

MODERN

electronic service dealer

THE OFFICIAL PUBLICATION OF THE CALIFORNIA STATE ELECTRONICS ASSOCIATION

VOL. 2, NO. 10

FEBRUARY, 1963



WEW / PETS SPECIAL ISSUE

NEWS • PROGRAM • BOOTH LOCATIONS • DEALER WORKSHOP PROGRAM • THINGS TO SEE

G-E reporter, Roland Kempton,
makes the rounds with
independent service dealers

GE ELECTRONICS



No callbacks tonight for Jim Liston, thanks to his in-warranty failure of less than 1% with G-E *SERVICE-DESIGNED* receiving tubes

"In this business, a reliable replacement tube can make you look like a hero . . . a callback due to in-warranty failure gives you a black eye, and wastes time and money. So, it's real simple, why I use G-E *SERVICE-DESIGNED* tubes in almost everything that comes into the shop. I can't afford callbacks."

Jim Liston is the owner of SOUTH CITY TV, South San Francisco, Calif. G-E *SERVICE-DESIGNED* "universal" replacement tubes help protect his profits—and his reputation. Here are just a few of their typical high-reliability features: (1) Rhenium-tungsten heaters increase tube reli-

ability up to 4½ times. (2) **Three- and five-ply plate material** provides uniform heat conduction and radiation. (3) **Straight-sided bulbs** give more uniform heat dissipation. (4) **Tapered pins** prevent socket damage; save time. (5) **Tubes are interchangeable in all sets.** General Electric Company, Distributor Sales, Electronic Components Division, Room 1743, Owensboro, Kentucky.

Progress Is Our Most Important Product

GENERAL  ELECTRIC

the product



*UL Approved.

BTC-99S Astroverter — popularly priced, for volume sales. Proving itself in thousands of Los Angeles' homes. \$27.95

BTU-2T Ultraverter — World's most powerful UHF converter brings in signals distant from the center of Los Angeles. \$44.95

the promotion



Dealers are now using special material designed for the Los Angeles market—stuffers in both English and Spanish, window streamers, ad mats to rack up profitable UHF converter sales.

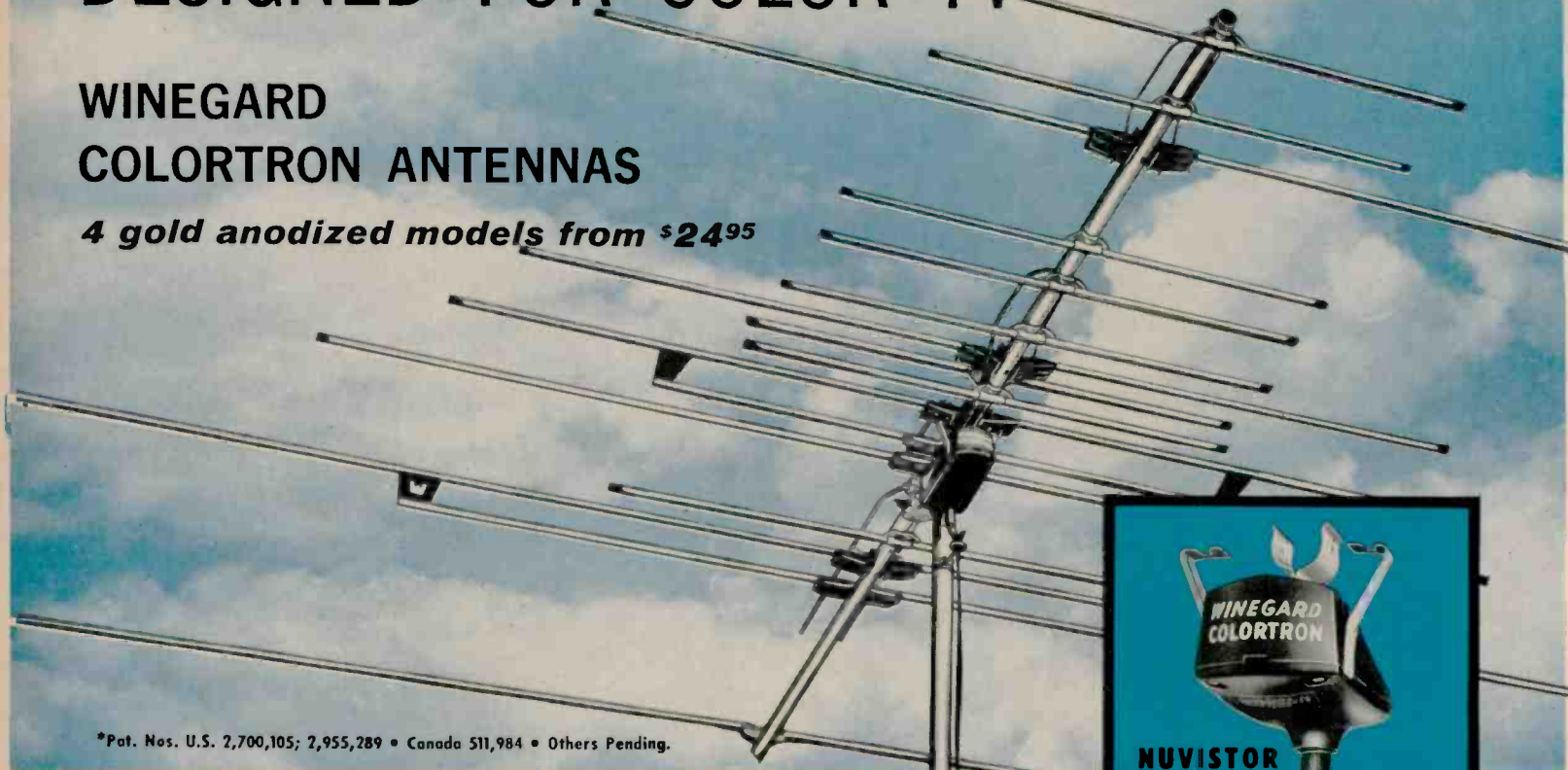
Today, latch onto the product and the promotion program that will help you sell UHF converters in Los Angeles. Contact Wedge Weber. 1217 Venice Blvd., Los Angeles 6, Calif. Phone: Dunkirk 7-2111. Manufactured and engineered by Blonder-Tongue, Newark 2, N. J.

BLONDER-TONGUE UHF CONVERTERS

DESIGNED FOR COLOR TV

WINEGARD COLORTRON ANTENNAS

4 gold anodized models from \$24⁹⁵



*Pat. Nos. U.S. 2,700,105; 2,955,289 • Canada 511,984 • Others Pending.



AVAILABLE WITH REVOLUTIONARY NUVISTOR COLORTRON AMPLIFIER...

Now, through continuous Winegard research, a new, improved Electro-Lens yagi has been developed—the NEW WINEGARD COLORTRON—PERFECT ANTENNA FOR COLOR TV!

Colortrons have a flat frequency response (plus or minus 1/2 DB across any 6 MC channel), no “suck-outs” or “roll-off” on end of bands . . . accurate 300 ohm match (VSWR 1.5 to 1 or better) . . . unilobe directivity for maximum ghost and interference rejection. They deliver today’s finest color reception, give a new picture quality to black and white. Colortrons are the only outside antennas that carry a WRITTEN FACTORY GUARANTEE OF PERFORMANCE.

And Colortrons are built to last. High tensile aluminum tubing for rigidity and stability, insulators with triple moisture barrier, GOLD ANODIZED for complete corrosion-proofing.

There are 4 Colortron models to cover every reception need, from suburbs to distant fringe areas . . . \$24.95 to \$64.95 list.

New Winegard Colortron twin-nuvistor amplifier perfectly matches Colortron antennas. Gives added gain and sensitivity on both color and black and white. Ultra-low noise, high

gain Colortron Nuvistor Amplifier can easily drive 6 or more TV sets.

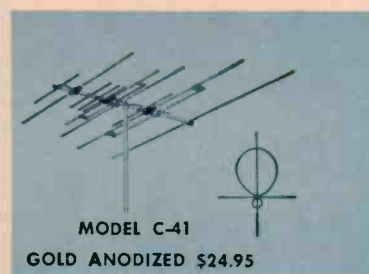
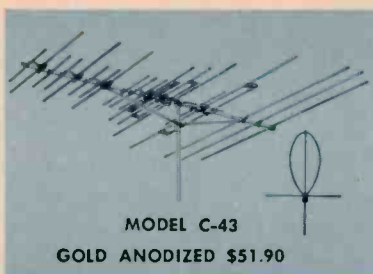
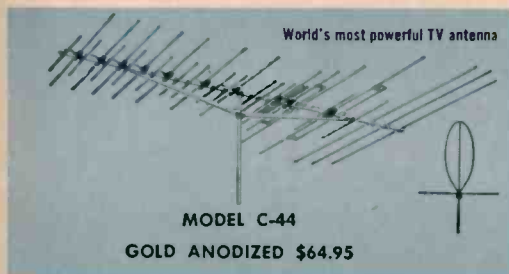
With revolutionary twin-nuvistor circuit, Colortron amplifiers can handle up to 400,000 micro-volts of signal without overloading. *This is 20 times better than any single transistor amplifier.* The Colortron Amplifier will bring the weakest signals up out of the snow, yet strong local TV & FM signals will not overload it. A special life saver circuit gives the two nuvistors a life of 5 to 8 years.

This amplifier is completely trouble free and the finest performing antenna amplifier you can own.

Completely weather sealed, nothing is exposed to corrode and cause trouble . . . has all AC power supply with 2 set coupler. (Model No. AP-220N, \$39.95 list). Twin transistor model also available up to 80,000 micro-volts input. *New type circuit protects transistor from static electricity built up in lightning flashes.* (Model No. AP-220T, \$39.95 list).

Colortron Amplifier can be added to any good TV antenna for sharper, clearer TV reception.

Ask your distributor or write for technical bulletin.



Winegard

There's an extra bonus of quality and performance in every Winegard product.

ANTENNA SYSTEMS

Participating Distributors:

RCA VICTOR
DISTRIBUTING CORP.
6051 Telegraph Rd., Los Angeles 22
RA 3-6661

HURLEY ELECTRONICS
1429 So. Sycamore Ave., Santa Ana
KI 3-9236

DUNLAP ELECTRONICS
1800 18th St., Sacramento
GL 2-3171

RADIO PARTS COMPANY
2060 India Street, San Diego
232-8951

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COVER

Pictured on this month's cover is part of the "TEAM" of Distributors-Reps-and Officials who are for putting together the multitude of details for WESTERN ELECTRONIC WEEK/PACIFIC ELECTRONIC TRADE SHOW scheduled for the week of February 4 through 10, 1963 at the Shrine Exposition Hall, Los Angeles.

Reading from left to right, standing: Ralph Jehonnot, Chairman, Dealer Service Workshops, and California State Electronic Assoc.; Jeff Louis, special representative for Ed Altshuler organization; Bert Moore; John Gregory, Public Relations; Ellard Strassner, Chairman, Distributor Div., Southern California Chapter ERA (Reps) and Chairman of Distributor "Booth Conferences"; Don Martin, Promotions Chairman; Tom Lynch, Chairman of Committee for Distributor Booth Conference; Andy Futchik, Chairman, Dealer Liaison Committee; Ed Altshuler, President, Ascon Management Corp. and Educational Director for PET Show.

Seated, left to right: A. Byron Perkins, Business and Show Manager; Frank Eckert, past President of PETShow and Honorary Chairman, Overall Western Electronic Week; Cap Kierulff, President 1963 WEW/PETShow; Norb Dean, 2nd Vice President, PETShow and Chairman of all Manufacturers Distributors Visitation Day activities; and Chas. Silvey, Executive Vice Pres., WEW/PETShow, 1963. A few of PETShow Executive Committee could not be present when this picture was taken, but they, along with all those pictured above, are striving to make the 1963 WEW/PETShow an outstanding event—knowing always that our motivation is Service to our Trade, our Suppliers and our Principals.



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3300 Watt Ave.
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482-0706



DON MARTIN

LICENSING BILL

The January Issue of MESD was held up almost two weeks in an effort to be the first media to announce the sponsorship of a State Licensing Bill by the State Administration.

This backing of a similar bill to CSEA's AB 265 by the Governor, the Attorney General's Office and the Consumer Council is of great importance to every service dealer in the State of California. The bill itself is in the process of being written and will be reviewed by every chapter of CSEA in the state before the Association will take any action in regards to backing it or not.

As announced in the January Issue, President of CSEA Claire Lanam has asked every chapter to hold a special meeting in the first week of February to discuss this bill and to decide what action to take. A board of directors meeting was held on January 27th in Sacramento and each board member will report to the different chapters the action of the board and its recommendations.

The licensing of Television Service Dealers in California would be a terrific victory for this Association. It has taken great leadership and determination to accomplish what has been done to date let alone what may be in store for the future. These men deserve a great deal of credit for their hard work and untiring efforts in behalf of the California Television Servicing Industry.

THE PLACE OF PETS

For almost a year now a committee headed by President of PETS Cap Kierulff has been working to provide an outstanding Western Electronic Show called the Pacific Electronic Trade Show. The first meeting of this committee was held in March of 1962 and, at that time, the dates were set and the different committees appointed.

In the last few weeks I have heard many comments that PETS conflicts with this show or that meeting but actually these dates were set in March of 1962 and published in MESD in the April Issue. It is unfortunate that dates do conflict but it often happens and probably always will.

