strip, for readily accessible fine adjustment of each channel, timer controls or dot size.

Additional features of the instrument include interlace control to stop dot bounce, snap tuning of channels 2 through 6 at the flip of a switch, all standard patterns, color gun interruptors, and positive or negative picture phase 7 volts peak to peak to drive the latest sets.

The unit is housed in a mar-resistant vinyl-clad steel case with removable protective lid. A plate glass mirror is shock mounted in the lid for convenient set-up and convergence in the home. Price of the unit is \$149.95. Sencore, Inc., 426 South Westgate, Addison, Illinois 60101.

### NEW RC-25 RECEIVING TUBE MANUAL ANNOUNCED BY RCA

The latest edition of the RCA Receiving Tube Manual (RC-25), which continues as a complete and authoritative reference in the electronics field, was announced last month by RCA Electronic Components and Devices.

This data-packed manual provides up-to-date information on the complete RCA line of home-entertainment type receiving tubes, picture tube for black-and-white and color television receivers, and voltage-regulator and voltage-reference tubes.

A feature of the new manual is a revised circuits section which includes detailed descriptive writeups of the many practical tube applications shown. These writeups explain the function and operation of individual stages and complete circuits to aid in their understanding and construction by students and experimenters.

The 608-page RC-25 also includes new text material on basic system functions, tuned amplifiers, wideband (video) amplifiers, and television scanning, sync, and deflection circuits. As in the past, the revised augmented text chapters are illustrated and written in an easy-to-understand style.

Copies of the new RCA Receiving Tube Manual RC-25 may be obtained from authorized RCA Tube Distributors throughout the U.S.A., or by sending \$1.25 to Commercial Engineering, RCA Electronic Components and Devices, Harrison, N.J., 07029.

## Color TV Set Sales Up 36% in 1967, EIA Figures Indicate

Washington, D.C.—The Electronic Industries Association has released figures that indicate that distributor sales in color television sets to dealers during the first four weeks of 1967 ending January 27 were up 36 per cent from year-earlier figures.

However, distributor-to-dealer sales of black-and-white sets were down 38 per cent from 1966 for the first four weeks.

Distributors sold 95,000 color sets during the week ending January 27, compared with 80,000 during the corresponding week of 1966. For the first four weeks of this year, ending January 27, distributor-to-dealer sales of color sets totaled 314,000 color receivers, compared with 231,000 last year.

Black-and-white set sales for the first four weeks this year totaled 401,000 units, compared with 650,000 last year.

Distributors sold a total of 675,000 home and portable radios in the first four weeks of this year, compared with 331,000 last year.

### Portable Table Phonos Up

Distributor sales of portable and table phonographs during the first four weeks totaled 247,000 units, compared with 196,000 last year, an increase of 25 per cent. However, distributor-to-dealer sales of console phonographs were down 29 per cent for the first four weeks—from 156,000 last year to only 110,000 this year.

Phonographs during the first four weeks totaled 247,000 units, compared with 196,000 last year, an increase of 25 per cent. However, distributor-to-dealer sales of console phonographs were down 29 per cent for the first four weeks—from 156,000 last year to only 110,000 this year.

Total unit sales of phonographs during the first four weeks of this year reached 357,000, compared with 352,000 last year.

## TECHNICAL SALES ASSOCIATES REP FINCO IN NORTHERN CALIFORNIA

Bedford, Ohio—The full line of FINCO products: antennas and electronic components and accessories, are now

represented in Northern California by Technical Sales Associates, according to an announcement made by The Finney Company, Bedford, Ohio.

The well established electronic manufacturers' representative firm, Technical Sales Associates, headed by Herbert W. Solmsen, in adding the FINCO line offers to parts distributors in the area a well supported line of electronic products. With a background as a distributor field salesman, as well as a manufacturers' representative in the area, Mr. Solmsen personally offers an unusual understanding of distributor needs and problems.

## BURNETT OF RCA PREDICTS '67 RECEIVING TUBE SALES WILL EXCEED '66 RECORD

Cincinnati, Ohio—The electronics industry will reach a new production high of nearly 500 million receiving tubes during 1967, C. E. Burnett, Division Vice President and General Manager, RCA Solid State and Receiving Tube Division, predicted recently.

