# R <br>  

## Just Published



## Your Copy Awaits

## You'll Want a Copy of this Authoritative Book

The new Yaxley Replacement Volume Control Manual is the most complete and authoritatively accurate volume of its kind ever published. Every page is the result of extensive laboratory and engineering research. No one interested in volume controls can afford to be without it . . . and it's free!

A complete manual of volume controls has been attempted often but never before accomplished. This new illustrated book of more than 100 pages is more definitely helpful than any authority. With other invaluable information it lists the 30 new Yaxley Replacement Volume Controls that will service $98 \%$ of the 3200 set models now in existence. It shows, for example, how 4 Yaxley controls will cover 1398 models . . . how a single control will service 618 different models.

YAXLEY MANUFACTURING CO., Incorporated Division of P. R. Mallory \& Company, Incorporated INDIANIPOLIS, INDIANA Cable Address: Pelmallo


You want to hnow about this new Yaxley Replacement Volume Control. It's the greatest advance ever made ... the liggest boon to service men ever developed. <br> \title{
car radoós great
} <br> \title{
car radoós great
}

## Thif amating

A POWERFUL 6-TUBE SET WITH AIRPLANE
tYpe remote control dial for steering
COLUMN OR INSTRUMENT PANEL... SIMPLIFIED INSTALLATION AND OTHER REAL FEATURES...PRICED TO SELL FOR

## \$3995



ARVIN"JOY-RIDE" MODEL No. 16
 chromium plated instrument panel plate. Above-Control as it goes on steering column.

YOU'VE GOT the price problem whipped to a standstill when you take on the new Model 16 Arvin Joy-Ride-a high-powered, long distance radio with de luxe set features-a radio at a figure that makes people open up and buy. The Arvin Joy-Ride is building volume almost over-night for dealers everywhere. It's a real sensation.

Six tubes--the modern Airplane Type remote control dial for installation in the instrument panel or on the steering column-glorious tone and volumequality and features never before offered in a lowpriced set. And you'll like the way the Joy-Ride goes in a car-installation is so simple.

Don't waste any time about getting the Arvin JoyRide in stock. It's the livest number of the year and it's going to put money in your pockets. Call an Arvin jobber right away-or write us.

NOBLITT-SPARKS INDUSTRIES, Inc., Columbus, Ind.
Also Makers of Arvin Hot Water Car Heaters and the Complete Arvin Car Radio Line

## ZENITH ADDS THE "MINUTE HAND"... Split-Second Tuning! <br> TRY TO SET A CLOCK ACCURATELY WITHOUT A MINUTE HAND TO GUIDE YOU! <br> HAIRLINE ACCURACY NOW POSSIBLE IN LOGGING AND RELOCATING ALL FOREIGN SHORT WAVE STATIONS



Everyone has been fishing for foreign short wave stations. Now they can log them . . . return to them . . . just as accurately as you can set a clock to the minute! Zenith has added the "minute hand" to radio with SplitSecond Tuning!

An extra hand now travels over the $360^{\circ}$ face of the dial so that any station in the "sensitive areas" clearly indicated on the Zenith airplane dial can be tuned in without a minute's delay . . . time after time! London . . . Paris . . . Madrid . . . you can't miss them!

Here's a new radio feature to sell to thousands of short wave fans who are now fishing for foreign short wave stations! No other radio can offer it ... it will sell Zenith short wave sets without even turning on the receiver! Just demonstrate it! It's fascinating-it's a genuine sales feature! Inquire about the Zenith franchise at the same time you get the details of these Split-Second 'Tuning sets!

The complete Zenith line ranges from $\$ 29.95$ to $\$ 750$ for the De Luxe model. Prices slightly higher west of Rockies - subject to change without notice.

See these and other models on exhibit at the Zenith Booth, National Electrical Exposition, Madison Square Garden, New York, Sept. 19th to 29th


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ZEVITH MODEL $=30$ TRIPIE FILTERITG A ten tube set, all wave model. Includes Shadowgraph wish Split-torium-typedynamic speaker. Tunes from 535 to 48 , 000 kilocycles. Handsome
modern cabinet. $\$ 120.00$


ZEVITII MODEL 835 TKIPLE FILTERING Same chassis as Model \$80, includes Shadowgraph with SplitSecond Tunizg. Ilundsome table model with chrome gritie and of the most sslective and puwer ful tiable models ever $\$ 89.95$


# The ALL-WAVE RADIO everyone is talking about! 

Covers 540 to $25,000 \mathrm{KC}(555$ to 12 meters)
Reaches out with extrente sensi Reaches out with exirence sens
tivity-yet is amazingly quiet.

Operates with equal efficiency at apll points on the dial-no dead spots.
"Hangs on" unbelievably well
to atationn that fade.

No. 68 All-Wave Radio (Illustrated). Push-pull Class A Trione Amphifacation. 15 Wratis Automatic Volume Control. Low Tone Comuensation, Selectorlite Dial. Price $\$ 175$ (East of Rockies).

A radio with the splendid Stromberg-Carlson Natural Tone, not only on American standard but on foreign short wave programs as well.
The tuning of short wave stations with its unique Selectorlite Dial fascinates every prospect who comes into your store - no matter what radio they originally came in to see.
I. H. Kattell, of Binghamton, New York, official Short Wave Observer for a technical publication in New York, says: "This is the first receiver I have ever had in my 18 years' experience in radio that I was not disappointed with in some way or other".

Stromberg-Carlsons range in price from $\$ 69.50$ to $\$ 889.50$ (Tast of Rockies) Desirable dealer territories and outlying distrilutor territories available.
"There is nothing finer than a Stromberg-Carlson"

Strobberg-Carlson Telephone Manufagturing Co., Rochester, N. Y.

RADIO RETALLING. September, 1934 . Yol. 20, No. 3. Published monthly, price 25 c . copy. Subseription rates-United States and Central and South American countries




From the Arctics to the Tropics - East to West in forty countries - on airplanes, naval craft, automobiles, and police cars-in long-distance amateur sets and rich-toned home radios - in the initial equipment of $60 \%$ of the country's licensed set manufacturers . . . you'll find millions of Raytheon 4-pillar Tubes.

Raytheons are so widely chosen because of sheer quality.* Twenty thousand dealers and eight hundred distributors handle them, not only for the complete customer satisfaction they assure, but also because there's a sensible profit in them. Raytheons are marketed under a policy of full list prices. The guarantee that goes with them assures the user his full money's worth. The sales promotion behind thenl is more vigorous than ever. For good profit. good-will building and a growing tube business, take on-and push-Raytheon 4-pillar Radio Tubes.

RAYTHEON PRODUCTION CORPORATION
30 E. 42 nd St. 55 Chapel St. 445 Lake Shore Drive 555 Howard St. New York City Nouton, Mass. Chirago San Francisco

More than 95 minute peces of wire, metal and chemicals are processed with micros opic accuracy into the assemblage of Raytheon 4-pillar Tuhes-giving to them an unrivaled sensitireness und a fixer, accurate balance. 4-pillar element support gives it a mitchless sturdiness that defies jolts und vibration and makes Raytheon an outstanding favorite, particularly where rough unage is likely and where dependability and long life are ital factors. The only radio iube with a distinctive and axclusire sales feature-4-pillar construction!
 effective selling aids offred free to Raytheon dealers. RAYTHEON

## CDMPIETE 1 scange



Model 1152-11 tubes. Four band, truly all-wave set. 550 kilocy:les to 21.7 megacycles. 10 inch Synchro-(lynamic speaker.


Model 1151-11 tubes. Four band, truly all-wave set. 550 kilocycles to 21.7 megacycles. 12 inch Syr.chro-dynamic speaker.


Model 753-7 thes. Four band, truly ail-wave sei 550 kilocycles to 21.7 megacyces. 10 inch Synchro-aynamic spsaker.


Model 752-7 tubes. Four band, iruly all-wave se!. 550 kilocycles to 21.7 megacycles. 10 inch Synchro-dynamic speaker.


Model 751-7 tubes. Four band, truly all-wave sel. 550 kilocycles to 21.7 megacycies. 10 inch Synchro-dynamic spezker.


Model 671-6 tubes. Four band, truly all-wave set. 550 kilocycles to 21.7 megacycles. 8 inch Synchro-dynamic speaker.


Model 662-6 tubes. American, =hort-wave, and foreign receptian. 540 to 1740 kilocycles and E. 5 to 16 megacycles. 8 inch Synchro-dynamic speaker.



Model 661-6 tubes. American, short-wave, and foreign reception. 540 to 1710 kilocycles and 5.5 to 16 megacycles. 8 inch Synchro-dynamic speaker


Model 651-6 tubes. Dual range- 550 to 4000 kilocycles. Regular, police, and amateur reception. 8 inch Synchrodynamic speaker.