PETS is the most unusual show in the United States today. It is an attempt to attract Distributor Customers regardless of whether or not they are Dealers, Hams, Industrial, or what. It is difficult to achieve this goal but it worked remarkably at the first show and would have again last year except for the rain that washed the crowds away.

This year the directors of PETS forecast no rain. They have also divided the show into sections for specific interests such as an Industrial section, a Dealer section and a General section. Those attending will be able to see the manufacturers of their choice in their particular segment of the industry and then take in the other segments that may lead to opportunities in the future.

The Dealer Workshop Seminar program is undoubtedly the finest ever presented in the way of general information and interest to service dealers. It will present the future of TV picture tubes and what you can look forward to in the way of newly engineered television sets. This will be followed by the hottest topic of conversation to hit our industry since television began . . . color servicing now and in the future as discussed by representatives of RCA, Zenith and Packard Bell.

UHF its effects and what it means to the service dealer . . . will be outlined by Bob Snyder of Jerrold and David Graham of KMEX.

A State of the Industry discussion by CSEA, the BBB and the Attorney General's Office will climax the affair.

Any one of these four topics should pack the house with dealers and I can guarantee you that it will be the most profitable three hours you have ever spent.

JERROLD DISTRIBUTORS

ANDREWS ELECTRONICS
1500 W. Burbank Blvd., Burbank
TH 5-3536

CAPITOL ELECTRONICS SUPPLY
17724 Van Owen, Reseda
ST 6-5870

COOK ELECTRONICS
210 E. Hardy St., Inglewood
OR 8-7644

ELECTRONIC SUPPLY INC.
2486 Third St., Riverside
OV 3-8110

BRANCH
323 W. Seventh St., San Bernardino
TU 4-4791

FIGARTS RADIO SUPPLY
6320 Commodore Sloat Dr.,
Los Angeles
WE 6-6218

HURLEY ELECTRONICS
1429 So. Sycamore Ave., Santa Ana
KI 3-9236

1501 Magnolia Ave., Long Beach
HE 6-8268

1023 So. Cleveland, Oceanside
SA 2-7694

222 W. "B" St., Ontario
YU 6-6638

501 E. Date St., Oxnard
HU 3-0133

390 S. Mt. Vernon, San Bernardino
TU 8-0721

SOUTHLAND TV SUPPLY CO.
555 El Cajon Blvd., El Cajon
HI 2-9638

SOUTHLAND ELECTRONIC SUPPLY
3610 University St.
San Diego, Calif.
AT 3-3941

WHOLESALE ELECTRONIC SUPPLY
265 So. Laurel, Ventura
MI 8-3163

BRANCHES
209 W. Cannon Perdido, Santa Barbara
WO 5-5238

MODERN ELECTRONIC SERVICE DEALER

POWERMATE

—rated

No.

1



...the unquestioned leader in antenna-mounting preamplifiers

"Improved" models of other TV/FM antenna amplifiers may come and go, but Jerrold POWERMATE remains the one to beat.

Only POWERMATE delivers consistent high gain on both high and low bands—no "hills and valleys" to cause smearing and ghosting. And only POWERMATE offers the over-all reliability that cuts call-backs to the bone. Service-

men and viewers, even in deepest fringe areas, agree that POWERMATE outperforms them all . . . more customer satisfaction, more profit for you.

Are you getting your share of this POWERMATE-hungry market? See your Jerrold distributor today, or write Jerrold Electronics, Distributor Sales Division, Philadelphia 32, Pa.

JERROLD 

A subsidiary of THE JERROLD CORPORATION



What's our BIG difference in 1963?

Regarding our quality, no one builds a better picture tube... the brand names are the same... still manufactured in the same facilities, the largest and most automated west of Chicago... tube reliability and efficiency is checked by the industry's most skilled engineering staff... and still manufacturing tubes for several of the nation's leading T. V. set manufacturers.

OUR BIG DIFFERENCE IS: (1) A new, sound corporate financial structure. (2) New management and engineering talent have been carefully integrated with energies and abilities of proven personnel, giving the company the strongest executive and technical team in its history. (3) Through acquisition and expansion, new facilities have been added enabling us to offer research and development of cathode ray tubes for numerous industrial, military and commercial applications... and incidentally, we are mighty pleased with our new corporate name...

AMERICAN VIDEO CORP.

18601 S. SANTA FE AVENUE • COMPTON, CALIFORNIA

Manufacturers of Dumont A.B.D. and Colvideo Television Picture Tubes

• Distributor Marketing of Dumont A.B.D. Receiving Tubes



MODERN ELECTRONIC SERVICE DEALER

* dates

* dealer news

* programs

Action Taken to Re-Activate Local CSEA Chapters

The Zone "F" Council of CSEA voted in favor of a proposal to make an extended effort to re-activate some of the local chapters that seem to be in need of help.

A committee has been formed to contact all previous officers of present inactive chapters in effort to form them into a working team and to promote a new local chapter in their area.

All persons interested in this program should contact Zone "F" Chairman Hugh Wilkins.

ZONE "F" COUNCIL REFERS DUES CHANGE TO LOCAL CHAPTERS

The Zone "F" Council, at their regular monthly meeting in January voted to refer the proposed dues change to the individual chapters for recommendation.

The proposal would increase the dues to the Zone about \$3 per month with these funds being used in the zone to set up a zone office and a complete public relations program to promote the individual chapters as well as the zone and state organizations.

Zone Delegates were asked to contact

their individual chapters and to bring back their recommendations to the February meeting. At that time, it is hoped, action can be taken to either go ahead as before or to make the change necessary to put this program into operation.

ACTRA Elects Officers Crawford 1963 President

Allan D. Crawford, El Cerrito television and radio sales and service owner, has been elected 1963 president of ACTRA, the Alameda County Television & Radio Association, Inc., now a full chapter of the California State Electronics Association. Elevated from the 1st vice-presidency of the county organization, Crawford is an officer of the El Cerrito Rotary Club and a member of the El Cerrito Planning Commission. He is also on the board of directors of the Berkeley Co-op Credit Union, and active in the El Cerrito Center of the Berkeley Co-op.

He succeeds Lewis E. Hall of Louie's Radio & TV Sales and Service in Oakland, who will continue on the ACTRA board of directors as immediate past president. Hall is the ACTRA delegate to the California State Electronics Association and a member of the Zone "B" (Bay Area) Council of the state body.

Crawford and his 1963 staff will be installed February 16th at a dinner dance in Renard's of Alameda.

Other incoming officers include John A. Edwards, Styles TV & Radio of Oakland, 1st-president; Norman W. James, Central Electronics of Berkeley, 2nd vice-president; Fred W. Rock, Granada Radio & TV of Oakland, ACTRA corporation secretary, and Wm. R. "Bob" Howard, Jack's Radio & TV of San Leandro, treasurer.

Directors elected for the two-year term are: Frank Lozano, Frank's TV & Appliances, Pleasanton; Tak Nishiyama, Andrew Williams TV & Radio Service Center, Oakland; Troy Scott, Scott Electric, San Leandro; Milton Siegel, Ad-

vanced TV, Inc., Oakland.

Hold-over directors, to serve the second year of a two-year term, are Olin H. Baker, Lin's TV Service, El Cerrito; Ben R. Follrath, Ben's Radio & TV, Alameda; Dickson P. Hill, Montclair Radio & TV Service, Oakland; Floyd Hill, Jr., Action Electronics Service, Oakland; and Forrest Schwabe, Idora Electronics, Oakland.

The association was founded in 1953 and was aided by the Better Business Bureau in the drawing up of its Code of Ethics and Business Standards, according to corporation secretary Rock, who was its first president. Its slogan is "We Build Customer Confidence Through Dealer Integrity". It joined the California State Electronics Association on a hundred percent membership basis July 1st this year, covering the state group's dues for its entire membership. Claire W. Lanam, Lanam Radio & TV of Berkeley and past president of the local body, is currently president of the State association, Rock stated.

Burbank Chapter To Hear Tel-Star Story

A unique meeting of the Burbank Chapter of CSEA will feature a "wives" night at 8:00 p.m. February 14th at the Elks Hall in Burbank.

Mr. James E. Kessinger, representative of the Pacific Telephone Company, will present the Tel-Star Story. One of the most interesting communication stories of modern times, the Tel-Star program will include an explanation of how the initial work was completed and the principals involved in producing telecasts clear across the world.

Of further interest to chapter members and their wives will be a special presentation by Mr. Earl Sheldon of Fresno who will go over the present Woodman Insurance Program that is being handled by his firm for the statewide association.

BE SURE TO
ATTEND YOUR
SPECIAL FEBRUARY
MEETINGS
IN REGARDS TO
LICENSING



IMPORTANT NOTICE

TO EVERY
PROFESSIONAL ELECTRONIC
SERVICE TECHNICIAN

DON'T MISS PHILCO

ELECTRONICS TECHNIRAMA '63

COMING SOON TO YOUR LOCALITY

- It's Different . . . Interesting!
- More Informative and Instructive than Any Service Meeting You've Ever Attended
- New Techniques—New Ideas—New Methods

Watch Your Mail for Your Personal Invitation or Be Sure to Ask Your PHILCO Distributor for Place and Date!



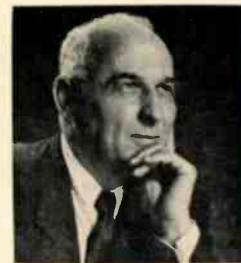
PARTS & SERVICE OPERATIONS

PHILCO

A SUBSIDIARY OF *Ford Motor Company*

MODERN
*electronic
service dealer*

PRESIDENT'S MESSAGE



CLAIRE W. LANAM

THE YEAR OF DECISION

In my former messages I stated we were having growing pains, that we were learning, that it would take time, and we must negate all petty personalities. Also since our vision was too narrow to recognize the condition we were in, good or bad, we must change our perspective.

But that the time would come, when our efforts would culminate in a grand finale and all our plans and ideas which have been so ably directed by our Board, would dovetail into our fundamental structure of a good and successful association that is for the betterment of not only itself but primarily for our consuming public who deserve faithful, trustworthy service and full value for their money.

That will be our greatest success.

This year of decision, our decisions, will solve our most difficult problems to date. A million dollar suit and a way of

registration that will solve our greatest difficulties of fraudulent and incompetent operators.

The stage is set, we must give willingly of our sustenance and be prepared to ponder our problems, to choose our words, to act wisely and move swiftly to implement these decisions. Our continuous and sincere efforts to better our industry, to make it clean and trustworthy, is justification for the aid we will get from everyone in this effort.

Let us not be slack; we need lots of money for these two great efforts. Send in your money to C.S.E.A. War Chest.

This is a special fund and is being kept separate; already many chapters have pledged hundreds and even thousands of dollars. Let's all do as well as Sacramento, the first chapter to pledge at least \$40 per member.

We have a great association—let's go! My congratulations.

STOLEN MERCHANDISE REPORT LIST

Stolen from: Ludlow TV Sales (1/21/63)
9335 Long Beach Blvd.
South Gate, Calif.

Make	Model	Serial No.
Packard Bell	19T9A	155204
Packard Bell	19T9A	172662

Stolen Merchandise Report Form

Store: _____

Address: _____

Make	Merchandise Model	Serial No.

CHAPTER OFFICES
SAN DIEGO #13
3318 Idlewild Way
274-2320
San Diego 17
NORTH COUNTY #18
930 S. Santa Fe Ave
Vista, Calif.

California State Electronics Association
SAN DIEGO NEWS

NEXT MEETING
CHAPTER 13
To Be Announced
CHAPTER 18
8:00 P.M., MARCH 14TH
MERRILL'S TV, VISTA

VOL. 2, NO. 5

FEBRUARY, 1963

Editor: ED FORT, JR.

Group to Consider Furnishing of Used TV's to Schools

A program by which the dealers in San Diego could furnish used Television Sets, Radios, Record Players, etc. to the local schools was suggested by Mr. Ed Fort at the recent Board of Directors Meeting.

Under this program, the chapter could act as a clearing house for these products and distribution could be handled by the School Board or School officials.

Mr. Fort suggested that a letter be written to all the High Schools in regards to this offer. This action was adopted by the Board.

LICENSING

Watch your mails for an important announcement. As soon as a copy of the new licensing bill is in our hands there will be a giant industry meeting. All interested parties will be invited. The bill will be read, discussed, and comments welcomed. Be sure you don't miss this since your entire future will be affected. Remember: watch your mails for the announcement of the time and place.

CSEA Chapter 13 Adopts Articles of Incorporation As Suggested by State

MIX-UP IN YELLOW PAGE LISTING DISCUSSED BY CHAPTER 13

At the January 8th Board of Directors meeting of Chapter 13, Mrs. Lowell stated that an error had been made by the Telephone Company concerning the Chapter's heading in the yellow page section of the Downtown as well as the South County Directories.

A letter to the Pacific Telephone Company was read in which an explanation and request for adjustment was made and a letter of confirmation of receipt was acknowledged by the Telephone Company. The result of this action will be reported in the next issue of MESD.

At the last meeting of CSEA Chapter 13 in San Diego a formal motion was made to adopt the Articles of Incorporation as presented to the Board of Directors.

This action was taken after the CSEA office recommended that all CSEA Chapters file incorporation papers as a protective measure to its local chapter members.

After the formal action by the Board, all officers of the chapter signed these papers which will now be presented for approval to the State of California.