Mr. Burnett said that the new production record will exceed the 1966 industry output by almost 50 million units. The previous peak year, he explained, occurred in 1955 during the black-and-white television set boom.

The RCA executive stated that the explosive popularity of color television has generated the tremendous demand for receiving tubes.

Mr. Burnett also reported that a banner year is ahead for transistors, integrated circuits and other solid-state devices.

## TV Repairmen Raise Fees Shorten Week

San Mateo, California—Television repairs are going to cost 20 per cent more in Marin and service will no longer be available on Mondays, the Television and Electronics Association of Marin announced.

Association president Alton E. Cox said the higher prices and reduced work week were to prevent the flight of television repairmen to other industries.

"They just won't put up with a six-day week any more," Cox said. "They hear other electronics technicians talk about working for high wages from 8:30 to 4:30 for good pay and not having to hear the customer's gripes, and they leave us."

Cox said his chapter of the state association represents 17 of the 22 repair shop owners in Marin, and that most of them have "lost one or more of their top technicians within the last year."

Effect of the roughly 20 per cent hike in labor charges will raise the average cost of repairs for black and white sets from \$25 to \$30 and color sets from \$35 to \$40, he reported.

On a house call, the labor charge goes up from \$7.50 for the first 20 minutes to \$9.50, and from \$2 per quarter-hour thereafter to \$2.50, Cox said.

Labor charges in the shop which have been \$8 an hour rise to \$12.50, the association president said.

The increases, Cox said, are in line with those throughout the state, but still lag behind labor costs in Southern California.



The Winegard Company recently introduced their new line of antennas at a special west coast show held in Los Angeles. Distributors came from all over the west but shown here are Mike Sweaney of Winegard pointing out the new packaging of the firm to Irv Tjomsland of Hurley Electronics. In the picture at the right is Bud Ashpole of Winegard talking over the new line with Bob McLean, V.P. Gen. Mgr. of Dunlap Electronics.

## Solid State Color Signaled For 1968 Major Lines

Des Plaines, Illinois—In an address before the annual meeting of the Motorola Semi-conductor Specialists group, Mr. D. E. Lester Hogan, V.P. of the division, stated that by 1970 there will be no current production of television sets that are not solid state. This prediction is far ahead of general industry forecasts but places more attention on the rumors that Motorola will introduce major solid state color sets in next year's line.

## 50% Jump in Color Ownership in 5 Years Predicted By Douglas

Atlanta, Georgia—John J. Douglas, executive V.P.-finance for General Telephone, predicted last month that by 1970 60% of the American homes will have color television sets.

Speaking before the Atlanta Financial Analysts, he stated that the present estimate of ownership is around 10% and that this boom in sales will make anything in the past look sick by comparison.

## GOVERNMENT RENEWS NEA/OJT PROGRAM

The National Electronic Associations, Inc., has been awarded a contract extension by the U. S. Department of Labor to continue promotion of apprenticeship training projects for Electronic Technicians (Radio and TV).

This contract extension increases NEA's total promotional contract funds from \$29,809 to \$39,535. Completion date of NEA's first USLD contract will now be July 31, 1967.

Local area contracts have been approved for training and upgrading training in Detroit, Michigan; Akron, Ohio; Des Moines-Waterloo, Iowa; and Indianapolis, Indiana, totaling 180 men, under terms of NEA's original contract.

New local contracts are being processed in Hartford, Connecticut; South Bend and Evansville, Indiana; Columbus, Ohio; Wichita, Kansas; and Louisville, Kentucky for 120 more trainees.

Coupled programs are finding greatest favor in the technician associations, generally calling for 16 weeks of classroom study (640 hours) followed by 16 weeks of on-the-job training. All training time is counted as a portion of the total 4 year apprenticeship program, which in-

cludes an additional 144 hours of related instruction in the following 3 years and 20 weeks.

Interest in this MDTA authorized training program is such that NEA officials contemplate expansion of the National Training Program in most areas of the nation within the year.

Mr. G. C. Barkoukis, Akron, Ohio remains as NEA's OJT Field Coordinator. Mr. Richard Glass, Indianapolis, Indiana, remains in charge of the training project as NEA Apprenticeship Committee Chairman and National Director of Training.