Model 660-6-tube table model with the same range as model 661 ; from 5.5 to. 16 megacycles. 8 inch speaker

## FRDM <br> II /I


-And
Sensationally Priced from \$19.95 Up . . .

## A

 compact table model that dealers, in a blind test, guessed was priced four to six times higher! . . A skip-band model that actually got more foreign stations than sets costing three times as much! . . . A magnificent, powerful 11-tube receiver eclipsing the field in world tuning!... thirteen other sensational sets! What a line!Every set is Grunow quality; every one is precision-built. Value, appearance, performance - only Grunow could have built rings around the industry so convincingly. The exclusive Signal Beacon brings in elusive faroff stations for a

1934's most
outstanding lire-the sensation of everyprice range. Signal Beacon the biggest feature of world tuning.
blind man. A pre-amplifier, operating on all wave bands, gives more power, hushes noise. Provision is made for the Doublet Antenna, the scientifically perfect lure for foreign reception. A Dual Drive Tuner makes dial adjustment 5 times
eatier - 5 times more accurate. his new Grunow line closes sales, whatever the preference.Insalesmeeting after sales meeting, hard-boiled de ders have gone wild about it! Get in ouch with your Grunow distributor quickly if you don't want to miss 19.4's biggest radio profit-producer.


Model 750-A 7-tube lable model with the same 4 band, Alluave chassis as model 753. 8 inch Synchro-dynamicspeaker.


Model 670-6-tube table model with the same 4 band, All-wave chassis as model 671 .


Monel 650-6-tube table model wilh the same dual range chassis as model 651.


Model 550-A compact ACMODEL $550-$ - compact AC-
DC 5 -tube table model. 550 to DC 5 -lube table model. 550 to
1720 kilocycles. 5 inch speaker.


Model 46C-t-tube comnact lable model. 510 to 1740 hilolable model. 510 to 1740 inch Synchro-dynamic cycles. 8
speaker.


Model 450-4-tube table model. Covers regular broadcast and both police bands and amateur stations up to 4000 kilocycles. 8 inch Synchroklocycles.
dynamic speaker.


IIRECT to the heart of the market, Kingston's six-model line carries the sales punch of consistently brilliant performance! There are models to meet practically every profitable demand - a compact AC-DC, three table styles, two consoles.
Engineered to the most exacting standards, embodying more than 10 years' experience, air-tested both here and abroad, Kingston receivers add the satisfaction of genuine entertainment to the lure of DX tuning for international broadcasts.
Back of the line are the resources and good faith of a manufacturer whose proud record of integrity and progress extends a third-of-a-century into history. The name Kingston is an established symbol of quality. Take the Kingston line to bigger profits, through sales concentration and inventory control. Get the details of the Kingston proposition now. Your inquiry involves no obligation - write today.
KINGSTON RADIO COMPANY, KOKOMO, INDIANA Export Division - Cable Address, Kingrad, Cbicago. Codes: Bentley's, Acme, W'estern Union A SUBSIDIARY OF KINGSTON PRODUCTS CORPORATION
> - Morlel 5.5 AC-IDC Comi-1P:le- (shown at right) The year' outstanding compact table model AC-DC receiver. Superheterodyne five tubes, 2 No. 78,1 No. 77,1 No vernier tuning; volume control and vernier tuning; volume control and kilocycles; heat-dissipating cord; re quires no outside antenna; receives police calls in addition to regular broadcast stations. Striking semi moderne cabinet $8^{\prime \prime} \times 11 \frac{5}{\prime \prime} 8^{\prime \prime} \times 5 \frac{1}{4 \prime}$ Few receivers in or near the price class will equal Model 55 in tone engineering feaner beaury. Price


Model 50DA-(shown - Moder Bans-(shown at left) A splendid S-tube AC Superheterodyne receiver with a tuning range of 190 to 555 meters. Six tuned circuits. Chassis, tuning condenser and dial assembly "floated" on rubber. Automatic volume control, selective tone adjustment. Airplane type illuminated cial. Special $61 / 2$ dynamicspeaker. Hand rubbed
cabinet $16^{\prime \prime}$ high, $11 / 2^{\prime \prime}$ wide, Bixc ice $\mathbf{8 4 7 . 5 0}$

- Model 100 A - A six-tube superheterodyne which gives ninetube performance, by the use of "dual purpose" rubes. High frequency mpliner stage. Six tuned circuits. speaker. Switch and tone control combined. Tuning
range covers sandard American band and certain
police and amateur stations, 170 to 555 meters. Price
- Model 600IE Comsole - This receiver uses the same chassis as the Model 600 A table receiver. A specially designed heavy duty $8^{\prime \prime}$ as the Model 600 A table receiver. A specially designed heavy duty $8^{\prime \prime}$
dynamic speaker is employed. The cabinet is in the moderne manner with overlays of American Walnut, Oriental and

- Model 7001 Console-This receiver uses the same chassis as the Model 700A table receiver illustrated in this advertisement. The encasement is a beautiful console cabinet. Its design is enhanced by an unusual arrangement of overlays.
Height $361 / 2^{\prime \prime}$, width $2152^{\prime \prime}$, depth $111 / 2^{\prime \prime}$. . Price


## The TUNG-sol time-tested

## Consignment Plan

## provides Powerful Protection plus Proven Practicability

The Tung-Sol consignment plan was submitted to the trade on May 1, 1931-the first and only national effort to protect the retail merchants' profit. A pioneer plan that succeeded because-

1 It insures the full profit merited by merchants who build business on the firm foundation of quality merchandise.
2 It insures protection from cut-throat competition.
3 It insures elbow-room for all by selling only to selected retailers.
4 It protects against loss due to price declines and obsolescence.
5 It insures an adequate stock without investment.

## The Highest Possible Quality Makes This Time-Tested Consigmment Plan Successful and Profitable

The backbone of the Tung-Sol business is the determination to build only the best radio tubes that can be made. Distribution is second in importance compared with uniform, unfailing quality --that is why Tung-Sol sales increased more than $150 \%$ last year!

The best possible product offering the best possible performance and sold by the best possible retail partners - that is the whole story of Tung-Sol success.

Send for complete details of the Tung-Sol Time-Tested Consignment Plan.

 dial will bring in every radio signal that it is possible to receive at that time and place. All means ALL in Atwater Kent $A L L$-wave radio.


ALL WAVE-Model 318 K - 8 -tube superheterodyne with 9 tuned circuits-complete world-wide range from 540 kilocycles to 22.5 megacycles-in 4 separate tuning bands- 2 -speed tuning, approximately 6 to 1 and 60 to 1 ratios - shadow tuning 6 watts undistorted output-11-inch electro-dy namic speaker. Beautiful lowboy cabinet of choice
 tical pronerties. $\$ 89.90$ f.o.b. factory.
 lowest price

THIS YEAR is an all-wave and short-wave year. This year is also an Atwater Kent year-because Atwater Kemt has the hottest line of all-wave sets and foreign short-wave and broadcast sets in the business.

Any radio engineer can change the design of a broadcast receiver to make it bring in short waves-or even to make it


ALL WAVE-Mode: 447-7-tube superheterodyne, 9 tuned circuits. 4 tuning bands cuits. 4 tuning bands
include complete worldinclude complete world-
wide reception, from wide reception, from
540 kilocycles to 22.5 megacycles. 4-point tone control, 8-inch electro-dynamic speaker, illuminated shadow tuning. Top quality at $\$ 74.50$ f.o.b. factory.

ALL WAVE-Model 112S. We know of no other radio at any price that matches the performance of this 12-tube Atwater Kent. 10-kilocycle selectivity over entire tuning range- 15 watts output-4 tuning hands - 540 kilocycles to 18 megacycles - bass compensation - true high fidelity reproduction. $\mathbf{\$ 1 8 0 . 0 0 ~ f . o . ~ b . ~ f a c t o r y . ~}$


ALL WAVE-Model 559N-9-tube superheterodyne, 11 tuned circuits-range from 540 kilocycles to 18 megacycles in 4 bands, 6 -section gang condenser, 2 -speed tuning 6 to 1 and 60 to 1 ratios, 11-inch speaker, 4 -position tone control has usual low medium and high tone pitches with high selectivity and 4th with low selectivity and high faithful tone reproduction. $\$ 1 \mathbf{1 9 . 5 0}$ f.o.b. factory.