CHAPTER 18 RE-ELECTS OFFICERS

In an effort to conform to the State Association's request that all local elections be held in the month of January, Chapter 18 re-elected the complete slate of officers now in office.

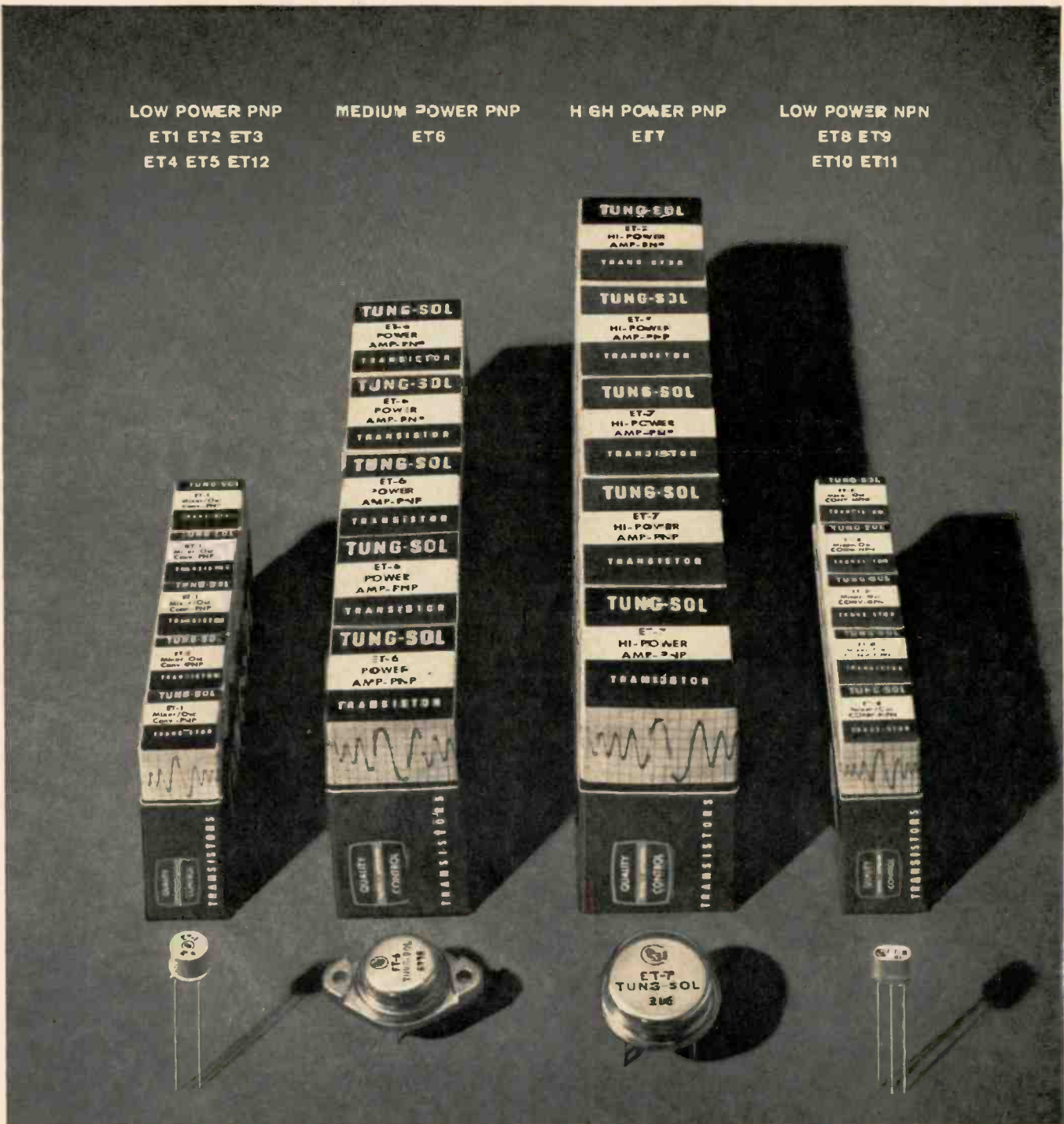
The election of new officers for 1964 will be held in January of that year.

SAN DIEGO BUSINESS INDEX

HITS

90%

IN DECEMBER



THE EASY WAY TO SERVICE TRANSISTORIZED AUTOMOBILE AND HOME RADIOS

STOCK THE TUNG-SOL "ET" TRANSISTOR LINE. There are many reasons why more and more servicemen are buying the Tung-Sol ET transistor line ■ It's the industry's more comprehensive replacement line, with both PNP and NPN types for 6, 9 and 12 volt supply requirements ■ They are factory-designed for specific service, with the tube cartons plainly marked for functions ■ They are warranted by Tung-Sol to work interchangeably as specified ■ Speaking of interchangeable, the Tung-Sol Interchangeability Guide is the most useful for service work. Ask your supplier for a free copy. Tung-Sol Electric Inc., Newark 4, New Jersey.

TELL YOUR SUPPLIER YOU'D RATHER HAVE  **TUNG-SOL®**

MODERN ELECTRONIC SERVICE DEALER

WEW\PETS

EXHIBITS - SEMINARS - SYMPOSIUMS

HIGHLIGHT 1963 PROGRAM

Seven days of formal activities will augment Western Electronic Week, recently proclaimed by Los Angeles Mayor "Sam" W. Yorty. The West's most outstanding electronic event for manufacturers and distributors will reign over the Southland Feb. 4 through 10.

"Sell America First," will be the main theme of the trade show, calling attention to the opportunities and responsibilities of America's selling forces to defeat business uncertainty at home and Communism abroad through promoting the products and services ordered through the American wholesaler.

Manufacturers, distributors, dealers and industrial users throughout the industry will participate in a comprehensive program of management seminars, dealer workshops and technical symposiums, climaxed by a Shrine Convention Hall Rally for the purpose of bringing together all citizens interested in the constructive growth of our community and our nation through salesmanship.

Ascon Management Corporation has been selected to handle programming and promotion of the Distributor Management Seminars, Sales Rally, Dealer Meetings and Technical Symposiums.

SALES SEMINAR

Gail S. Carter, Executive Vice President, National Electronic Distributors Association, will be headline speaker for the "All-Industry Salesman's Seminar," on Friday, Feb. 8. Also appearing on the program will be Edward A. Altshuler, Educational Director for Western Electronic Week and President of Ascon Management Corporation.

Altshuler is making appearances

throughout the United States as the "professor" in the NEDA Traveling College of Knowledge—a special program sponsored by the National Electronic Distributors Association designed to bring management consulting services to the important electronic business centers of the nation.

Chairman for the two-hour evening program is "Cap" Kierulff, one of the initial founders of the Pacific Electronic Trade Show and heads the vastly expanded program during 1963. Kierulff will address his remarks on "Sell America First."

MANAGEMENT SEMINARS

A Management Seminar for distributor management personnel only, will be held on Wednesday, Feb. 6, at the Statler-Hilton Hotel. Chairman Vic Zachariah will head the three session program. Distributors attending the program will be invited to give their opinions on how to increase profitabil-

ity of operations. Each distributor on the mailing list will be sent a letter in advance with an outline of the individual subjects to be covered during this two-hour period. Subjects to be included are: Inventory Control, Employee Incentive Programs, Profit Leaks, Frauds, Reducing Operation Expenses, Financing and Using Advertising Dollars Wisely.

A group of five consultants have been invited to participate as a panel of experts in the morning session. They will listen to the comments by the distributors and following the first two hours will offer their own critique of the suggestions and case histories related by the distributors. Following lunch they will give individual talks.

In the Second Session, a luncheon meeting, Charles Ducommon, former President of the Los Angeles Chamber of Commerce, will speak on "The Role of the Distributor in the American

Officials expect record attendance during 1963 PETS as indicated by this picture taken at a previous show.





The latest in new products will be displayed in a special Dealer Section during the 1963 Pacific Electronic Trade Show

Social Program At '63 WEW/PETS Includes Cocktail Party-Awards Banquet

Economy." Proposed Chairman for the luncheon meeting is Dr. Walter F. Crowder, Editor and Publisher. "Industrial Distribution," a McGraw-Hill Publication. A third session will conclude that day's seminar with Irv Rossman as Chairman. Speakers will include Al Cantor, "Evaluating Financial Management and Control"; Emanuel Rothman, "Profit and the 1962 Tax Revision"; Bert Schireson, "Systems Management for Distributors"; and Richard Carlson, "Profit Leaks."



IRVING ROSSMAN

On that same evening the Awards Dinner has been planned for distributor-representative-manufacturer personnel and guests and is to be held at the Statler-Hilton Hotel, in Los Angeles. Outgoing officers of Western Electronic Week and their committeemen will be honored for their service to the industry and awards will be given.

ALL NEW 1963 WEW CUSTOMER "TECHNICAL SYMPOSIUMS"

The proposed "Technical Symposiums" are a totally new WEW innovation and a major step in appealing to production, management, engineers and purchasing agents as well as all other users from every industry. Technical and professional societies and recognized authorities as well as exhibiting manufacturers will be selected to present these symposiums. Proposed subject matter is to include technical and professional information and technical papers, procurement, design, application, products, packaging, systems, and handling. Tentative scheduling provides for 12 technical symposiums, six on Friday, Feb. 8, and six on Saturday, Feb. 9.

"COCKTAIL PARTY & DEALER WORKSHOPS"

The WEW all-industry cocktail party, Thursday, Feb. 7, from 6 to 8 p.m. enables everyone to meet with old

friends, renew acquaintships and entertain customers and prospects in an atmosphere of social brilliance.

A climaxing event of the entire week will be the "Dealer Service Workshops," on Sunday, Feb. 10, from 9 a.m. to noon. Starting with a Dealer-Service California State Electronic Association sponsored program the remaining time will be devoted intirely to Dealer-Service shops, assuring a record dealer audience for the exhibitors when the PET Show opens at noon.



ED ALTSHULER

MODERN ELECTRONIC SERVICE DEALER

Western Electronics Week

OFFICIAL PROGRAM

MANAGEMENT SEMINARS

Los Angeles

Statler Hilton Hotel

Sponsored by: Ascon Management Corporation
Association Electronic Distributors
Chairman: Vic Zachariah

Wednesday, Feb. 6	9 a.m.-11 a.m.	"Building Profits Into Your Business" Discussion By Consultants: Irving Rossman, Al Cantor, Bert Schireson, R. Carlson, Emanuel Rothman
	11 a.m.-Noon	
	12:30-1:45 p.m.	Luncheon Meeting Speaker—Charles Ducommun
	2 p.m.-3 p.m.	Speaker—Al Cantor
	3 p.m.-3:30 p.m.	Speaker—Emanuel Rothman
	3 p.m.-4 p.m.	Speaker—Bert Schireson
	4 p.m.-4:30 p.m.	Speaker—Richard Carlson
	4:30 p.m.-5 p.m.	General Discussion

ALL-INDUSTRY "COCKTAIL PARTY"

Los Angeles

Statler Hilton Hotel

Thursday, Feb. 7 6 p.m.-8 p.m.

AWARDS BANQUET—7:00 P.M.

Los Angeles

Statler Hilton Hotel

MANUFACTURER—DISTRIBUTOR— REP "BOOTH" CONFERENCE

Los Angeles

Shrine Exposition Hall

Friday, Feb. 8 9 a.m.-Noon
Saturday, Feb. 9 9 a.m.-Noon

SALES SEMINAR

Los Angeles

Shrine Exposition Hall

Sponsored by: Ascon Management Corporation
All-Industry Salesmen
Chairman: "Cap" Kierulff

Friday, Feb. 8 6 p.m.-8 p.m. Speakers—Gail S. Carter
and Edward A. Altshuler

INDUSTRIAL TECHNICAL SYMPOSIUMS

Los Angeles

Shrine Exposition Hall

Sponsored by: Ascon Management Corporation

Friday, Feb. 8 9 a.m.-Noon
Saturday, Feb. 9 9 a.m.-Noon

DEALER SERVICE WORKSHOPS

Los Angeles

Shrine Exposition Hall

Sponsored by: California State Electronics Association
Chairman: Ralph Jhonnot

Sunday, Feb. 10 9 a.m.-Noon Shrine Exposition Hall

AS OF OCTOBER 22, 1962—THE

(*it ended the day JFD introduced the Log-Periodic **LPV** $\frac{L(n+1)}{L_n} = \tau$ TV antenna)

Wave goodbye to all the Rube Goldberg contraptions with their "Chinese puzzle" combinations of collectors, directors, reflectors.

Now you can solve any reception problem with one compact, precisely-engineered antenna—the first TV antenna based on the geometrically-derived logarithmic-periodic scale developed by the Antenna Research Laboratories of the University of Illinois for the U.S. Air Force.

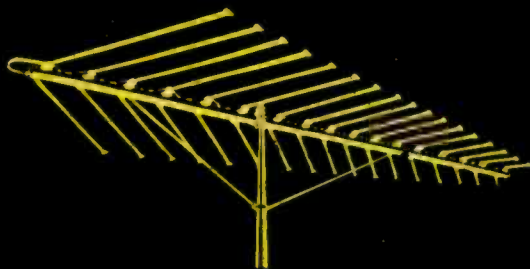
Because it is inherently frequency-independent, the JFD Log-Periodic LPV delivers the same superb performance on every VHF channel—performance comparable to that of a single channel Yagi. And delivers it not only in black-and-white, but in Color, and you get FM stereo too!