## RCA Will Introduce Brighter Color Tube

The Radio Corp. of America is reported to have in the works a new color television picture tube said to be substantially brighter than other tubes now on the market.

It is understood that the new tube, in several sizes, will become available to TV set manufacturers for their new 1968 lines to be introduced during the late spring and summer months.



**Helps stop ghosts!**

**Zenith Quality Wavemagnet® Indoor TV Antenna**

Designed for finest all-channel (2 to 83) reception in color or B&W. Special network provides stepped-up basic dipole impedance, resulting in lower voltage standing wave ratio than ordinary VHF indoor antennas . . . cuts down snow, reflections and ghosts. Two full-size UHF loops, one behind the other, develop an unusually high front-to-back ratio (equal to that in many outdoor antennas), remarkably reducing ghosts and man-made interference. Order as Part Number 973-56 from your Zenith distributor!

*Built to the quality standards of Zenith original parts*

**ZENITH**

*The quality goes in before the name goes on*

# What To Look For Before Taking Self-Certification Examination

In the past 9 months since NEA certification test have been administered in several states, questions have arisen from many areas as to what the technicians are lacking in theory and experience and from this, what subject can potential examinees do well to brush up people and manufacturer service training reps also have expressed interest in the findings of the C.E.T. program, hoping to orient their own training sessions into a direct of maximum usefulness. Also, local and state associations of electronic service technicians have been interested for purposes of upgrading and apprenticeship training projects.

We will not attempt to cover all of the areas where many test applicants have missed questions, because the current NEA Test covers a lot of ground. (And this is an interesting point the test shows in itself—that the knowledge a technician must have to merely hold his own in this business is a formidable amount. Instead we will list some of the areas where misunderstanding is common, and hope to work up additional reports in upcoming weeks covering other and less frequently missed problem areas.

1. N1500, N750, NPO—these three identifications are not uncommon to the practicing technician. Most 3.58 mc oscillator circuits include one. Most tuners include one or more, as do nearly all vertical sections. Does it matter if you replace a defective capacitor with this identification on it with another that list identical capacitance? This is most often missed area. MOM.

2. In using your scope in a TV receiver, the video modulation is what portion of the entire composite waveform? 25%, 50% 75%? And if you're trying to locate the cause of poor sync, should you know what percentage the blanking pulse takes up? And the sync pulse? om

3. Figuring RMS values of AC voltage

some of us, who have taken the test, in a forgetful mood. .707 and 1.414 are generally remembered, but is RMS .707 of Peak to Peak reading? Or of Peak? MOM.

4. Few technicians are comfortable figuring antenna distribution systems, even though a lot of material need not be absorbed to have a working knowledge. 1000 microvolts of signal, ODB, are the common terms used for minimum station signal levels at the TV antenna for snow free pictures. MOM.

5. Alignment of TV receivers is a tough area since most of our shops find this a rare operation. Where is the marker generator hooked to the receiver? The scope? And just what does a sweep generator do, and at what rate? MOM area.

6. What purpose does the high voltage spike or pulse generated in the vertical output transformer of a TV set serve? How large is it? Can you get by without it? MOM area.

7. In a PNP transistor is the collector more negative than the emitter ordinarily, or more positive?

8. What is "Miller" effect and why is it useful to understand its relation hip to the TV receiver operation?

9. Square waves are used in test—indicates poor low frequency response? High? Poor low and high response

10. Scope patterns. Manufacturer's scope patterns as shown on schematics are most helpful in proper servicing, but in using the scope for determining phase distortion, what should you know about your scope, and the various patterns? This is an area of some unfamiliarity for many.

11. What happens to 1F Plate voltage when the set is switched from a strong

MORE LATER !