## FOREIGN SHORT WAVE and BROADCAST

On this page are the Atwater Kent short-wave and broadcast receivers for 1935 . They are distinguished by the airplane dial . . . illuminated 3 ways. Ranges extend from 540 to 1600 -from 1650 to 4350 - and from 5500 to 15,500 kilocycles. Within these ranges are all American hroadcasting, all police, airplane, amateur frequencies and forcign sliort waves.
an all-wave receiver-but the quality of the set will always depend on the quality of the radio he started with-and quality is terrifically important in an all-wave radio. Atwater Kent engineers had Atwater Kent quality to start with!

Prices Subject to Change Without Notice.
atwater kent manufacturing company
A. Aiwater Kent. Pres.

PHILADELPHIA, PA.


SHORT WAVE and STANDARD BROAD-CAST-Model 325 E -offers the thrill of foreign roadcasting plus everything that is broadcast in America, with a rich, truthful tone. 5 -tube superheterodyne with 6 tuned circuits and 3 separate tuning ranges- 2 -speed tuning- 11 -inch electrodynamic speaker, automatic volume control, tone control, attractive cabinet. $\$ 49.90$ f. o. b. factory.


SHORT WAVE and BROADCAST Model 206 - 6 tube superheterodyne. 7 tuned circuits, 3 tuning bands cover foreign short-wave, all police, airplane and mateur channels as well as all American broadcasting -2 -speed tuning - 8 -inch speaker. Highly selective yet extremely quiet in operation $\$ 49.90$ f.o.b. factory

## SHORTWAVEand

 BROADCAST Model 145-5 tubes -6 tuned circuits3 tuning bands include foreign shortwave broadeasting. all American broadcasting, and police, a mateur, airplane frequencies. $\$ 39.90$ f.o.b. factory.

SHORT WAVE and BROADCAST-Model 376-K6-same chassis as Model 206 put in K cabinet - tuning ranges from 540 to 1600 kilos, from 1 ; 600 kilos to 5 megacycles, and from 5.7 to 15.5 megacycles, 11 -inch electro-dynamic speaker, 2 speed tuning, 3 point tone control, 3.3 watts undistorted output, 3 -gang condensers, very sensitive circuit, highest selectivity. \$69.90 f.o.b. factory Also put in E cabinet at $\$ \mathbf{5 9 . 9 0}$ f.o.b. factory.



Here are the Leaders in Emerson's COMPLETE Line . . . Meeting Every Demand and Every Price

## Hitch your 1935 "Sales Wagon" to this Star

1. 

OUTSTANDING VALUES. Operating at high production efficiency, Emerson is able to produce higher quality at lower cost-in eye value, performance and exclusive technical features.
2. LESS INVESTMENT. The "balance" of the 1935 line enables distributor and dealer to cover entire market range with SMALL NUMBER of models and low inventory investment.
3. GREATER PROFITS. By granting full discounts3. without resorting to drastic cuts on low priced models -Emerson sees to it that distributors and dealers make a legitimate profit.
4 CONCENTRATED ADVERTISING. Emerson is t. featured in advertising on an intensive local basiswhere the goods are sold.
5. RAPID TURNOVER. Greater value, longer profits, D. less investment, concentrated advertising, complete showings-all combine to keep distributors' and dealers' dollars in motion.

NOTE: Complete Emerson line includes models from $\$ 17.50$ to $\$ 99.50$.


AC-DC Compact. Model 416 Four-tube universal
aerial.
$110-120$
volts.
 whand rubbed walnut cabinet. 10 inches

$$
\$ 1995
$$



ROUND-THE-WORLD. Model 38
Six-tube AC-DC superheterodyne. 170 to 555 meters and 19 to 5.5 meters.
$110-120$ voltz-available for 220 volts. Receives all standurd American 110-120 voltz-available for 220 volts Receives all standurd Amerion police calls. Aeroplane dial with "Dno-Lite" band switching circuit. Dynamic speaker, altomatic volume control. Walnut cabinet. $121 / 2$ in. wide. With RCA Radiotrons. List Price

## \$3950

Model 38LW. 19 to 2000 meters Sane characteristics as model 38 . Has phono-
graph pick-up jack. Slightly higher in price


AC Compact. Model 23
Short-and-Long Wave. Model 28 Five tube AC superheterodyne- 100 to 555 meters -receives regular broadcasts, police. aeroplane calls. etc, $110-120$ volts, 60 cycles-also available for 220 volts. Dynamic speaker, automatic overload control. Walnut upright table cabinet $171 / 4$ in.
high. With
RCA List Price
\$31 19
Four tube AC superheterodyne. 170 to 555 meters-recruat broudcasts, police, amateur and acroplane calls, $110-120$ volts. 60 -
cvele. Available for 220 volts. Dynamic spealier. Walnut cabinet. 11 in. wide speaker. Walnut cabinet,
With RCA Radiotrons. List
$\$ 22$ 은

# with 5 Star Features ...again Living Up to the Fact - "World's Biggest Selling Little Radio" 

Here are New Classics in Design . . . New Developments in Construction . . . New Powers in Long-and-Short Wave Reception . . . New Trade Opportunities


Emerson "Duo-Lite" and "Quadro-Lite" Instant control over all wave bands. Sectors are illumi nated only as they are selected.


All Wave. Model 71 Seven-tuhe AC superheterodyne. 13 available for 220 volts. Four wave Lite, band Aeroplane dial with "QuadroLite" band switching circuit. 8 -inel dynamic speaker automatic volumo
control and tone control. Walnut right table cabinet $\% 1 \mathrm{in}$. hiah. Winh RCA Radiotrons. List pice
\$6950

All Wave. Model 770 (At Right)
Seven-1ube $A C$ superheterodyne. $1:$ able for 220 volts. Four wave ranges. Aeroplane dial with "Quadrolite" hand switching circuit. 12 -in. dynamic speaker. automatic volume control and tone control. Walnut RCA Radiotrons. List price


Round-the-World.
Model 45
Six-tuhe AC superheterodyne. 170 to $110-120$ meters and 19 to 55.5 meters. volts. All standard and American foreign all important American and police calls. Aeroplane dial with "Duo-Lite" band switching circuit. Dynamic speaker. automatic volume oontrol. Phonograph pick-up jack. Walnut upright table cabinet $163 / 4$ in. high price
\$4450

Hodel $45 L W, 10$ to 2000 meter Same characteristics as Model 45

## INVITATION

(Duration of Radio Show) See Emerson's booth at Madi son Square Garden-call at our demonstration rooms in Hotel Edison (Suite No. 2102) and then see how these and other models are produced by visiting Emerson's modern plant at 111 Eighth Avenue, New York City.
A Cordial Welcome Awaits You


- In the theatrical world, opening night foretells the success or failure of any new production. Perfection in every last detail of a stage premiere is therefore vitally important.

To radio manufacturers, every demonstration of a set is an "opening night." First impressions here are equally important!

That is why leading set manufacturers install Sylvania Tubes as original equipment. They know their sets will perform best with tubes that have been tested and proved for their own circuits!

Sylvania Tubes are built by one of the world's largest companies specializing in electric vacuum tubes. Hygrade Sylvania pioneered in the development of the efficient 6.3 volt tubes that made automobile
radios practical. Later, Sylvania engineers were instrumental in perfecting the complete 6.3 volt group for general use. And in the sciences of radio transmission and electronics, also, Sylvania has made outstanding contributions.

Set manufacturers are invited to consult Sylvania engineers and avail themselves of Sylvania's complete Circuit Laboratory in solving their circuit and design problems. No obligation incurred.

Dealers and jobbers handling Sylvania Tubes benefit from the support of the financial, engineering and sales departments of a company whose financial rating has always been AaAi.

Write for full details. Hygrade Sylvania Corporation, Emporium, Penna.

Sylvanias


## Only "F-M"has it!.

The biggest Sales Feature built into radio this ysar.


## THE NEW <br> INTERNATIONAL travelite DIAL



Model 814: 8-tube,
dual band superhet dual band superher-
erodyne, $8^{\prime \prime}$ dynamic erodyne, speaker, automatic spelume control with inter-station noise supreressor, full range
tone control, excellent sensitivity and selertivity. "Travelite" dial range $540-$
3500 K . $\mathrm{C} . \mathrm{RCA}$ Radiotrons: 1-2A5;
$3-56 ; 1$-57,2-58; I-8o. List
Price.... $\$ 5450$


FAIRBANKS-MORSE
Afome Afome Cppliances,inc.

## Replace Guess weith LOGIC

When one tube manufacturer, 6 out of 7 times, is first with the newest, and the industry each time follows...
when that manufacturer constantly creates higher and more rigid standards . . . when that same manufacturer builds and ships tubes conforming more closely to such standards than is indicated by competing products...
when that manufacturer's tubes gain national and world-wide recognition and distribution...
then it is obvious why Arcturus is the quality tube of the industry.

Logic dictates that you should use and sell that tube.