THE LOG-PERIODIC LPV ACTUALLY TUNES ITSELF TO EACH RECEIVED FREQUENCY—RESULTING IN:

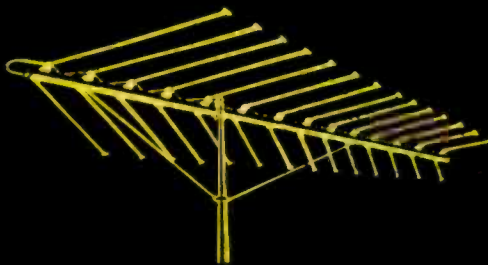
- **HIGHEST GAIN**—as high as 14 db. in the LPV 17!
- **SHARPEST DIRECTIVITY**—on high bands as well as low!
- **HIGHEST FRONT-TO-BACK RATIO**—up to 35 db.
- **LOWEST VSWR**—as low as 1.2 to 1—with constant impedance across the full bandwidth!
- **FLAT RESPONSE ACROSS BOTH VHF BANDS**—with greater gain on the high band, where it's needed most (average increase of gain in high band over low band: 3¼ db.)!
- **BROADEST BANDWIDTH**—thanks to its unique frequency-independent characteristics!

FOR THE FIRST TIME ONE SCIENTIFICALLY FORMULATED ANTENNA CONFIGURATION SATISFIES ANY LOCATION DEMAND: Harmonically resonant V-elements operate on the Log-Periodic Cellular Principle in the Fundamental and Third Harmonic Modes for unprecedented performance —in color—in black and white—in FM STEREO

developed by the Famous Antenna Research Laboratories



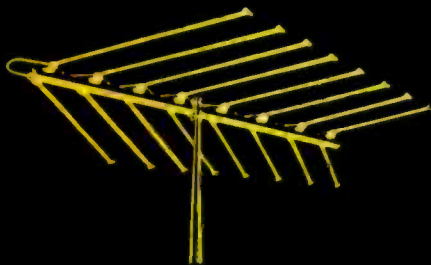
LPV-17: 15 Active Cells and Director System—up to 175 miles



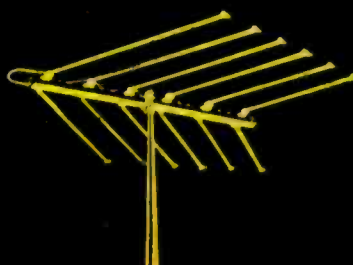
LPV-14: 13 Active Cells and Director System—up to 150 miles



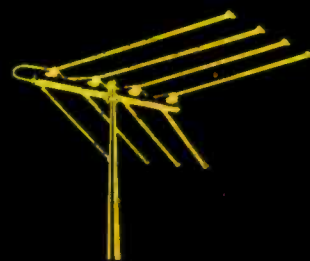
LPV-11: 9 Active Cells and Director System—up to 125 miles



LPV-8: 7 Active Cells and Director System—up to 100 miles



LPV-6: 6 Active Cells—up to 75 miles



LPV-4: 4 Active Cells—up to 50 miles

Adapted to TV and FM Stereo by JFD

- ✓ ELIMINATES THE NEED FOR AREA-DESIGNED ANTENNAS
 - ✓ 100% PREASSEMBLED "FLIP-QUIK" ASSEMBLY
 - ✓ MASSIVE TANK TURRET BRACKETS THAT DOUBLE-LOCK ELEMENTS
 - ✓ AAA† GOLD BOND ALODIZED TO KEEP THAT BRAND NEW LOOK
 - ✓ EXTRA-RUGGED, DOUBLE-REINFORCED IN EVERY DETAIL
 - ✓ LIGHTEST IN WEIGHT PER DB GAIN
 - ✓ WIND-TUNNEL TESTED CONSTRUCTION
 - ✓ LEAST SNOW AND ICE LOADING
- †Attractive, Anti-corrosive Armor

DISTRIBUTED BY:

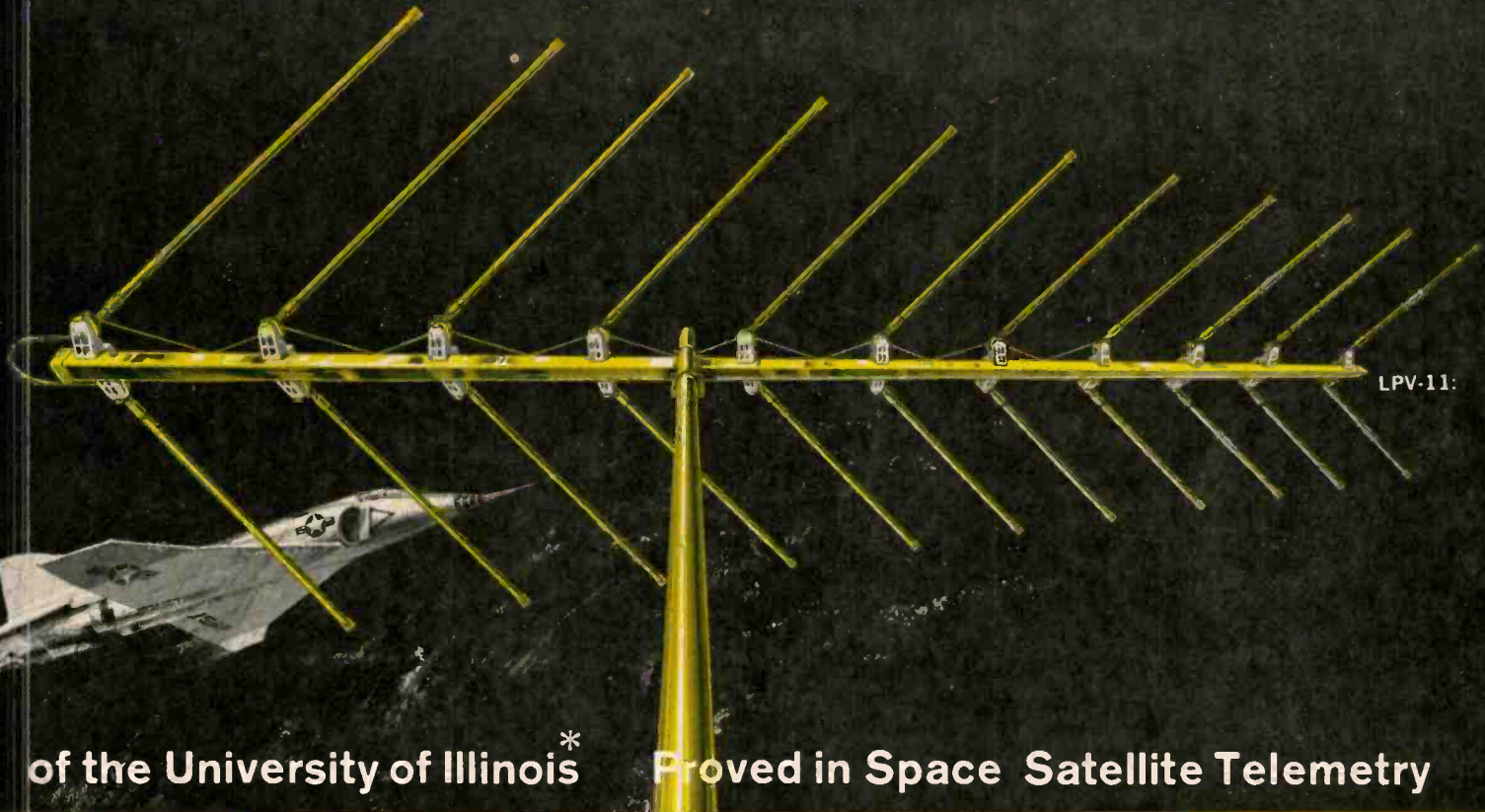
ANDREWS ELECTRONICS
Burbank, Calif.

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RADIO TELEVISION SUPPLY CO.
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'ERA OF COMPROMISE' IS OVER!*

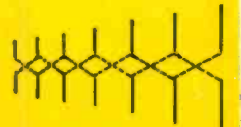


of the University of Illinois* Proved in Space Satellite Telemetry

HOW THE LOG-PERIODIC LPV MAKES ALL OTHER ANTENNAS OBSOLETE



The JFD LPV antenna is a direct descendant out of the logarithmic conical spiral antenna used on the Transit satellite. This basic design is **FREQUENCY INDEPENDENT**—it works like a conical waveguide to yield almost constant gain, matched impedance and a unidirectional polar pattern across an extremely wide band of frequencies.



Dipole version of spiral antenna has elements whose length and spacing is determined by formula derived from conical spiral geometry, so that antenna acts like a spiral with parts of coils missing. A logarithmic scaling multiplier ties the dipoles together into active multi-element cells for each frequency. Crossed phasing harness inserts a 180 degree phase shift between dipoles that cancels signals from rear, reinforces signals from front.



JFD's LPV antenna for TV and FM goes one step further—increases gain and front-to-back ratio while maintaining frequency independence. Forward V-ing of elements shrinks rear radiation lobes, narrows forward beam for sharp directivity, helping to eliminate ghosts and adjacent channel interference. Forward V also permits low band dipoles to contribute to high band gain by operating on the third harmonic mode.

For example: Operation of the JFD LPV-11 on the low band: The larger dipole cells resonate to the low band TV frequencies at their fundamental wavelength. Within each cell, one dipole absorbs the greatest amount of signal for any particular channel, adjacent dipoles pull in 60% more and the next two dipoles add 30% more signal. Many active dipoles working on each channel with constant impedance guarantee high gain.

----- indicates current distribution on fundamental mode.

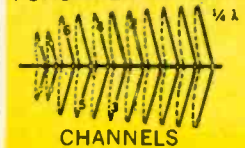
On the high band: The third harmonic cell forms at the rear of antenna for channel 7 and as the frequency increases toward channel 13, the active region moves toward the apex of the antenna. It is this third harmonic operation which guarantees as much as 3% db. additional gain. Continuous and co-linear directors sharpen forward pattern and give peak performance across the entire VHF TV band.

----- indicates the current distribution for the third harmonic mode which will be received on all elements.

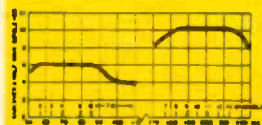
..... indicates the active region for channel 10, i.e., the different efficiencies with which the elements of the LPV-11 act on channel 10.

The actual gain curves measured for the LPV-11 in the JFD Antenna Research Laboratories confirm this fact: Within the band for which it is designed (the principle will also be adapted for UHF and other uses), the log-periodic LPV's impedance, polar patterns and front-to-back ratio are virtually constant—with gain for each channel as high as that furnished by a comparable-sized single-channel Yagi.

FUNDAMENTAL MODE



THIRD HARMONIC MODE



Each antenna in the LPV series consists of an array of resonant V-dipoles and crossed phasing bars, constituting a group of "cells." The size of each cell differs from the one before it by a Logarithmic factor. For any particular frequency, the active portion of the antenna centers on the resonant dipole (equal to one-half wavelength at that frequency), with the adjacent elements also absorbing significant signal energy. The resonances of adjacent cells overlap, so that as the frequency increases or decreases, it is transferred smoothly from one cell to the next.

In effect, the signal is passed along as the frequency increases—the active area moving toward the apex or small end—until, as the fundamental harmonic reaches one end, the other end approaches resonance in the third harmonic. Conventional wide-band antennas are like rows of compartments, one for each channel desired, with sharp cutoffs. The log-periodic antenna is like a continually moving belt that accepts smoothly any frequency that hops aboard.

U.S. Patents 2,958,081—2,985,879—3,011,168. Additional Patents Pending. Produced exclusively by JFD Electronics under license to University of Illinois Foundation

SEE THE JFD LOG-PERIODIC LPV AT YOUR JFD DISTRIBUTOR NOW—AND BE THE FIRST ONE IN YOUR AREA TO INTRODUCE AND PROFIT FROM THIS NEW ERA IN TV RECEPTION.

THE BRAND THAT PUTS YOU IN COMMAND OF THE MARKET

JFD

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WHOLESALE ELECTRONICS SUPPLY CO.
Ventura - Santa Barbara

WESTERN RADIO & TV SUPPLY, INC.
San Diego

CSEA Sponsored

DEALER WORK SHOP SEMINAR TO COVER COLOR—UHF—STATE SERVICING INDUSTRY

One of the most outstanding Dealer Workshop Seminars in history will highlight the last days activities of Western Electronic Week and the Pacific Electronic Trade Show on Sunday morning, February 12th.

According to chairman Ralph Johnson of Tri-Color TV in Burank and CSEA State Vice President, "we have been able to put together a program that is jam packed with vital information to every service dealer in the State of California."

Keynoting the meeting will be Dr. Willard Geer who is listed in "Who's Who in the West." At the present time, Dr. Geer and his Associates own basic patents in color Television and will show and discuss the revolutionary new "flat color Television Picture tube." His discussion will cover the new technology in television tube design and the future of color picture tubes.

Following Dr. Geer will be a panel dis-

cussion by three representatives of major manufacturers of color sets in the United States. Representing RCA will be Mr. Charles Wack, field service engineer of RCA's consumer products division. Mr. Paul L. Pekarsky, field service engineer, home products division, will represent Packard Bell and a Zenith representative has not been determined as of press time but will be in attendance. Each man will give a short introduction to the basic problems of color TV now and in the future and this will be followed by a question and answer period open to the floor.