# JERROLD

HEADQUARTERS

for

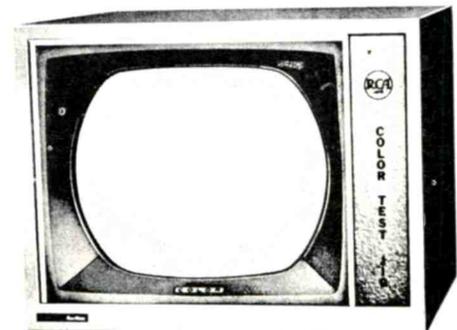
- ANTENNAS
- CONSUMER PRODUCTS
- MASTER ANTENNA DISTRIBUTING SYSTEMS

Factory Trained Experts  
Available To Help You  
Plan System Installations

## FIGARTS

### RADIO SUPPLY

6320 Commodore Sloat Dr.  
Los Angeles, Calif. 936-6218



11A1015

### COLOR TEST JIG

\$135.00\* Includes kit with all necessary components, hardware and instructions for installation of an RCA Tri-Color Kinescope. (Kine not included)

### USE OUR "TENICKEL" EQUIPMENT PROGRAM!

Call Today!

LOS ANGELES	723-6661
SAN FERNANDO VALLEY	781-6501
PASADENA/BURBANK	246-8373
SAN GABRIEL VALLEY	443-6907
WHITTIER/ALHAMBRA	728-7295
LONG BEACH/DOWNEY	639-6950
INGLEWOOD/REDONDO	675-4401
ORANGE COUNTY (714)	521-6700
SAN BERNARDINO (714)	889-1518

### RCA VICTOR DIST. CORP.



6051 Telegraph Rd.  
RA 3-6661

**BERDR***(Continued)*

and by assisting the Director and the

Chief in the collection of such information as is necessary for the proper administration of the Repair Dealer Law.

**BUREAU OF ELECTRONIC REPAIR DEALER REGISTRATION  
COMPLAINTS**

	JULY 1964 JUNE 1965	JUNE 1966 JULY 1965	TOTAL BOTH FISCAL YEARS
--	------------------------	------------------------	----------------------------

	JULY 1964 JUNE 1965	JUNE 1966 JULY 1965	TOTAL BOTH FISCAL YEARS
COMPLAINTS AGAINST REGISTERED DEALERS	1481	1156	2637
NON-REGISTERED DEALERS	1521	925	2446
COMPLAINTS PENDING AT THE END OF THE PERIOD	1174	336	
COMPLAINT REFERRED TO DIVISION OF INVESTIGATION	2114	1144	3258
CASES CLOSED DURING PERIOD	2025	1157	3182
CASES PENDING AT THE END OF THE PERIOD	90	82	
REASONS FOR CLOSING COMPLAINTS			
a. Compliance Achieved	3799	2344	6143
b. No Jurisdiction	115	75	190
c. Informal Adjustment	108	187	195
d. Registration Revoked	74	89	163
e. Registration Suspended	0	1	1
f. Insufficient Evidence	88	127	215
g. Service Dealer Out of Business	80	105	185
h. Could Not Contact Complainant	27	44	71
i. Settled by Small Claims Court	22	26	48
j. Criminal Prosecution		20	20
NOTICE OF VIOLATIONS SERVED	255	204	459
SHOP INSPECTIONS PERFORMED		4151	4151
CURRENT REGISTRATIONS	6737	6672	

**CLASSIFIED ADVERTISING****STOLEN MERCHANDISE**

w/probes. Taken from transmitter of KSJV-TV at Kingsburg, Calif. \$25.00 reward for information.

**HEALTH PLAN OFFERED**

SAVE more than 40% on your Hospitalization Plan. Call J. Wartels—Insurance Counselor to Electric League.

JACK M. WARTELS  
CR 8-0543 TR 8-0161

**FOR SALE**

Sams Photofax, Vol. 10 thru 74 in original folders and in excellent condition. Make offer. Jim Goodman, 11218½ Vanowen St., No. Hollywood, (213) 765-9022.

**FOR SALE**

Sams PHOTOFAX sets 1 thru 656 complete and in good condition. Most like new. Also Sam's Transistor Manuals 1 thru 75 like new. Photofacts in used but usable file cabinets. Reasonable. Make offer. Al Poage, 927 Colorado Ave., Palo Alto, Calif. Phone 321-2965.