Your selfish interest demands it.
Arcturus Radio Tube Co., Newark, N. J.




Model 104-All.Wave World Reception. 4 bands. 10-tube superheterodyne. Viso-Glo tuning. Range from 540 K . C. to 20 Megacycles.
$\$ 159.50$


Model 65-AC.DC. All. World Reception. 2 bands. 6-tube superheterodyne. $6-$ tube superheterodyne.
540 to 1600 K . C. and from 19 to 55 meters. $\$ 39.95$



Model 67-All-World Recep Model 67 -All- World Recep
tion. 2 bands. 6 -tube super. tion. 2 bands. G-tube super-
heterodyne. Range from 540 heterodyne. Range from 540
to 1600 K . C. and 19 to 55 meters. $\quad \$ 57.50$


Model 53-AC-DC. 5-tube superheterodyne. 540 tol 1600 K.C. Police calls. Automatic volume control. $\$ 24.95$

Model 83-All-Wave World Reception. 4 bands. 8-tube superheterodyne. Viso-Glo tuning. Range from 540 K . C. to 20 Megacycles. $\$ 124.50$

Model 464-Baked lacquer on rust-proof steel; stainproof porcelain interior. 8.5 sq . ft. shelf area. 42 ice cubes. $\$ 127.50$. ( 5 other models to $\$ 438.50$.)

## MAIL THIS COUPON TODAY

THE SPARKS.WITHINGTON COMPANY
Jackson, Michigan, U. S. A.
Please send full information about Sparton Radios for 1935 .

Name

Address ........................................................................................................

City............................................ State.


## Westinghouse

 GIVES YOU A Completo
## RADIOLINE

that...appeals to the eye and ear... is popularly priced ...offers you full dealer discounts... on ALL MODELS... and adds a powerful and distinctive sales aid... "AS FEATURED IN THE 'HOME OF TOMORROW'"

- Westinghouse offers you the above features in this new, complete radio line. Every advantage has been taken of favorable market conditions to produce a superior product to sell at popular prices. Yet YOUR profits are still amply protected.

The Westinghouse dealer organization is being rapidly developed but there are still some communities where the opportunity is still open. We suggest that you write us today, or communicate with the nearest Westinghouse distributor. Just address Westinghouse, 150 Varick Street, New York City.

## Westinghouse Radio



Standard Wave
Standard Wave
Compact Model W I -20


[^1]HOUSE
NEEDS
w
NESTING HOUSE

# RADIO RETAILING 

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## Assistant Editor

Art Director

# $N_{E W S}$ and $V_{I E W S}$ 

## 1,774,700 SETS, JAN.-JUNE

Total sales of radio receivers, by "licensed manufacturers," for the first half of ' 34 are reported as slightly in excess of $1,774,700$. This tops the record for 1933 (1,436,000) by 338,700 sets. Estimated retail dollar volume rise was even greater-from $\$ 42,000,000$ to $\$ 70,000,000$.
As could be expected, sales for the second quarter, 1934, fell below those of the January to March figure790,000 as against 984,700 sets. Also a drop from the corresponding second quarter of 1933-which was 848,300 sets.

The average unit price, however, shows an appreciable gain, having risen from $\$ 33.60$ for the second quarter of 1933 to about $\$ 40.50$ for the second quarter of the current year. These figures confirm other evidence that consoles are coming into the foreground again.

Automobile radio sets have not come up to expectations for 1934. Sales of these units have run behind the budgets set up by the makers at the beginning of the year, based on 1933 sales. It is this drop in automobile sets which mainly accounts for the 1934 second quarter falling behind 1933 for the same period.

Averaging the half-year ratios shown here and apply-
ing them to the figures for the first half of 1934, indicates the total production for 1934 will be about 4,400,000 radio sets.

## BATTERY SET BUYING POWER

The story of the drought was news and therefore received wide publicity. But radio dealers in touch with rural, non-electrified markets should realize that well over 40 per cent of the farm land area of this country was not affected. In nine agricultural states crop and livestock output will exceed the past 10 -year average by approximately 10 per cent. Twenty-one other states will yield from 80 to 95 per cent of the 10 -year average.

And the farmers will get more for their products! The farm income for the last six months of 1934 will be approximately $\$ 5,000,000,000$. This is more than double the farm income for the last half of last year and is in excess of any year since 1929. Corn prices are more than double last year's prices. The wheat prices are increasing daily and are, of course, greatly in excess of those of 1933. This, coupled with the Government benefits which will approximate $\$ 500$,000,000 during the second half of this year, will make this market for sets all the more attractive.



IN JUST A FEW WEEKS the World's Series takes the air. Already millions of baseball fans are avidly reading the sports columns, following their favorite clubs.
And when the kingpins of the two Leagues fight it out, play-by-play descriptions broadeast by the national chains will furnish a radio drawingcard second only to championship heavyweight fights as a business builder.
How is the trade going to use these broadcasts?
Charles Zehner, president of Distributors, Inc., Los Angeles, makes this suggestion: Build an animated scoreboard. Reproduce each game right outside the store and so permanently engrave your name and location upon the memory of the crowd.
This is no untried plan. Southwest Radio Service has used the idea for years, claiming excellent results. This dealer's board (cost, $\$ 25$ ) is 5 by 10 feet overall. White lights, operated from a switchboard, show the position of the ball. Red lights indicate the progress of players. And others record balls, strikes, runs, innings.
"Southwest Topics," a local newspaper, furnishes telegraphic reports, posts its name on the scoreboard by way of compensation. The store hires an experienced diamond man to analyze each play, announce these over a public-address system. Scoresheets bearing the name and address of the store are distributed to the crowd, neighboring homes. And, last but not least, the newspaper gives both store and board columns of publicity.
An excellent promotion stunt, this, and worthy of our label: "Merchandising Idea of the Month."

## 352 DEALERS COMMENT ON TUBE POLICIES

If the dealers determined the tube policies of the industry, what discounts and distribution methods would they vote for?

As we go to press replies are still being received in response to a post card questionnaire sent to 5,000 typical dealers and service men throughout the country by the National Union Radio Corporation, New York.

Analysis of the first 352 replies show that 87.7 per cent of all radio dealers operate a service departmentand attribute 30.2 per cent of all income from this department to the sale of tubes for replacement purposes.
"What discount," these dealers were asked, "will return a fair profit and still be low enough to discourage price cutting?" An even 50 per cent favored a $40 \%$ discount; 48 per cent voted for either $40-10$ or $50 \%$.

While a slight majority of the dealers themselves56 per cent-want higher list prices, with gross margin
held to $+0 \%$, a much larger majority ( 67 per cent) believe that the public should, and will, pay more for its replacement tubes.

With respect to consigmment versus outright purchase: Given a choice between tuhes on consignmentat $10 \%$ lesser discount-or outright purchase, with a $10 \%$ wider spread. 217 dealers ( 67 per cent) voted for the latter plan while 33 per cent allowed that they would take the smaller profit for the sake of the convenience of consignment.

## SALES-MINDED SERVICEMEN

Servicemen must first and foremost be good technicians. For upon the excellence of their work depends consumer goodwill, goodwill which not only insures repeat business for repairmen but also creates greater confidence in radio generally and so reacts to the benefit of the entire industry:

But the modern serviceman does not stop at mere repairs. He has become sales-minded, realizing that any method which increases set sales automatically swells the number of installation and service jobs available to himself and to brother technicians. Excellent examples of what may be accomplished by organized servicemen in this direction are the recent "Auto-Radio Parades" sponsored by the Rochester and Cleveland Sections of the Institute of Radio Service Men. Such parades (described editorially on page 14 of the July issue. credited to the IRSMI on page 26 of this same number) should be contimued, even copied by other branches of the trade for the common good.

Servicemen have shown the way. Their organization is to be complimented for its initiative.

## "FIVE POINT" PLAN STATUS

Chairman Powel Crosley, of the RMA committee on the "Five Point" plan for the national stimulation of radio sales, will report the progress of this project before the directors of the Radio Manufacturers Association, meeting at the Commorlore Hotel, New York City, September 12. Following this session there will be a meeting with representatives of the Radio Wholesalers Association for further consideration and development of the purposes of this campaign.

May we suggest that immediate action is highly essential if this noteworthy project is to make its influence felt during the present buying season.