UHF its problems and future will then be presented by Mr. Bob Snyder, Western Regional Manager for Jerrold Electronics and Mr. David Graham, representing the new Los Angeles UHF station KMEX 34. Mr. Graham is the studio supervisor for the station and will be available for special questions.

The "State of the Service Industry in

California" winds up the program and will be moderated by CSEA Executive Secretary Kieth Kirstein. This program will discuss the present position of the service industry in regards to such important items as state licensing, yellow page advertising, etc. Mr. Robert Mott, Trade Practice Consultant for the Los Angeles Better Business Bureau will present the BBB's place in the industry and Assistant Attorney General, Fraud Division for the State of California, Vincent Thorpe will present the Attorney General's position in regards to the TV Service Industry.

Every dealer should make an effort to attend this outstanding program. It is being held on Sunday morning to give you every opportunity to attend. Although sponsored by CSEA everyone interested is invited and, following the program, will have an additional opportunity of seeing PETS and the new products being introduced.

CALIFORNIA STATE ELECTRONICS ASSOCIATION SPONSORED

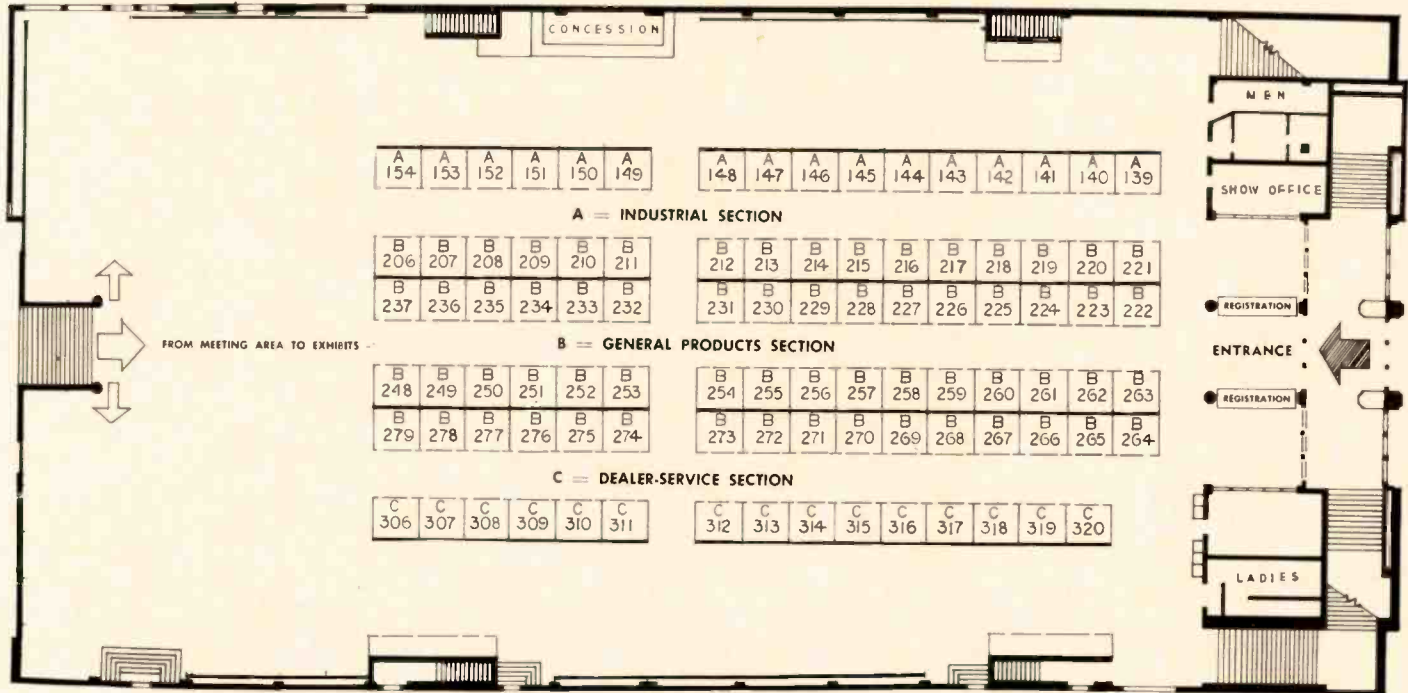
PETS—DEALER WORKSHOP SEMINAR

SUNDAY, FEBRUARY 10, 1963

- 9:00 a.m.- 9:30 a.m. Dr. Willard Geer
Subject: Wall T.V.—The Color Tube of Tomorrow
- 9:30 a.m.-11:00 a.m. Subject: Servicing Color to Today and Tomorrow
Panel discussion
R.C.A.—Charles Wack, Field Service Engineer, Home Consumer Products, Inc., Indianapolis, Indiana.
Zenith—To be announced.
Packard Bell—Paul L. Pekarsky, Field Service Engineer, Home Products Division
- 11:00 a.m.-11:30 a.m. Subject: Television Distribution Systems and U.H.F. Transmission
Bob Snyder—Jerrold Electronics
David Graham—Channel 34 K.M.E.X., Studio Supervisor
- 11:30 a.m.-12:00 p.m. Subject: Report on the State of the Servicing Industry
Panel discussion
C.S.E.A.—Keith Kirstein, Executive Secretary
Los Angeles Better Business Bureau—Robert Mott, Trade Practice Consultant
State of California—Vincent Thorpe, Assistant Attorney General, Fraud Division

PACIFIC ELECTRONIC TRADE SHOW

SHRINE EXHIBITION HALL EXHIBIT LOCATIONS



1963 Western Electronic Week FEB. 4 thru 10
Pacific Electronic Trade Show FEB. 8-9-10

EXHIBITORS

ACTION SYSTEMS.....	236B	GENERAL RADIOTELEPHONE CO.....	222B	SIMPSON ELECTRIC CO.....	147A
ALPHA WIRE CORPORATION.....	224B	HALLCRAFTERS HY-GAIN ANTENNA.....	234B	NORMAN H. SMITH, INC.....	140A
AMPEREX ELECTRONIC CORPORATION.....	232B	HARMAN-KARDON ELECTRO-VOICE.....	250B	SONOTONE CORPORATION.....	212B
ANTENNA DESIGNS INC.....	311C	HUNTER TOOLS.....	146A	SOUNDOLLER, INC.....	141A
ASSOCIATED PUBLICATIONS (EXCHANGE).....	309C	INDUSTRIAL NEWS (EXCHANGE).....	318C	SPAULDING PRODUCTS CO., INC.....	243B
THE ANTENNA SPECIALISTS CO.....	268B	INTERNATIONAL RECTIFIER CORP.....	259B	SPRAGUE PRODUCTS COMPANY.....	264B
ARGOS PRODUCTS COMPANY WM. A. HOLMIN CORP.....	220B	INTERNATIONAL RESISTANCE COMPANY.....	225B	SPRAGUE PRODUCTS COMPANY.....	265B
AUDIOTEX MFG. CO. GLOBE ELECTRONICS MFG. CO.....	271B	JERROLD ELECTRONICS CORPORATION.....	252B	TECHNICAL APPLIANCE CORPORATION (TACO).....	253B
BETACOM SEMITRONICS.....	151A	E. F. JOHNSON COMPANY.....	266B	TENNA MFG. INTERNATIONAL ELECTRONIC SALES (MULLARD TUBES).....	311C
B & K MANUFACTURING CO.....	152A	JFD ELECTRONICS CORPORATION.....	319C	TERADO CORPORATION SWING-O-LITE INC.....	216B
BUD RADIO, INC. ERSIN MULTICORE SALES.....	149A	KESTER SLODER COMPANY.....	144A	TEVCO INSULATED WIRE.....	267B
CALIFORNIA CHASSIS COMPANY.....	223B	KRAEUTER & CO., INC.....	221B	THE THOMAS & BETTS CO. INC.....	230B
CALIFORNIA STATE ELECTRONIC ASSN.....	309C	KRYLON, INC., MOYT ELECTRICAL INSTRUMENT WORKS.....	237B	THE THOMAS & BETTS CO. INC.....	231B
CARL CORDOVER COMPANY SUPERIOR INSULATED WIRE CO.....	269B	KWIKHEAT MANUFACTURING CO.....	209B	TRI-EX TOWERS.....	308C
CENTRALAB OXFORD-HUDSON.....	219B	LANCE ANTENNA CORPORATION.....	229B	TUNG-SOL SALES CORPORATION.....	210B
CLEAR BEAM ANTENNA CORP.....	263B	LUXO LAMP CORPORATION.....	273B	TUNG-SOL SALES CORPORATION.....	211B
CORNELL-DUBILIER ELECTRONICS.....	215B	MALLORY DISTRIBUTOR PRODUCTS COMPANY.....	256B	UNGAR ELECTRIC TOLS, ELECTRONIC DIVISION OF ELDON INDUSTRIES.....	148A
DAYSTROM PRODUCTS CORPORATION.....	258B	MALLORY DISTRIBUTOR PRODUCTS COMPANY.....	257B	UNION CARBIDE CONSUMER PRODUCTS CO.....	312C
EICO ELECTRONIC INSTRUMENT COMPANY, INC.....	274B	MASTER MOBILE MOUNTS, INC.....	261B	UNITED TRANSFORMER CORP.....	139A
ELECTRON TUBE DIVISION.....	255B	J. W. MILLER COMPANY.....	260B	VACO PRODUCTS CO.....	217B
ELECTRONIC PERIODICALS (EXCHANGE).....	277B	MODERN ELECTRONIC SERVICE DEALER.....	309C	WALD, INC.....	227B
ELECTRONIC SOURCES.....	316C	PEARCE-SIMPSON, INC.....	275B	WALSCO ELECTRONICS MFG. CO.....	272B
EQUIPMENT & MATERIALS REPORTER (EXCHANGE).....	308C	PRECISION APPARATUS CO., INC.....	142A	WESTERN AEROSPACE MAGAZINE (EXCHANGE).....	315C
FANON-MASCO.....	218B	RADIO CORPORATION OF AMERICA.....	254B	WESTERN ELECTRONIC NEWS (EXCHANGE).....	317C
GENERAL INSTRUMENT-CAPACITOR DIV. ELCO SALES.....	150A	RAYTHEON COMPANY, DISTRIBUTOR PRODUCTS DIVISION.....	138A	THE WINEGARD COMPANY.....	314C
GENERAL ELECTRIC COMPANY.....	143B	REGO-WIRE STAR SALES-PICTURE TUBES.....	226B	XCELITE INCORPORATED.....	320C
		JOHN F. RIDER PUBLISHERS, INC.....	262B	ZIFF-DAVIS PUBLISHING CO., ELECTRONICS DIVISON.....	284B
		SECO ELECTRONICS, INC.....	228B		

SIGN UP

for more business



with colorful service signs from RCA

RCA signs for service technicians:

- Identify your business
- Call attention to your services
- Dress up your shop or truck
- Associate you with the prestige and customer acceptance of RCA—the most trusted name in electronics

Another Way RCA Helps You in Your Business

RCA ELECTRON TUBE DIVISION, HARRISON, N.J.



Metal Outdoor Hanging Sign—double-faced with hanging bracket, 40" x 28". (1A1275)



Metal Wall Sign—big 40" x 28" size. (1A1276)



All-Purpose Panel Sign Kit—for wall, truck, anyplace. Contains two 40" x 14" signs. (1A1278)



Metal Flange Sign—18" x 12"—for outdoor-indoor display. (1A1277)



Decal—12½" x 8½"—for wall, window, door, or truck. (1A1279)

All available from your Authorized RCA Tube Distributor. See him this week.



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ANDREWS ELECTRONICS

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TH 5-3536

1415 India Street, San Diego
BE 9-0361

THIS MONTH:

TO BLOOM OR NOT TO BLOOM - - -

technical
section

An MESD special feature

Irv Tjomsland, Editor

THE PROBLEM:

I have a color receiver in my shop for repair and adjustment. It appears to be a 1956 or '57 model and still has the original metal CRT. The customer complains that when the controls are adjusted for a good color picture, it goes wild when a black and white commercial is spotted in with the color show. Is there anything I can do to correct or reduce this tendency?

BACKGROUND:

This problem has been "kicked around" at service association meetings a great many times, but lack of specific operating data has usually prevented any solution.

The question suggests that under some black and white program reception conditions the high voltage system is so overloaded that normal raster size and sync are affected. Many servicemen describe the effect as "bloom" or "bloom out."

To provide some working data on this problem an early color receiver with a 21AXP22A metal kinney was instrumented. A switch system was installed which permitted measurement of separate or total CRT gun beam current.

The voltage regulator was adjusted to draw 200 microamperes (μA) at low contrast levels, and to cease conduction at the 600 μA point.

The receiver used in the test provided consistent raster

width, focus, and convergence up to the 700 μA range. (This maximum value will vary from receiver to receiver because it is determined by the condition of the horizontal output, damper, high voltage rectifier, regulator, and adjustments such as efficiency coil, drive, etc.)

The receiver was adjusted to provide a picture of maximum brightness, contrast, and chroma during the presentation of "College Report," Fig. 1 (page 20) indicates the shape of the raster *and the position of the brightness, contrast, and chroma controls*. Beam current averaged 600 μA .

Fig. 2 shows the shape of the raster and condition of focus a few moments later when the black and white spot was televised. The knobs are still in the same position, but the beam current has risen to more than 1000 μA .