**USE OUR WANT ADS**

**HUNDREDS OF WORKING  
USED LATE MODEL  
THIN LINE—PORTABLES**

Low shipping costs anywhere

TV brokers WE 1-6622

4920 W. Pico, L.A. 19, California

**CHANNEL  
MASTER**

DISTRIBUTED IN CALIFORNIA BY:

**ANDREWS  
ELECTRONICS**

1500 W. Burbank Blvd.  
TH 5-3536

**ASSOCIATED  
RADIO DIST.**

1583 Howard St.  
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 &amp; 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 (94606)  
Oakland, 834-9185  
IN

Santa Rosa, 542-5423

2076 Armory Drive (95401)

Walnut Creek, 934-3000

1263 Arroyo Way (94596)

San Rafael, 453-1130

134 Jacoby Street (94901)

Hayward, 537-5833

21726 Meekland Avenue (94541)

San Jose, 295-6818

522 So. Bascom Ave. (95128)

**NORCAL  
ELECTRONICS**

1115 "R" Street  
Sacramento, 442-9041

**WESTERN RADIO  
& TELEVISION  
SUPPLY CO.**

1415 India St., San Diego  
BE 9-0361

**Free  
sales  
clinchers!**



**You're off your rocker if you think tape recorder shoppers can resist these.**

Take the Vocatrol Voice Actuator on top of the tapes.

It would cost your prospect \$12.95 list if he bought it separately. But you can hand it to him with your compliments. All he has to do is buy Channel Master's battery-operated tape recorder A or B.

And because the Voice Actuator adds so much fun to taping (it automatically starts and stops the recorder at a word from you), it's bound to multiply your recorder sales handsomely.

How about the other recorders? They're no step-children either. Your customers get up to six tapes when they buy one. (2 1/2", 3", 5" or 7" reels—and the finest name-brand quality too.)

So there you are. Along with some top-notch solid state recorders, you get a full promotion package complete with: *Three* free sales clinchers (our unprecedented 120 day free replacement guarantee happens to be the third). Plus the fullest profit in the industry. Plus all the in-store dealer aids

required to create a little excitement.

What else do you need to keep you sitting pretty in the middle of all that traffic!

A call to your nearest Channel Master distributor.

You'll make it right now if you're smart.

**CHANNEL  
MASTER**

ELLENVILLE, N.Y.



This **Remington** PREMIER PORTABLE TYPEWRITER

FREE



**WHEN YOU BUY THIS RCA WR-64B  
COLOR BAR/DOT/CROSSHATCH  
GENERATOR...THE ESSENTIAL  
COLOR TV TEST INSTRUMENT**

Here's a deal you can't afford to miss! A FREE Remington portable typewriter—yours when you purchase the most essential color-TV test instrument—the RCA WR-64B!

Just imagine how handy your new typewriter will be—in the shop or at home. You'll use it almost as much as you use the RCA WR-64B—standard of the color TV servicing industry.

Here's how to get your FREE Remington Typewriter. Mail in the warranty card plus the gold label from the shipping carton of your new RCA color bar generator to RCA Test Equipment Headquarters, Bldg. 17-2, Harrison, N.J. We will ship your new Remington portable typewriter to you direct, freight prepaid. But remember—this offer covers only equipment purchased between February 1, 1967 and May 15th, 1967. To allow for postal delay, we will honor cards postmarked up to May 31st.



The standard of the Color-TV Servicing Industry. Generates all necessary test patterns—color bars, crosshatch, dots plus sound-carrier. Only \$189.50\*

Plan NOW to take advantage of this BIG offer—a FREE Remington portable typewriter with your purchase of an RCA WR-64B color bar/dot/crosshatch generator.

\*Optional Distributor resale price. All prices subject to change without notice.



**RCA VICTOR DISTRIBUTING CORP.**

6051 TELEGRAPH ROAD, LOS ANGELES, CALIFORNIA 90022

LOS ANGELES      723-8661  
SAN FERNANDO VALLEY      781-8501  
PASADENA/BURBANK      246-8373

SAN GABRIEL VALLEY      443-6907  
WHITTIER/ALAMBRA      728-7295  
LONG BEACH/DOWNEY      639-6950

INGLEWOOD/REDONDO      675-4401  
ORANGE COUNTY (714)      521-6700  
SAN BERNARDINO (714)      889-1518

**Your One-Stop Electronic Parts Supply House**