## MANUFACTURERS' SALES DIRECT TO DEALERS MUST CONFORM WITH WHOLESALING CODE

Washington, Sept. 6-Immediately following the close of public hearings held here today at the Raleigh Hotel, concerning the validity of Explanations 4, 5 and 11 applying to the Code of Fair Competition for the Radio Wholesaling Trade, Government Code Advisor General Ham-
: mond conferred with Deputy Administrator Frank H. Crockard and then issued instructions that all District Agencies be sent the following bulletins 4-A and 5-C sustaining Explanations 4 and 5 respectively:
"To all District Agencies. Bulletin 4-A
"This is to notify you that a public hearing was held in Washington, D. C., on September 6, 1934, bearing on the wholesaling functions of radio manufacturers. You are hereby officially requested to immediately advise all members of the trade in your district that the Code Authority explanation contained in official bulletin Volume 1, No. 4, dated July 19, 1934, continues effective as of the date of issuance."

Bulletin 5-C is identical save that it relates to Official Bulletin, Volume 1, No. 5, which originally became effective as of August 16, 1934.

It would appear, therefore, that, for the present, the Government feels that all wholesaling operations, regardless of by whom conducted, including manufacturers, are subject to the provisions of the Wholesaling Code. This decision, according to the proponents of these Explanations, will go a long way toward stopping present-and impending-price wars between radio set makers and will operate for the protection of the smaller dealers.

A number of prominent manufacturers had intimated, during the proceedings, that were these provisions of the Code of Fair Competition of the Radio Wholesaling Trade not sustained, they would be forced immediately to take retaliation measures against the policies of other manufacturers who, in selling direct to "key" retail accounts over the heads of their own wholesalers, "thereby discriminate against the independent dealer."
The much mooted "Explanation No. 4" issued by the Divisional Code Authority for the Radio Wholesaling Trade the fore part of last month, is as follows:

Question: Does the Radio Wholesale Supplement of the Distributing Code govern the sales made by manufacturers and primary sellers to retailers of radio apparatus, selling direct to the ultimate consumer ?
Explanation: The definition of a "wholesaler or distributor" as defined in Article II, Section (b) of the Supplemental Code of Fair Competition for the Radio Wholesaling Trade applies to manufacturers and primary sellers or to subsidiaries or definitely organized divisions thereof when such manufacturers or primary sellers or their subsidiaries or definitely organized divisions thereof are definitely organized to render and rendering a general wholesale distribution service and maintaining and operating a wholesale warehouse service and who are engaged in the business of selling radio apparatus through salesmen, advertising and sales promotion devices at wholesale principally to dealers for resale to ultimate consumers, but who do not sell in significant volume to consumers.
A general "wholesale distribution service" and/or "a wholesale warehouse service" for the sale of "radio apparatus" to "retailers of radio apparatus selling direct to the ultimate consumer" may be conducted from one or more points throughout the country. The said points may be a
manufacturer's plant or at his owned or controlled or rented warehouses or distribution points.

Following are the chief points of Explanation No. 5 :
Question No. 1: Is a distributor permitted to classify his dealers for the purpose of extending preferred discounts or preferred net prices? Explanation: No.

Question No. 2: May a distributor grant preferred discounts or net prices to a dealer in anticipation of his earning a quantity discount?

Explanation: No-because such anticipation would be a classification which is prohibited under the Code.

Question No. 3: May quantity discounts be set up on a per shipment basis or on cumtilative purchases over a period of time? Explanation: Yes.

Question No. 4: If quantity discounts are granted, based upon purchases over periods of time, what should such periods be?

Explanation: It is recommended that quantity discounts be based upon annual purchases although shorter periods may be set up.

## TWO CAMPS, ABLY CAPTAINED

Marked difference of opinion concerning the scope and meaning of certain Sections of the Radio Wholesaling Code soon came to light at the public hearing, Thursday morning, Sept. 6. Primarily with respect to Article II, Section (b) which defines the term "wholesaler.", Also Article IV, Section 2, "Protection of Dealers." This clause, written by members of the Radio Wholesalers Association, reads as follows:
"Members of the Trade shall not discriminate, directly or indirectly, between dealers in services rendered or in discounts or net prices extended; provided that nothing herein shall prohibit quantity discounts."

Those in favor of the Code as it now stands, with explanations Nos. 4 and 5 included therein, were ably captained by Benjamin Gross, chairman of the Code Authority, supported by Elmer T. Cunningham, president of RCA Victor, and many other manufacturers and jobbers. The opposition was led by James Skinner, president of Philco, by jobbers representing this concern, by Ben Abrams, of Emerson Radio, and others.

Defending the right of a manufacturer to sell direct to its own selected group of "key" dealers, on its own terms without conformity to the scale of prices being quoted other retailers of similar quantity requirements (on the same product and by said manufacturer's own distributor in that same territory) Mr. Skinner pointed out that such practice by Philco operated for the protection of the small dealer and for the distributor by making possible factory supervision of these "bellwether" accounts-and had so proven.

On the other hand, testimony by many jobbers and by the manufacturers representing the opposite view, contended that such a course, if continued, would not only render ineffectual the enforcement of the radio wholesaling code but, because other set makers would be forced to compete direct and on a wide discount basis for the dealer's business, such a policy would wreck the radio jobber and particularly the small dealer, returning the industry to its former state of chaos.

This stand was endorsed by Zenith. Stromberg-Carl-
(Please turn to page 50)

## In the following pages "Radio Retailing"

 presents complete specifications of 1935 lines, photographs of typical models and an analysis of important trends which will influence fall and winter buying
one or more sets of this type, sereral offering nothing else. Receivers tuning from $20,000 \mathrm{kc}$. down through the broadcast band without a break are quite common and many makers are shooting through export type sets good down as far as 150 kc. in the hope that longwave weather reports and occasional reception of foreign broadcasters on the coasts will stimulate demand for this type of job.
Extended-band broadcast sets including one or more police and amateur bands are to be found in a number of table and console offerings. But by far the most common type of receiver is the "jump band" type tuning in the broadcast range and then skipping down to the more popular foreign channels, omitting relatively unimportant intervening services. Sets of this character can be produced cheaper than true allwave jobs and dealers say the consumer is satisfied. The trade, apparently, is loath to stock up heavily on straight broadcast jobs but doesn't insist that the manufacturer knuckle down to a straight diet of "no-skip" chassis. Police calls, amateur signals and plane-to-airport conversations are rapidly taking a back-seat while foreign reception is on the upgrade.

Allwave sets seem destined to stay with us a while.

## SETS PERFORM BETTER

Technically, allwave sets are much improved over early efforts, which were nothing to write home about. Dead-spots are almost a thing of the past due to the growing popularity of separate band coils and trick grounding systems: sensitivity is up and noise, which includes spurious code interference. has been largely eliminated by proper antenna coil design and t.r.f. stages.

Then too, worthwhile strides have been made toward the simplification of allwave set tuning. Many new models employ beat-frequency oscillators which make stations "whistle." Converters have been resurrected and, embodying modern improvements, really work quite satisfactorily. Also, the growing interest in shortwave reception has induced a number of companies to put out straight shortwave receivers for the new crop of dyed-in-the-wool fans. Some of these have all the latest professional gadgets such as single-signal crystals, bandspread controls and logging dials. Band-spread, incidentally, is to be found in several allwave models.

The radio dealer's best sales bet for the season is undoubtedly allwave or shortwave merchandise. Show it to every old customer and


CAPEHART 404B


COM-RAD 660.. $\$ 44.50$

CAPEHART 101

CROSLEY


LE WALD 501A

8HI... $\$ 99.50$


CROSLEY
5M3...\$19.99
DETROLA
7A3...\$64.50


EMERSON 38.. $\$ 39.50$
DE WALD 802


EDISON-BELL 64... $\$ 69.50$

it will bring in replacement business.

## NOISE-REDUCING ANTENNAS

Noise-reducing antennas, as we have repeatedly pointed out, are an absolute necessity when operating an allwave or shortwave receiver in the majority of locations. Up to the present time these have been pioneered by specialty manufacturers. A few set manufacturers took up the cudgel for them a few months ago. And now it appears sure that certain factories will sell them as stock equipment, included in the list, within a few months. Already we hear rumors that one big-gun will hold back his guarantee until assured by the purchaser that a proper noise-reducing skywire has been installed. And many new sets incorporate automatic switching and antenna coil systems which take care of both broadcast and shortwave sensitivity when using a doublet.
This is a step in the right direction and we urge the trade to take advantage of the trend and sell a proper antenna with every allwave job, so picking up a few extra pennies and insuring themselves against turn-backs.

## MIDGET VS. CONSOLE

The midget is still with us and there is probably no valid reason why it should not be. It serves a definite purpose as a second set or for the man who has little money to spend. If we read our specifications aright, however, most manufacturers have soft-pedalled it as much as they dare, have tried to put more sales ammunition in the larger table models and consoles. This is most evident when we scan the list for cigar-box types-those small, oblong babies which dominated the market in 1933. Fewer of these are noted and more of the so-called larger "tombstone" types ... but the tombstone appearance has given way before more attractive modernistic or semi-modernistic designs.