OPERATING IN THE BLOOM RANGE:

The bloom problem has been particularly troublesome when the customer insists on watching color programs to the exclusion of gorgeous black and white. By making contrast and chroma adjustments during the color portion of the transmission, as detailed above, he involves himself in a technical trap.

The production of a high luminence color area, such as a bright blue sky, may require the output of only one gun, but the same picture transmitted in black and white will

continued next page

require output from all three guns to reproduce the shade of gray or white required to simulate the sky area.

From a practical standpoint it can be assumed that unless a color show contains white material the beam current required for reproduction will be less than if a fully modulated black and white version is reproduced.

CRT EFFICIENCY:

Early Color CRTs were plagued with low light output efficiency. The writer understands that this was due in part to the use of smaller holes in the shadow mask than are currently employed. A substantial amount of power is lost to the shadow mask, particularly if any beam thickening due to defocus occurs.

On the test receiver very little increase in light output can be detected even though beam current increases from 600 to 1000 μ A. (A light meter aimed at a highlight area indicated a barely detectable increase.)

Poor operation on the part of the customer aggravates this situation. Many a man, who wouldn't be caught dead projecting color slides in anything except total darkness, will cheerfully crank up his color television to compete with daylight or high level room lighting.

Since he has no beam current meter to guide him, he will tend to operate the contrast at the bloom level, and chroma at the break-up level. This also ties in with the tendency of most users to crank up black and white receivers until the picture is either black or white, with no shades of gray involved. Since natural color requires reproduction at original brightness (luminance) as well as hue (shade of color) poor operation will cause poor color fidelity.

BEAM CURRENT REQUIREMENTS:

Nighttime operation with a well shaded 25 watt lamp for

general illumination will require 300-400 μ A for excellent contrast, brightness, and chroma.

Daytime operation in a room draped to limit reflected light from a white wall to less than .5 on a light meter (against 3 to 4 from the highlight area of the CRT) requires 600 to 800 μ A for similar results.

With active daylight, but no direct sun, a good contrast and chroma picture cannot be obtained, even with beam current in excess of 1000.

These beam current levels are associated with early color tubes and are not typical of later versions.

SOLUTION TO THE PROBLEM:

Since several factors are involved, no single answer will contain the solution, but these separate points may help:

1. Be sure the receiver is in top working condition. Bad load resistors, poor diodes, for instance, may cause white stretch, and complicate the problem. Be sure the high voltage regulator is regulating, the high voltage itself up to spec, and the horizontal output stage capable of supplying the necessary beam current and scan power.
2. Urge customers to make contrast adjustments during black and white transmissions.
3. Try to convince customers that best color reception will be obtained at extremely low levels of competitive room lighting.
4. Remind the customer that the new color tubes have much higher light output for the same input, and that possibly his receiver can be converted to use the more modern color kine. (For many receivers the changes required are minor, and the improvement very marked.)



FIGURE 1



FIGURE 2

An MESD Special Feature
For The New Man

Learning The Basic FUNDAMENTALS OF TELEVISION SERVICING

by

Irv Tjomsland

This column will be written for you, if you have recently entered the radio and television service field via the "Outside Call" route, rather than through the more formal vocational training, engineering, or apprentice programs.

You may have transferred from "pickup and delivery" work to full time service. You will, in all probability, have proved that you can meet the public and collect a fair fee for your efforts.

You will have developed a mental correlation between receiver components and performance. This may have started when you first restored a stable picture by replacing a defective sync separator, eliminated snow by locating a low emission RF tube in the tuner, or restored full sweep by replacing an output tube.

Since industry experts have estimated that aural and visual operation (but not necessarily maximum performance), are related to tubes in 80% of service requests, it is easy to see where you, especially if you are gifted with a good memory and power of observation, may enter the field and perform useful and chargeable work, yet have almost no actual knowledge of circuit performance.

Is this a safe foundation for your future prospects and career? Will you be able to command the increasing income required for future responsibilities, or will you level off below your objectives?

No one can say, and it must be admitted that your business will be greatly affected by your ability to sell your services, but certain general conclusions can be drawn:

1. Without a full technical background you will tend to restore your customers' receivers to operation, but not necessarily to BEST performance.

Not so, you say? Well, not in every instance, but often enough as the following instances may illustrate:

1. Your customer has a receiver with sensitive horizontal control. You may find that you can restore operation by selecting the best of several new tubes for the oscillator stage.

If you were thoroughly familiar with the circuit in the receiver you might recognize from the feel of hold control that the multivibrator circuit was changing rather than the tube. You might find that the coupling capacitor between the two sections was unstable, and could be expected to deviate further. If only the tube were replaced trouble would occur within a few operating hours. If the capacitor were replaced, any of the tubes would perform well.

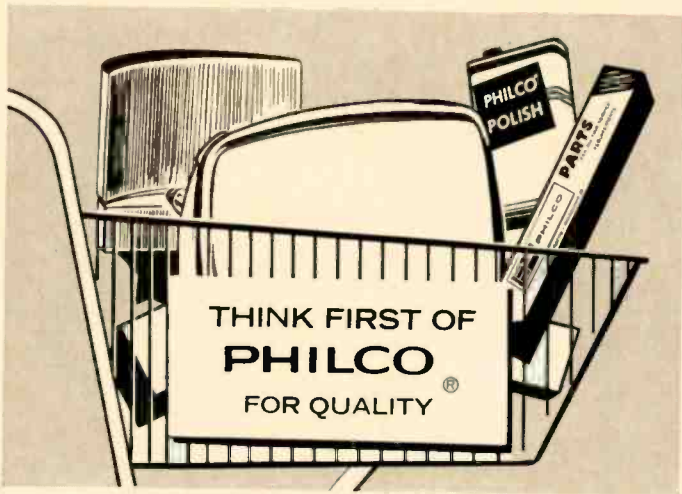
2. You are asked to service a receiver with "no raster." You find that the horizontal output tube is flat, and a new tube restores operation.

If you were circuit conscious you might notice that the tube you were replacing was of late code date, indicating that it had been recently installed. Since this spells "Call-back" you perform tests in the output stage and find the screen circuit "off value."

3. You service a receiver for "pull." You find one or more gassy IF tubes, and eliminate most of the trouble, but find that best performance occurs with a weak IF tube in one socket.

From a tube standpoint the receiver performs well. From a circuit standpoint something is seriously wrong. Careful testing indicates that a bi-filar IF coil develops slight leakage, interfering with AGC. Correcting this problem restores best operation with good tubes in all sockets.

(Continued on Next Page)



4" Contemporary Styled EXTENSION SPEAKERS

For home, office, shop, music or sound systems. Beige molded plastic cabinet. Connector socket, 8 ohm voice coil impedance; .68 oz. Alnico magnet. With or without built-in volume control. Cabinet size, 5x3½x5¼".



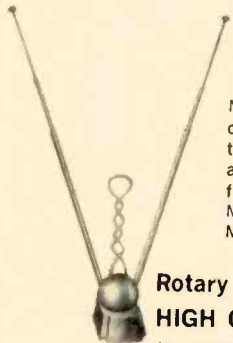
Deluxe 4 Speed STEREO CHANGER M60A

- Plays all speeds, 16, 33, 45, 78
- Intermixes 7", 10" and 12" records
- Shuts off after last record
- Supplied complete with stereo cartridge and sapphire needles.



PHILCO VIBRATORS Tops in quality low in price

Made to Philco standards of quality and specifications. Rigidly inspected and tested. 3 Pin models for 12 Volt General Motors and Chrysler systems, also 4 Pin Model Vibrators for 6 Volt systems.

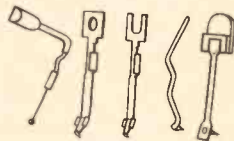


Rotary Switch HIGH GAIN ANTENNA

Six position switch for best possible signal with minimum of interference and ghosts. 3 section dipoles finished in brass. Cast-iron base prevents tipping.

PHILCO PHONOGRAPH NEEDLES for all makes

Replacement needles for Philco, Ronette, Astatic, RCA, Shure, Sonotone, Phillips, Piezo, Telefunken, Electrovoice, Perpetuum Ebner, Euphonics and other makes. Sapphire, Diamond and Diamond-Sapphire.



PARTS & SERVICE OPERATIONS

PHILCO

A SUBSIDIARY OF Ford Motor Company

TELEVISION SERVICING

(Continued)

LONG RANGE RESULTS:

1. If you furnish service by restoring operation only, as in the first part of each instance, you may find that you are contributing to the general public feeling that the only good receiver is a new receiver, because it provides a little less performance each time it is serviced.

2. The exact opposite can be true if you are a careful circuit man. As you care for a customer's receiver you have a chance to observe the performance over a period of time, gradually introduce the adjustments, corrections, and improvements which no manufacturer can build in as the receiver goes through the production line. Your customer will find that his performance holds, or even improves as his receiver goes through its normal life, and you may have difficulty convincing him that he would do well to buy a new one when he should. But the important thing to you is that his entertainment dollar is offered to you first, and on that basis you can expect to see your income and community position improve with the passing of time.

FROM PARTS MAN TO CIRCUIT MAN

How can you best advance from parts changer to circuit man? You have already proved that you can perform chargeable service on the majority of receivers. How can you build on this foundation to the point where you can perform upgrading work on almost any receiver you encounter?

The most important point will be found in your attitude: You must tell yourself (and believe it) that every function and malfunction in any type of receiver is viewable or measurable if you have the right equipment on hand at the right time.

You have already found out that your volt-ohmmeter is invaluable, but you must be willing to believe that it is easy to make additional tests which are even more illuminating.

Where the volt-ohmmeter indications are largely static in nature, other devices can give you dynamic indications. Correct B plus does not insure operation, but the proper signal at the video detector does insure that one half of the television receiver is working properly.

When you understand the circuitry and make full use of equipment to measure and view it, you will find that you no longer charge off unusual performance to the "mystery account."

THE FUTURE FOR THE NEW MAN:

THE MODERN ELECTRONIC SERVICE DEALER can be a most important source of information to you, the new man.

In succeeding months this column will be circuit and procedure conscious. In it you will find suggestions for money making usage of the test equipment discussed in Test Equipment Topics. You may find that unused equipment now on hand could perform valuable functions, or it might help you determine if equipment you were planning to buy would do the job.

Your questions will be answered if you will address them to the Editor, and those of general interest will be published in the Question and Answer column if you give permission.

If you encounter a problem which does not yield to normal service procedure your shop may appear as the originating source in the "Problem of the Month" column.

NEXT MONTH:

In next month's column we will discuss a problem that faces every "new man." To give a customer the most for his money should I replace Selenium rectifiers with Seleniums only, or is there a safe way to use more modern units?



REPLACEMENT RECTIFIER . . .

assortments just introduced by International Rectifier Corporation, El Segundo, California, in Caddy Kits and Bench Cabinets, put a semiconductor replacement for every conceivable radio and TV audio servicing job right at the fingertips of the serviceman, and at a considerable saving in cost. The two basic assortments contain selenium stacks, plug-in type silicon rectifiers and axial lead type rectifiers.

The IR Caddy Kit contains an assortment of 16 rectifiers of the 10 most-used types, and is priced at \$14.95; a saving of \$3.22 over the total regular dealer net. A useful plastic divider box valued at \$1.50 is included at no charge, thus bringing the total dealer bonus to \$4.72. Small and compact, this Caddy Kit will come in mighty handy on field calls.

The IR Rectifier and Diode Replacement Bench Cabinet for in-shop use contains an assortment of 31 rectifiers and diodes in the 16 most-used types. A permanent four-drawer storage cabinet is included free of charge. Dealer savings on the rectifiers, which regularly net \$28.10, amount to \$3.15. This, plus the \$3.50-valued cabinet, brings the total dealer savings to \$6.65.

These utility kits can save service dealers hours of valuable time by putting a complete range of top-quality replacement rectifiers close at hand. Both assortments are available through more than 800 International Rectifier Commercial Products Distributors across the nation.

THE H-22 "LITTLE JOE" . . .

Soldering Iron Holder, with a special "Sta-Tinned" Soldering Cup and Heat-Retaining Liner, is a major change in the concept of soldering iron holders. It is manufactured and distributed by Macdonald & Company, Glendale, California.

Model H-200 provides industry with a product which not only meets safety requirements, but provides features which allows the Tip to be kept immersed in the reservoir of molten solder while

idling, thus keeping the Iron ready-for-instant use—a time-saving factor which helps increase overall production. Increased Tip and Element Life are also an important result of this new design.

Additional Important Features of H-200: 1. Has a Basket Type Guard which allows a full and unrestricted Air-Flow—to prevent Soldering Iron or Stand from overheating. 2. This Guard also protects operator from painful burns. 3. Has Adjustable Slide to permit the use of Hexagon and other makes of 25-40 Watt Pencil Type Soldering Irons. 4. Also, a Non-tip Self-Supporting Base. 5. Unit is built of heavy gauge steel (Cadmium Plated) for long life. 6. Designed with Bracketed for out-of-way Under-Bench Mounting, or for Bench Use (with Bracket quickly removed).

Size: Base—4½" Dia. Height—5½". Individually packed. Price each: 1 to 9: \$2.95. 10 to 49: \$2.75. 50 and up: \$2.50. Model H-200 is also available in other sizes on special order.

For additional information (contained in "Little Joe" Catalog No. 11), address: Macdonald & Company, 714 East California Street, Glendale 6, California.