Console cabinets are larger, with most designers leaning toward the practically legless types carrying the speaker baffle right down near the floor. We have it on authority of one of our leading set maker's service manager that style dictates design of such cabinets but it is often discovered that tone improves amazingly. The usual crop of conservative lowboys and highboys is to be seen, all dolled up in semi-modernistic dress. These are the old standbys.

The phono-radio combination, as we have pointed out in recent



FORDSON FU... $\$ 33.25$



FRANKLIN
105PC. . . $\$ 250$

FRANKLIN
55GU...\$44



FREED-EISEMANN
475X

FREED-EISEMANN


GAROD 237... $\$ 55$


GAROD 66...\$62.50



GENERAL ELECTRIC
M81... $\$ 97.50$
months, is definitely staging a comeback. Several makers have reinstated these types and have not cut the price down to the danger mark, evidently anticipating a fair quality market and averse to letting it get away without returning a worthwhile profit. Automatic changers are, naturally, important adjuncts and the higher priced combinations almost invariably include these, with two companies building in homeyecorders.

Recording companies are more up on their toes than for a number of years and new discs recorded by leading radio and stage celebrities will do much to stimulate the combination market. Records have been such a dead issue with most dealers for so long that we hesitate to again advise the trade to stock them sight unseen but in all sincerity we feel that the record business "ain't what it used to be" and advise our readers, however skeptical, to give it another "look-see."

## HIGH FIDELITY COMING

High fidelity reception has already been announced by several manufacturers but because of the swath allwave receivers are cutting will probably make little impression upon the buying masses at this time. Some day, unless we miss our guess, it will be the industry's rallying cry.

In the meanwhile a lot of loft assemblers will undoubtedly take adrantage of the words high fidelity to push over sales ... without benefit of engineering. Let's scotch this trend. If we don't it will be just another cry of "Wolf" when the real stuff comes along.

## PRICES UP

Gyp retail operators are still putting out sets, chiefly universal models, at ridiculously low prices but there is much less of this even in large metropolitan centers than heretofore. Manufacturers, in the main, have been more "cagey" about pricing this season. We find that while there are "leaders" in almost every line of any importance few such models are offered by comparison with higher priced merchandise equipped with refinements enabling the dealer to get that few extra dollars that spells the difference between profit and break-even. There is also a trend toward broader discounts on such sets.

It is our guess that this extra effort on fairly priced models will jack up 1935's average sale somewhere between 10 and 20 per cent. Mucl depends upon the dealer. Factories have done their part by proriding salable merchandise in the higher price brackets but retailers




HALLICRAFTERS
SKYRIDER... $\$ 70$


HALSON 610.. $\$ 39.85$
 meter movements. One maker uses a double three-gang condenser to assure proper band-spreading of shortwave stations.

Remote control, practically abandoned when the financial storm broke over our heads, is back again. Not only do we find remote oscillators but divided speakers and tuners and flexible shaft accessories. Remote control never, in our estimation, reached first base, even in its palmiest days. But it will some day, unquestionably, as it is a worthwhile convenience for the user. "Der Tag" might very well be Christmas Day, 1934. Automatic clock tuning has, likewise, repeatedly failed to make an appreciable dent but with one of the industry's largest and smartest manufacturers backing it this season all this may change. For automatic tuning, too, fills a definite need. Progress will be slow, perhaps, but the device carries a list high enough to make every sale ring the cash register.

Both remote control and automatic tuning, appearing over the horizon at this time, bear out our impression that manufacturers anticipate better business for higher priced products which offer the user improved service. Landoffice business is scarcely the object. Neither device will dominate the market in point of unit sales but both should be worth their weight in gold when it comes to profit.

## AUTO-RADIO GOING STRONG

Auto-radio is still going strong although sales for the year will probably miss the predicted total by a slight margin. The business did not mushroom quite as much as was expected though continuing to gain




KINGSTON
700A... $\$ 64.50$

KINGSTON 600B



LAFAYETTE
F36... $\$ 119.50$


MELBURN
5... $\$ 13.95$



NATIONAL
FB-7A. 557
(less coils, tubes)

PHILCO 200X. . $\$ 200$



PHILCO 45C. . $\$ 49.95$
steadily. 1935 will probably bring increased business without showing phenomenal gains but it appears likely that automotive accessory stores and car outlets will cut in more seriously than ever unless the radio trade does something about it. The trend toward specialty installation and service grows, however, and this is a strictly radio game.

Technically, auto - radio has changed little since the early part of the year. Circuits remain more or less the same and tube lineups are unaltered. Progress has been made in mechanical design, with simplified mountings appearing in all lines, more flexible control heads accompanying these. Mechanical tuning systems of the flexible shaft variety have practically swept direct control and remote oscillators from the field. Tube rectified vibrators predominate with rotating type B-supplies gaining slightly among the more expensive receivers. Suppressor values go steadily downward. Better filtering of supply leads and innproved shielding will enable installation stations to secure more satisfactory results in many new cars with a minimum of suppression, distributor resistors often doing the trick.

## BATTERY SETS GAIN

Manufacturers are again devoting time to battery models, evidently realizing that this market, which may be relatively small when compared with electrified area business, has been neglected and offers profit possibilities. Many companies have developed really efficient battery receivers with good cabinets and at reasonable prices. They have even included allwave reception, something the rural user has long had to do without. And modern circuit refinements such as a.v.c., pilot lights and tuning indicators are not uncommon.

Similar progress has been made in the 32 volt d.c. field, enabling owners of farm electric light plants to buy fully electrified radio. Such sets take a leaf from auto-radio experience, include vibrator type eliminators to do away with the necessity for B-batteries. Several use the nore conventional rotating devices. Most 32 volt sets hook tube heaters in series, following universal set practice.
Once more the rural dealer has a real opportunity. Merchandise of a salable character is again offered by manufacturers. Drought conditions may put a temporary crimp in their activities but it is felt that farm radio business will be better in 1935 than during 1934 despite lark



You'll be amazed bow customers flock to the "Magic Brain"- and bow it belps sell sets!


## CONSOLE MODEL 224-

6-tube"Magic Brain" superheterodyne, brings in programs of the world, plus domestic stations.

TABLE MODEL 128-6
tube, 3 -band "Magic Brain" superheterodyne, domestic and foreign programs


# RCA VICTOR "MAGIC BRAIN" SOLVES YOUR PROFIT PROBLEM! 

... a sensational selling force that's going
to bring people into your store to

## SEE . . . HEAR . . . AND BUY RCA VICTOR'S NEW ALL-WAVE SETS

At last you have a chance to talk to your customers about something more than an unimportant "gadget".

For RCA Victor engineers have produced a marvelous entire receiving unit-that remakes utterly all-wave performance. It's called the "Magic Brain"- and you can demonstrate, right in your store, what it means and what it does.

It gives you an opportunity to sell up. For after seeing the "Magic Brain" (found only in six-tube or better chassis) people are no longer satisfied with inadequate sets . . . they want the new, profitable (for you) RCA Victor Radios.

RCA Victor is going out this


## BUY THIS ...IT SELLS MORE SETS

This is the "Magic Brain". . . a colorful, practical, easily explained unit-already mounted, with lights in it. Customers see it . . . ask about it . . . and become sold on RCA Victor all-wave through it. There's one waiting for you-get it from your RCA Victor distributor?
fall to capture the all-wave market. And "Magic Brain" is going to do it for RCA Victor! There will not only be plenty of promotion-but plenty of publicity (already radio editors everywhere are picking up "Magic Brain")—and plenty of local and national advertising.

Why wait . . . and maybe miss out on your slice of the RCAVictor"Magic Brain" profit melon? Wire or phone your RCA Victor distributor today -he'll give you the whole story-and tomorrow you can get going!