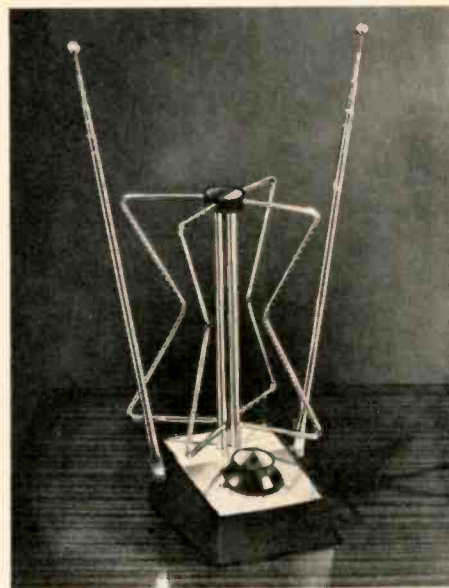


A FOUR-CHANNEL . . .

preamplifier-mixer that is transistorized and self-powered has been developed by Citroen Electronics Corporation for use with its Models 550 and 660 portable tape recorders and other amplifiers and tape recorders.

The CEC Model 1400 preamplifier-mixer has four input jacks and will control any combination of four microphones, tuners, phonos or radios, and each of the four can be controlled as to level individually. Thus, at conference tables, rehearsals or study groups, all notes and comments can be taken and fed into a single CEC recorder for a complete coverage report.

Priced at just \$24.95, the CEC Model 1400 is available now from Citroen Electronics Corporation, 729 N. Highland Avenue, Los Angeles 38, California.



THE GOLDEN CANAVERAL . . .

a luxury-styled TV/FM indoor antenna featuring top performance for the quality-level market—has been introduced by Channel Master Corporation, Ellenville, N.Y.

A major technical feature of the new antenna is its unique impedance-compensating circuit which lengthens and shortens the dipole electronically within each band. This provides antenna resonance on each channel, and eliminates the need for manual adjustment of dipoles when changing channels. Only when the viewer switches from one band to another, is a simple push-or-pull dipole adjustment necessary.

The impedance-compensating circuit is controlled by the "Pix Power" switch which provides unsurpassed gain as well as maximum ghost and interference rejection. The Canaverall is the only indoor antenna whose switch actually provides an electronic control, instead of simply mechanically connecting together different components of the antenna. The viewer simply finds the best switch position for each channel in his area; thereafter, this position remains the same for that channel.

On the high band, the Canaverall greatly gain by functioning as two colinear half wave dipoles. On the low band, performance is enhanced by the longest elements of any indoor antenna—96 inches from tip to tip when fully extended, providing maximum long distance pulling power, particularly on the low-end channels.

The Canaverall is the only telescoping indoor antenna with a balanced 300 ohm impedance to match the set. The Pix Power Switch has genuine silver contacts

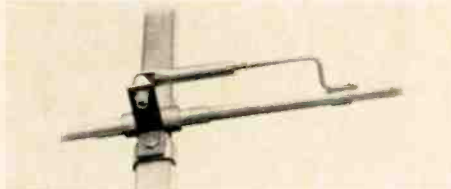
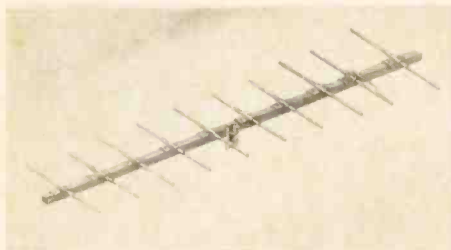
NEW PRODUCTS

(Continued)

to insure long life and dependable performance. Based on an extensive study of consumer preferences in indoor antennas, this new model is characterized by up-to-the-minute space age design, smartly styled in a fashion-keyed tri-tone color combination that blends beautifully with practically any TV set.

The Canaveral is Fair-Traded at \$9.95. The consumer is given a money back guarantee of complete satisfaction.

An attractive flashing-light "Showcase" display is available to dealers.



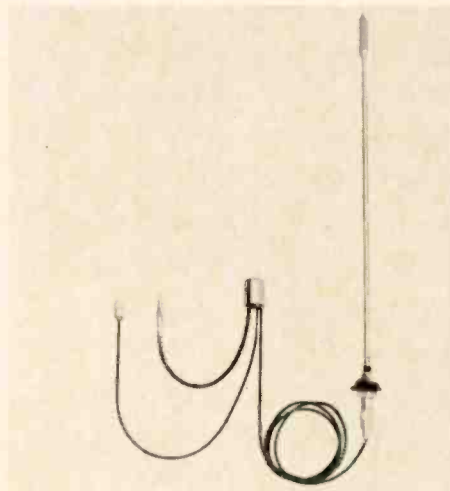
TACO . . .

Technical Appliance Corporation is marketing a new series of extra heavy-duty TV and FM antennas for master antenna systems. According to the statement of Dan O'Connell, Manager of the Philadelphia-based Consumer Products Division of the company, the extremely rugged "J" series antennas are high-gain, high-directivity cut-to-channel yagis which are directed to: (1) delivering maximum signal strength to system head-end equipment in motels, hotels, hospitals, etc., (2) functioning at maximum efficiency even in conditions of severe snow and ice-loading, and (3) providing an antenna that will last as long as the system equipment.

The heavy duty construction of the "J" series, according to Dan O'Connell answers the need for a maintenance-free antenna in master antenna systems, where many TV viewers depend on one antenna.

The "J" series are available for every VHF channel (2-13) as well as for FM. The antennas, which provide a minimum 10.5 db gain in the high band, and an approximate 8 db gain in the low-band, feature 75-ohm gamma match output. A built-on 75-ohm coaxial cable fitting, with cable connector and weather boot provides the highest possible degree of

electronic continuity. Irridited aluminum is used in the overall manufacture of the antennas, except for the steel mast mounting bracket. Elements are composed of 1/2 inch .062 seamless 6061T6 aluminum tube. All elements are reinforced by 5/8" sleeves and secured by double-bolted brackets to the 1 1/4" square boom. The longer low-band elements are sand-loaded to minimize the effects of vibration.



A NEW CB-AM ANTENNA . . .

which combines both citizens and AM broadcast bands in one antenna is now being introduced to the market by Antenna Specialists Company, Cleveland, Ohio.

M. R. Friedberg, president, reports that while the M-103 is carefully peaked for maximum CB performance, it operates equally as well for AM broadcast reception. "There are no switches to push," Mr. Friedberg said. "It's all done with the new Antenna Specialists automatic dividing harness." My merely turning on the CB rig, or the car radio, or both, the antenna is automatically and simultaneously switched over. Mr. Friedberg reported that the M-103 has clean lines is heavily chromed and is inconspicuous, yet has a "professional" air to it.

The M-103 is a center-loaded, cowl mount and fits in the 7/8"—1.3/16" hole normally provided for the average car radio. It is only 46" high in the operating position and telescopes to 31".

The automatic dividing harness fits under the dashboard out of sight. Only three simple connections are required for installation. It is equipped with a 1' low loss cable to the AM set; a 2' cable to the CB rig; and a 5' cable to the antenna. This harness is also available as a separate accessory, M-104, and will fit any ungrounded CB antenna requiring no more than 5' of cable.

"This is one antenna that will really capture the eye and please the CBer's wife," Mr. Friedberg added.

INTERNATIONAL RECTIFIER CORPORATION

DISTRIBUTORS:

Andrews Electronics
1500 West Burbank Blvd.
Burbank, California

Associated Radio Dis.
1583 Howard Street
San Francisco, Calif.

Basham Christensen Co.
2600 Mendocino Ave.
Santa Rosa, Calif.

Channel Radio Supply
18 East Ortega Street
Santa Barbara, California

Cook Electronics
210 East Hardy Street
Inglewood, California

Dunlap Electronics
824 Cherry Street
Chico, California

Dunlap Radio
355 M Street
Fresno, California

Dunlap Electronics
1012 6th St.
Marysville, California

Dunlap Electronics
419 10th Street
Modesto, California

Figarts Radio Supply Company
6320 Commodore Sloat Drive
Los Angeles 48, California

Hurley Electronics
1429 South Sycamore
Santa Ana, California

**Millers Radio and
Television Supply**
530 East 8th Street
Oakland, California

Norcal Electronics
1115 R Street
Sacramento, Calif.

Radio Parts Company
2060 India Street
San Diego, California

Schad Electr. Supply
499 S. Market St.
San Jose, Calif.

Southland Electronics
3610 University Avenue
San Diego, California

Styles/Engleman
2255 Bancroft
San Leandro, Calif.

Western Radio and Television
1415 India Street
San Diego, California

Wholesale Electr. Supply
265 South Laurel Street
Ventura, California

Now
the right
rectifier
always
right at
your
fingertips!

NEW IOR CADDY-KIT

**SAVES YOU \$3.22 ON ALL RECTIFIERS YOU REPLACE IN THE FIELD
(plus this \$1.50 divider-case free!)**

For the first time . . . the right rectifier right at your fingertips! No job time lost on service-calls to stop and shop for a needed rectifier replacement. And now, you also save \$3.22 on 16 IR rectifiers and kits — 10 types you use most often for repairing color and black & white TV, radios, hi-fi, phonographs, tape recorders, citizen band and 2-way radio equipment, etc. Regularly \$18.17 . . . but, for a limited time, the price is \$14.95. Clear, divided carrying case is your extra free bonus!

INTERNATIONAL RECTIFIER



SYMBOL OF QUALITY IN SEMICONDUCTORS

NEW IR RECTIFIER AND DIODE BENCH-CABINET

Save \$3.15 on all rectifiers and diodes for servicing TV, radio, hi-fi, etc. . . . plus get a permanent cabinet (a \$3.50 value) free!

31 widely-used
rectifiers,
germanium and
dual diodes
Regularly . . . \$28.10

Free 4 drawer
bench cabinet
Valued at . . . \$ 3.50
Total value . . . \$31.60

**SPECIAL
PRICE \$24.95**
**TOTAL
SAVINGS . . . \$ 6.65**



HURRY! THIS OFFER AVAILABLE NOW AT MORE THAN 500 IR SERVICE PARTS DISTRIBUTORS! VALUE ENDS FEB. 15, 1963!

See Us At The Pacific Electronic Trade Show — Booth 259B

INDUSTRY NOTES



CHARLES WACK

Wack To Discuss New Color Chassis At RCA Seminar

Mr. Charles Wack, Field Service Engineer for RCA Victor, will highlight the new RCA Color Chassis its improvements and service ability at RCA Distributing Corp., 6051 Telegraph Road on Monday Evening, February 4th at 7:30 p.m.

The program will also include a special discussion of UHF Today and Tomorrow as presented by Red Fisher of Blonder Tongue. A question and answer period will follow. The program will be moderated by Mr. Walt Pasner RCA Service Manager.

JFD AND DUNLAP ELECT. HOLD SERIES OF DEALER MEETINGS ON NEW LINE

A series of dealer dinner meetings were held last month by Dunlap Electronics and JFD Electronics to introduce the new LPV Antenna Line.

Beginning on Monday, January 21st in Walnut Creek the schedule included meetings in Modesto on Tuesday, Stockton on Wednesday, Orville on Thursday and Sacramento on Friday the 25th. During the week over 500 dealers attended the program that was under the joint direction of Mr. Bob McLean, Vice President of Marketing for Dunlap Electronics, Mr. Mort Leslie, Sales Manager for JFD Electronics and Mr. Joe Murphy, Western Regional Sales Engineer for JFD.

Irv Tjomsland To Direct Material For New MESD Technical Section

Mr. Irv Tjomsland, Technical Service Representative for the W. Bert Knight Company of Los Angeles, has been named to direct the new Technical Section of Modern Electronic Service Dealer Magazine.

Irv, a former Service Dealer himself, is well known throughout Southern California as well as nationally. He is the author of several articles and books in regards to servicing and is respected as an authority by dealers, distributors and manufacturers.

The Technical Section began in the January Issue of MESD and will be a monthly feature of the publication. It is designed to provide information that is not available from any other source and will actually seek problems from the dealers and solve them. The results will be field tested and then presented in article form.

Another feature of this new section will be the use of test equipment and how it can be turned into dollars. A question and answer section will also be provided with dealer participation solicited.

TV Picture Tube Sales Up For Fourth Straight Month

Monthly sales of television picture tubes at the factory rose again in October, continuing an upward trend which began in July, the Electronic Industries Association's Marketing Services Department reported.

Sales during October, the high month for 1962, totaled 879,588 units valued at \$16,678,099, compared with the September total of 866,512 tubes worth \$16,537,417. Year-to-date sales through October remained behind those for the comparable period of 1961. During the 10-month span this year, 7,662,386 TV picture tubes with a value of \$146,648,397 were sold. Last year the cumulative sales figure was 7,761,642 units worth \$154,557,278.

TWO NEW UHF STATIONS READY TO GO ON AIR

Following the entrance of KMEX 34, two new UHF stations are about ready to go on the air in the Los Angeles area.

Channel 22 has already begun a series of test patterns and Channel 28, an educational station operated by the Los Angeles Fire Department is slated to go on the air at any time.



IRV TJOMSLAND

BERMAN COMPANY ADDS LINES, INTENSIFIES COVERAGE

The Jack Berman Co., Electronic Manufacturers' Representatives with a main office at 1751 S. La Cienega Blvd., Los Angeles and a branch in Phoenix, Arizona, has just opened a San Diego branch manned by Harold Roades of La Mesa. This office will handle all product lines represented by the Berman Co. serving industrial and replacement parts distributors, audio specialists, and original equipment manufacturers. The phone number is 583-6457.