RCA Victor Company, Inc.
A Radio Corporation of America Subsidiary Camden, New Jersey
"Radio Headquarters"


PILOT 114

RADIOBAR \$295


RADIOBAR $\$ 249$


SILVER-MARSHALL
ALL-WORLD 5... $\$ 42$



SPARTON
83 ... $\$ 124.50$


STEWART-WARNER
1964... \$94.50

| Model Number | $\begin{gathered} \text { Price } \\ \text { (complete) } \end{gathered}$ | Type | Cabinet | Range (in Kc.) | Power Supply | Dimencions (H, W, D) | Tubes | Circuit |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |  |  |  |
| 611 |  |  | Table | 1800-550 | * | $8 \times 12 \times 6$ | 6A7, 78, 2B $7,42,84$ | Super. |
| 156 |  |  | Table | 23,000-550 | 4 C | $9 \times 14 \times 7$ | 2A7, 58, 2B7, 2A 5, 80 | Super. |
| 156 C 158 |  |  | Console | ${ }^{23} 23000-550$ | ${ }_{\text {AC }}$ | $39 \times 2 \times 14$ $14 \times 16 x$ | 2A7, 58, 287, 2A 5, 80 | Super. |
| 158 C |  |  | Console | 23,000-550 | ${ }_{\text {AC }}$ | $39 \times 22 \times 14$ | 2A7, 58, 58, 56, 24, 57, 80 | super. <br> Super. |
| 136 |  |  | Table | 1850-550 | AC | $9 \times 14 \times 7$ | 57, 58, 2A 6, 80, 2, ${ }^{\text {a }}$ | Super. |
| 128 |  |  | Table | 1850-550 | IC | $13 \times 11 \times 6 \frac{2}{2}$ | $58,57.215,80$ | T.R.F. |
| 1934 |  | Anto. <br> Auto. |  | $\begin{aligned} & 1520-550 \\ & 1520-550 \end{aligned}$ |  | $\begin{aligned} & 6 \times 9 \times 7 \\ & 7 \times 91 \times 7 \end{aligned}$ | 6.'7, 78.78.2R7. 42 $6 \mathrm{C} 6,6 \mathrm{D}) 6,75,42$ | Super. <br> Super. |
| *AC \& 610 |  |  |  |  |  |  |  |  |
| Howard Radio Co., 1731 İelmont Ave., Chirago. IIf. (IIoward) |  |  |  |  |  |  |  |  |
| ${ }_{\text {A }}^{\text {A }} 13$ | $\$ 24.50$ 29.95 |  | Compact | 1753-545 | Univ. | 73x $111 \times 5$ | 43, 1223, 6C\%.6R6 | T.R.F. |
| C14 | 39.95 | .................. | Table | 1750-545 | AC | $14 \times 12 \times 8$ | $647,6 \mathrm{D6}, 75,80,42$ |  |
| V11 | 39.95 |  | Table | $\left(\begin{array}{l}\text { 5900-16.200 } \\ 4000-550\end{array}\right.$ | 1 C | $9 \times 14 \times 8$ | 6.1. 68.170 | uper. |
| D 15 | 79.50 |  | T'able | *25.000-550 | ${ }_{\text {AC }}$ | $9 \times 14 \times 8$ $19 \times 14 \times 10$ | $78,78,647,42,6 \mathrm{B7}, 80$ $80,42,76,85,647,78,78,78$ | uper. |
| D16 | 99.50 |  | Console | *25.000-550 | AC | $38 \times 24 \times 12$ | 80, 42, 76, 85, 6. $7,78,78,78$ | Super. |
| F17 | 149.50 | ................... | Console | *25,000-550 | AC | $40 \times 24 \times 12$ | $80,80,42,42,76,76,76,6 \mathrm{~B} 7,6 \mathrm{~A} 7,78,78 \text {, }$ | Super. |
| W6 | 295.00 |  | Console | $25,000-550$ $350-150$ | AC | $43 \times 25 \times 16$ | $78,78,78,76,76,76,76,76,76,42,42$, | Super. |
| F-18 | 650.00 | Auto Phono. Comb. | Console | *25,000-550 | AC | $42 \times 34 \times 20 \frac{1}{1}$ | 80, 80, 46, 78, 78, 77, 46, 76. 76.76, 6137. | Super. |
| W. 18 | 795.00 | Auto. Phono. Comb. | Console | $\left\{\begin{array}{r}25,000-550 \\ 350-150\end{array}\right.$ | AC | $42 \times 34 \times 20 \frac{1}{2}$ | 78, 78, 78, 76, 76, 76, 76. 76, 76, 42, 42, | Super. |
| HA1 <br> HA 2 | 44.50 34.50 | Auto. |  | $1500-550$ $1500-550$ |  | $7 \times 7 \times 9$ | 6D6,6C6, $78,75,42,84,80,6$ | Super. |
| HA2 <br> *.Also avialab | with34,50 <br> 50 |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
| Transpacific | 127.40 |  | Console | 150-20,000 | * ${ }^{\text {* }}$ ( ${ }_{\text {c }}$ |  | 6A7, 78, 78, 6B7, 77, 45, 45, 80 | Super. |
| Transparific | 159.90 | Phono Comb | Console | $150-20.000$ | * AC |  | 6A7, 78, 78, 6B7, 77, 45, 45, 80 | Super. |
| Transatlantic | 10100 |  | Midget | 515-20.000 | * ${ }_{\text {* }}$ | $21 \times 17 \times 11$ | $6.77,78,78,6 \mathrm{B7} 777,45,45,80$ | Super. |
| Transatlantic | 125.00 $15 \%$ | Phono Comb | Console | $515-20,000$ $515-2000$ | * AC |  | 6A7. $78,78,6 \mathrm{~B} 7,77,45,45,80$ | Super. |
| Cransatlantio |  | Phono. Comb | Console | $515-20,000$ <br> $-150-400$ <br> $50-780$ | * A C |  | 6A7, 78, 78, 6E7, 77, 45, 45, 80 | Super. |
| ICA-SIX | 53.75 | .............. | Midget | $\begin{gathered} 530-1720 \\ 5500-18,000 \end{gathered}$ | t. 1 C | $17 \frac{1}{2} \times 13 \times 9$ | 6D6, 6A7, 6D6. 75, 42, 80 | Super. |
| ICA-SN゙ | 51.78 | ... ............... | Midget | $\begin{gathered} 530-1720 \\ 5500-18.000 \end{gathered}$ | $\dagger \mathrm{AC}$ | $17 \frac{1}{2} \times 13 \times 9$ | 606, 6A7, 6176, 75, 42, 80 | Super. |
| Magicolor | 54.75 | . | Midget | $\begin{gathered} 150-400 \\ 530-1720 \\ 5500-18.000 \end{gathered}$ | tild | $17 \frac{1}{2} \times 13 \times 9$ | 659,6A7, 6T36,75, 42, 80 | Super. |
| Magicolo- | 57.75 | .................. | Midget | $\begin{gathered} 530-1720 \\ 5500-18.000 \end{gathered}$ | †AC | $173 \times 13 \times 7$ | 6Tr6, 6. 7 7, 61)6, 75, 42, 80 | Super. |
| Envoyette | 32.25 |  | Midget | $550-1500$ $150-375$ | Univ | $8 \times 10 \frac{1}{2} \times$ b | 6A7, 6D6 6C6, 43, 1223 | Super. |
| Envoyette <br> *99-260 Volts | $\begin{gathered} 31.00 \\ 40-60 \text { Cycles. } \end{gathered}$ | $\dagger 105-125 \text { and } 210$ | Midget <br> Voltg 5060 | $\text { yeles. } 550-1500$ | T'niv. | $8 \times 10 \frac{1}{2} \times 6$ | 6.17,606 6C6, 43, 1223 | Super. |
| Insullne Corp. of America, 23, 25 Park Place New York, N, Y. (ICA) |  |  |  |  |  |  |  |  |
| Mascet 2 | * 17.50 | Kit | Chassis Only | 550-30.060 | $\underset{\text { Bat. }}{\text { Bat. }}$ |  | 30 32.19 | Regen. $R$ |
| Mascot-3 | + 22.50 |  | Chassis Only | 550-30,000 | $\pm .4 \mathrm{C}$ | $7 \times 14 \times 63$ | 6F7, 79, 80 | R.F.d |
| Mascot-4 | * 30.00 | Kit | Chaseis Only | 330-30,000 | +. AC | $7 \mathrm{l} \times 14 \times 0$ ? | -67, 77, 42, 80 |  |
| Mascot 5 | * 39.75 | Kit | Chassis Only | 550-30,000 | +ic: | $7 \times 17 \times 12$ | 78, 37. 77. 42, 30 | T.R.F. ${ }^{\text {Regen }}$ |
| PiedPiper | $\dagger$ 4. 50 |  | Bakelite | 500-1500 | None | $61 \times 51 \times 2 \%$ | Crystil | Regen. |
| Scout <br> Marvel | 17.50 $+\quad 50$ |  | Midget <br> Babelite | 1500-15.000 | Univ. | ${ }_{6} 6 \times 7 \times 418$ | 6. ${ }^{\text {6 }} 7.37$ |  |
| Marvel <br> *Less Tubes. |  | s-W Converter chones. $\ddagger$ | Bakelite 50-60 ("ycles. |  |  | $61 \times 51 \times 2$ | 56 or 37 or 76 |  |
|  |  |  |  |  |  |  |  |  |
| International Radio Corp., Ann Arbor, Mich. (Kadette) |  |  |  |  |  |  |  |  |
| $\begin{aligned} & \mathrm{CB} \\ & \mathrm{ES} 25 \end{aligned}$ | $\begin{array}{r} \$ 27.50 \\ 29.75 \end{array}$ |  | Table <br> Table | $\begin{array}{r} 550-1750 \\ 16,700-1500 \end{array}$ | Buat. <br> ${ }^{1}$ nin | $\begin{array}{r} 12 \frac{1}{2} \times 11 \frac{1}{2} \times 67 \\ 9 \frac{1}{2} \times 13 \frac{7}{8} \times 7 \frac{1}{4} \end{array}$ | $1.46,30.31 .32 .33$ <br> 0.47 61)6. 6137, 43, 2575 | Siuper. <br> super |
| ESI9 | 39.50 |  | Table | [16.700-5450 | L'niv. | $15 \times 11 \frac{1}{2} \times 8$ | 6.17, 6D6, 6137.43.2525 | super. |
| ES20 | 44. 50 |  | Table | $16,700-5450$ $550-1500$ | Tuiv. | $17 \times 121 \times 7!$ | 6A7, 61)6, 6377, 43, 2525 | Super. |
| Tios | 39.95 | Auto. | ........... | $550-1500$ | 100 | $7 \times 9 \times 78$ | 6D6, 6D6, 6F7, 75, 42, 84 | Super. |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
| $\begin{aligned} & 4734 \\ & 5734 \mathrm{~s} \end{aligned}$ | $\begin{array}{r} \$ 14.95 \\ 19.50 \end{array}$ |  | Midget <br> Midget | $\begin{aligned} & 550-1500 \\ & 550-1500 \end{aligned}$ | $10$ | $\begin{aligned} & 8 \times 102 \times 6 \\ & 8 \times 11 \times 0 \end{aligned}$ | $\begin{aligned} & 57,58,247,8] \\ & 56,57,58,247,81 \end{aligned}$ | 'Г. JR.F. super. |
| KIngston Radio Co., Ine., Kokomo, Ind. (Kingston) Midget ${ }_{55}$ |  |  |  |  |  |  |  |  |
| 6001 | 39.95 |  | Table | $1715-550$ $1765-540$ | $\mathrm{Maiv}^{\text {di }}$ |  | 78, 78, 77, 38, 12Z3 <br> $78,78,6 \wedge 7,75,42,80$ | Super. <br> Super. |
| 600 B | 62.50 | .... | Cunsole | $1765-540$ | AC | $38 \times 21 \frac{1}{2} \times 12 \frac{1}{2}$ | 78, 78, 6A7, $75,42,80$ |  |
| 500.A | 47.50 | ................ . | Table | $\begin{array}{r} 16.700-6000 \\ 1590-540 \end{array}$ | IC | $16 \times 111 \times 84$ | 6A7, 6D6, 75, 42, 80 | Super. |
| 700 A | 64.50 | ................. | Table | $\begin{gathered} 16.700-6000 \\ 1590-540 \end{gathered}$ | AS | 1919 $14 \times 8 \times$ | 6D6, 61)6, 61)6, 75, 76, 42, 80 | Super. |
| 7008 | 79.50 | ................. | Console | $\left(\begin{array}{c} 16.700-6000 \\ 1590-540 \end{array}\right\}$ | AC | 36 ${ }^{\frac{1}{2} \times 21 \frac{1}{3} \times 11 \frac{1}{2}}$ | 6D6, 6D6, 6176, 75, 76, 42, 80 | Super. |