Mr. Bud Baker, formerly a Vice President of Newark Electronics, has been added to cover the San Fernando Valley and Pasadena sections of Los Angeles as well as Las Vegas, Bakersfield, Lancaster, and northern coastal cities to San Luis Obispo. Mr. Baker will be based at the Berman Los Angeles office.

New lines recently acquired are: Robertson Hi Fidelity Cabinets; Sherwood Hi Fidelity Tuners, Amplifiers and Speakers; and Clarostat Resistors and Controls.



BUD BAKER

HAROLD ROADES

MODERN ELECTRONIC SERVICE DEALER

WHAT TO SEE AT WEW / PETS

BARSTOW & DORAN, INC.

Trav-Electric Converters and Battery Chargers—manufactured by Terado Corp., St. Paul, Minn. Office and shop lamps, including magnifiers, manufactured by Swing-O-Lite, Inc., Hackensack, N.J.

CLEAR BEAM ANTENNA CORP.

Antennas-TV, FM, UHF, Indoor and Citizens Band.

EICO

Test Equipment—Marine and Ham Gear, Radios, High Fidelity, Home Systems,

Tape Recorders. All in kit form and factory wired—sold through distributors only.

G. C. ELECTRONICS— WALSCO ELECTRONICS DIV. OF TEXTRON ELECTRONICS

Chemicals, Hardware, Alignment Tools, Knobs for Radio, TV, Phono. Trade—Plugs and Jacks, Resistors, Citizen Band Antennas and Accessories, Chassis Punches, Phono Drives, Stereo-Hi-Fi Audio Accessories, Test Equip.

INTERNATIONAL RESISTANCE COMPANY

Resistors, Industrial and Military Controls, Concentrik, Snaprol and Exact Duplicate Controls, Rotary Selector Switches, Vinyl Electrical Tape, Transistorized Power Supplies, Precision Potentiometers, Precision Trimming Potentiometers.

JERROLD ELECTRONICS CORPORATION— DISTRIBUTOR SALES DIV. (SUBS. OF THE JERROLD CORPORATION)

TV-FM Reception Aids for the home, and TV Distribution Systems for the commercial, educational and industrial markets.

JFD ELECTRONICS CORP.

Log Periodic LPV TV Antennas, Transistennas, TV Colortennas, FM Stereo Antennas, Indoor TV Antennas, Service-Saver Accessories, Stand-offs, Exact Replacement Antennas, TV Tables, Mounts, Hardware.

KESTER SOLDER COMPANY

Kester "44" Resin Flux Core Solder, "Resin-Five" Flux Core Solder, Plastic Resin Flux Core Solder, Solid Wire & Bar Solders, Solders of Ultra High Purity Metals, Fluxes for Electronic Assemblies & Printed Circuit Soldering, Kester "Resin-Residue" Remover, Kester "Solderforms" and Soldering Accessories.

KRAEUTER & CO., INC.

Electronic Pliers.

LUXO LAMP CORPORATION

Portable Lighting Fixtures (Bench, Drafting, Inspection, Desk Lamps), Illuminated Magnifiers.

MASTER MOBILE MOUNTS, INC.

Amateur Communications Equipment Accessories.

J. W. MILLER COMPANY

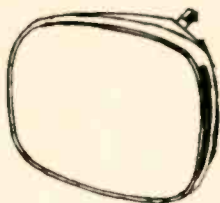
R.F. Chokes, Line Filters, I.F. Transformers, Line Filter Chokes, Replacement Coils.

PRECISION APPARATUS COMPANY, INC.

PACO ELECTRONICS CO., INC.

A complete line of Stereo High Fidelity and Test Equipment in both kit and factory assembled form.

PICTURE TUBE SAVINGS!



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BLACK & WHITE

- TOP QUALITY
- ALL SIZES
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WHOLESALE ONLY—DIRECT FACTORY TO YOU

Distributors of:

Westinghouse Receiving Tubes—Rogers Transformers & Yolks—
Test Equipment—Condensers—Resistors—Antennas—Everything
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5916 Whittier Blvd.
PA 1-2907

**RAYTHEON COMPANY
DISTRIBUTOR PRODUCTS DIV.**

Receiving, Picture and Industrial Tubes, Raytheon/Machlett Power Tubes, Control Knobs and Panel Hardware, Captive Hardware, Voltage Regulators (P.F. Voltage Regulating Transformers), Semiconductors, Diodes, Transistors and Rectifiers, Microwave and Power Tubes, Industrial Control Tubes, Industrial Cathode Ray Tubes, Transformers, Ray-sistors, Noise Source, Magnetostriction Filter, Piezoelectric Accelerometer, Circuit Pak, Stack Rectifiers, Computer Building Blocks, Ray-Tel C/B Transceivers, Microphone, Antennas, Crystals, Power Supplies, Photo Tubes, Neon Indicating Tubes.

**JOHN F. RIDER
PUBLISHER, INC.**

Books on: Electronic Technology, Electricity, Mathematics, Space Technology and Management. For: Electronic Technician, Engineer, Student, Kit Builder and Ham.

SECO ELECTRONICS, INC.

Tube Tester, Power Supplies, Transistor Testers, Two-Way Radio Test Equipment & Accessories, SCR Tester.

SIMPSON ELECTRIC COMPANY

Panel Meters and Test Equipment for electronic/electrical applications.

SONOTONE CORPORATION

Phonograph Cartridges and Needles, Microphones, Magnetic Heads, Electron Tubes, Nickel Cadmium Batteries, Dry Cell Batteries, Educational Headsets, Loudspeakers.

SOUNDOLIER, INC.

Architectural Loudspeaker Baffles, Enclosures, Baffle and Speaker Packages, Combinations Light and Sound Units.

**SPRAGUE PRODUCTS
COMPANY**

Capacitors, Resistors, Pulse Transformers, Precision Decade Inductors.

**TECHNICAL APPLIANCE
CORPORATION (TACO)
CONSUMER PRODUCTS DIV.
SUBS. OF THE JERROLD CORP.**

Television VHF and UHF Antennas, TV and FM Antennas, Reception Aids and Accessories.

TEVCO INSULATED WIRE

Complete line of Thermoplastic Insulated Wire and Cables, TV Lead, Sound and Communication Cables, Coaxial Cables, and Specialty Display Packaging.

**THE THOMAS & BETTS
COMPANY, INC.**

Wire Terminals, Tooling, Ty-Raps, Flat Tape Connectors, Taper Pins.

**UNION CARBIDE CONSUMER
PRODUCTS COMPANY—
"EVEREADY" BATTERIES**

"Eveready" Portable Radio Batteries—1963 promotion.

WINEGARD COMPANY

TV & FM Antennas, Amplifiers and all Equipment for complete Antenna Systems.

Tips for Better Business

CUSTOMER CARD FILE

One of the greatest things the small businessman can achieve, is the trust of his customers. The feeling of security on the customer's part will make them rely on your services again and again.

The simple use of 3x5 index cards might be the solution in gaining such reliance. These cards should include name, address, phone number of customer and make, model and installation date (if known) of the product.

When the customer finds it necessary to call regarding the condition of his or her product, nothing is more reassuring than to reach to a neatly organized customer card file, that contains pertinent "personal" information concerning their particular item.

Some service dealers find it useful to also keep a record of any past credit difficulties they may have encountered with that particular customer.



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FAST GUARANTEED SERVICE
MOST TUNERS SHIPPED
SAME DAY RECEIVED

Send Tuners with all parts to:
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SERVICE**

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Mailing—PO Box 675
Phone 349-5091

**WESTERN T. V.
TUNERS**

VHF Rebuilt\$9.95
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Broken or mutilated MAJOR
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Most tuners shipped same day
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Hoffman, one of So. California's largest TV service divisions since 1948 needs experienced T.V. servicemen; also one opening for an experienced transistor radio repairman.
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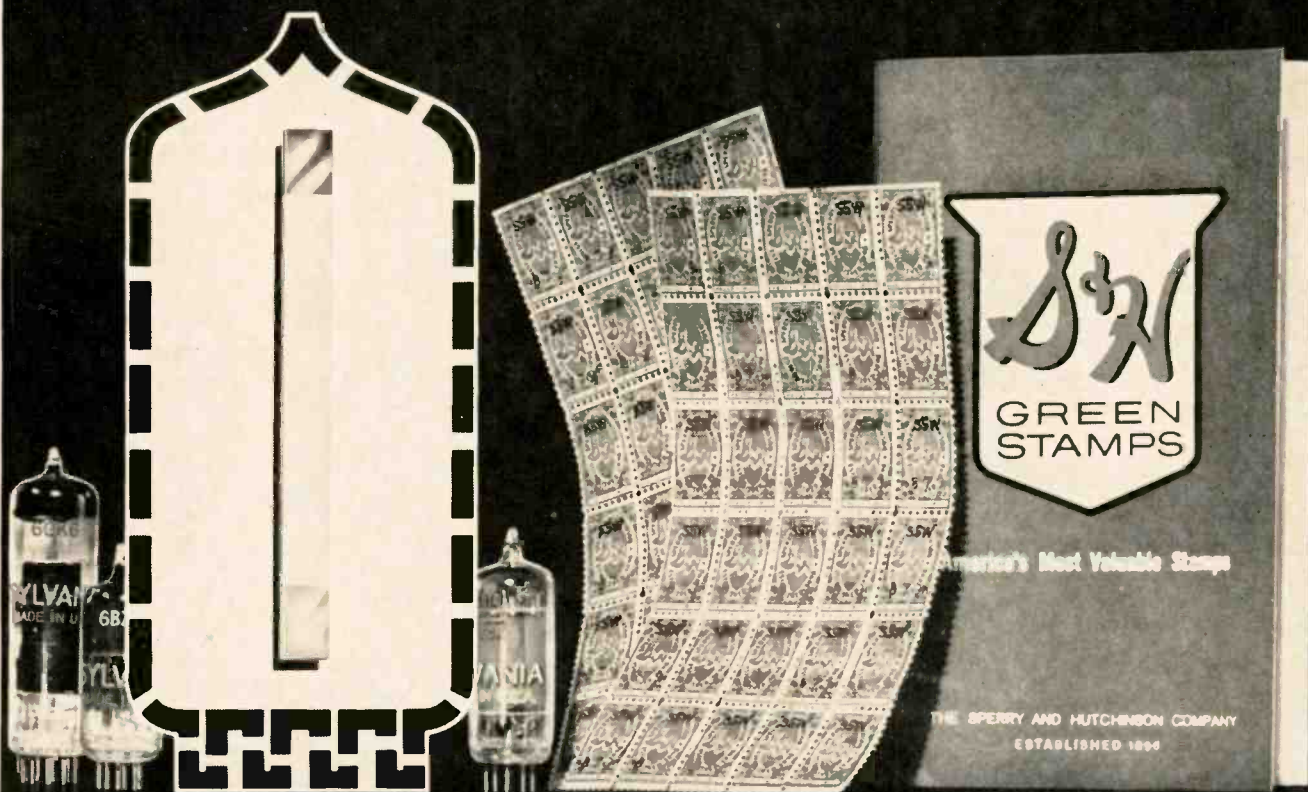
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BY PHONE: in Los Angeles call AXminster 2-0287. (This is the number of the Classified Dept. only) ask for GRAYCE KENNEDY.
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95c PER LINE, one time. **MINIMUM** 5 lines.
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This exclusive Sylvania advance is putting new life into tubes — and sales. It offers benefits you can really sell: virtual elimination of performance slump, a major cause of profit-stealing callbacks... significantly better tube life and uniformity. More than 90 types already have LIFE-BOOST cathodes, with more on the way...and it's being heavily promoted in national magazines and by mail.

- S&H Green Stamps, exclusive with participating Sylvania
- Distributors, go free to dealers with the purchase of Sylvania
- receiving tubes. They add up fast, especially when combined
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- S&H Green Stamps. Choose gifts from a 144-page S&H Cata-
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For some time now designers have been using many Amperex Frame Grid tubes in their quality TV receivers and we can tell you now that even more Amperex tubes are being designed into the sets you'll be handling in the future.

Compare, if you will, the performance of Amperex Frame Grid tubes with conventional IF tubes: they provide 55% higher gain-bandwidth, increase TV set reliability by simplifying circuits and they make your servicing easier, faster and more profitable because their extraordinary uniformity virtually eliminates time-consuming realignment when you replace tubes. Technicians are finding Amperex THE line to carry.

Tubes introduced by Amperex and currently being used by major TV set makers include:

<i>Frame Grid</i>				<i>Others</i>	
2GK5	4GK5	6GK5	6EH7	6AL3	9A8
2ER5	4EH7	6ES8	6EJ7	6BL8	15CW5
3GK5	4EJ7	6ER5	6HG8	6BQ5	16AQ3
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For optimum customer satisfaction and maximum profit operation for yourself, make room in your caddy right now for the identical, matchless-quality tubes designed into the original sets. Next time you visit your distributor look for the green-and-yellow box and ask about Frame Grid tubes for TV and other entertainment replacement applications. Amperex Electronic Corporation, 230 Duffy Ave., Hicksville, L. I., N. Y. In Canada: Philips Electron Devices Ltd., 116 Vanderhoof Ave., Toronto 17.