# RCA Declares War on Menace to Legitimate Radio Tube Profits 



## Double Page Spread in Saturday Evening Post Opening Gun

With this double page color-spread in the Saturday Evening Post (September 29th issue), the RCA Radiotron Company inaugurates the Sealed Carton Crusade. This powerful merchandising campaign is directed at Used Tube Racketeers, who in the past have bought up hundreds of thousands of used tubes, repolished them and sold them to the unsuspecting public as new . . thereby robbing honest dealers of profits that rightfully should have been theirs $\star \star$ It is one more step in the RCA Radiotron Company's
vigorous program to protect the compensation of its Authorized Agents $\star \star$ Additional ammunition in this crusade for higher merchandising ethics . . a square deal for every Authorized RCA Radio Tube Agent . . includes: four full-page ads in color (besides the spread) scheduled for the Saturday Evening Post, large space in color in numerous other publications; the new "Radio City Party" broadcast every Saturday night over a coast-tocoast NBC network ${ }_{i}$ and a long list of new sales aids, including a smashing new window display.

## RCA RADIOTRON COMPANY•INC.

 \& Radic Corporation of America Subsidiary


| Model Number | Price (complete) | Type | Cabinet | Range (in Kc.) | Power Supply | Dimensions (H, W, D) | Tubes | Circult |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Simplex Radio (continued) |  |  |  |  |  |  |  |  |
| UEX | 30.50 |  | Table | $\left\{\begin{array}{r}16,000-5500 \\ 540-1600\end{array}\right.$ | Univ. | $7 \times 10 \frac{1}{3} \times 5$ | 6A7, 75, 6D6, 43, 25Z5 | Super. |
| P | 29.50 |  | Table | $\left\{\begin{array}{r}16,000-5500 \\ 540-1600\end{array}\right.$ | AC | $14 \frac{3}{\frac{3}{2} \times 12 \frac{1}{2} \times 7}$ | 6.A7,6D6, 75, 42, 80 | Super. |
| 176 V | 29.50 |  | Table | [ $\begin{array}{r}16,000-5500 \\ 1643-1600\end{array}$ | Bat. | $14 \times 12{ }_{2} \times 7$ | 6C6, 34, 32. 33 | Super. |
| P32V | 43.50 |  | Table | $\left\{\begin{array}{r}16,000-5500 \\ 540-1600\end{array}\right.$ | Bat. | $14 \frac{3}{6} \times 12 \frac{1}{2} \times 7$ | 6.47, 6D6, 75, 41 | Super. |
| T | 43.50 | tuto. |  | 540-1600 | Bat. | $6 \times 8 \frac{3}{4} \times 61$ | 6.47, 78, 78, 75, 41, 84 | Super. |
| V' | 49. 50 |  | Table | $28,000-540$ $150-400$ | AC | $16 \times 14 \times 9 \frac{3}{4}$ | 6.47, 6D6, 6D6, 75. 76, 42, 42, 80 | Super. |
| $\because$ | 66.53 |  | Console | - $28,000-540$ | AC | $37 \frac{1}{2} \times 21 \times 11$ | 6A7, 6D6, 6D6. 75, 76, 42. 42, 80 | Super. |
| Sparks-Withington Co., Jaricson, Mich. (Sparton) |  |  |  |  |  |  |  |  |
| $8_{83}$ | \$124.50 |  | Console | 540-20,000 | $\xrightarrow{4}$ | $39 \times 23 \times 128$ | 78, 78, 78, 78, 76, 85, 42,80 | Super. |
| 89 | 99.50 |  | Console | 540-20.000 | AC | $39 \times 24 \times 1 \frac{1}{2}$ | 78, 78, 78, 78, 76, 85, 42, 80 | Super. |
| 691 | 84.50 |  | Console | $\left\{\begin{array}{r}540-1600 \\ 15,800-5500\end{array}\right\}$ | AC | $39 \times 24 \times 11 \frac{1}{3}$ | 78, 78, 6A 7, 75, 42, 80 | Super. |
| 66 | 59.95 |  | Console |  | Univ. | $38 \frac{1}{2} \times 22 \frac{1}{2} \times 11$ | 78, 78, 78, 25Z5, 75.43 | Super. |
| 68 | 71.50 |  | ('onsole | $\left\{\begin{array}{r}550-1600 \\ 15,800-5500 \\ 50\end{array}\right\}$ | AC | 38\% $\times 2212 \times 11$ | 78, 78, 80, 6. $\mathrm{A}^{7}, 75,43$ | Super. |
| 67 | 57.50 |  | Table | $\left\{\begin{array}{r}540-1600 \\ 15.800-5500 \\ 500-1600\end{array}\right\}$ | AC | $17 \times 14 \frac{1}{2} \times 8 \frac{1}{2}$ | 78, 78, 6.47, 75, 42, 80 | Super. |
| 65 | 39.95 |  | Table | 15 $50-1600$ $15,800-5500$ | Univ. | $14 \frac{1}{2} \times 13 \times 6 \frac{1}{2}$ | 78,78, 78, 75, 43, 25Z5 | Super. |
| 57 | 29.95 |  | Table | $\left\{\begin{array}{r}550-1600 \\ 1500-6000\end{array}\right\}$ | Univ. | $7 \frac{1}{\times 103} \times 5$ | 78,78, 75, 43, 25Z5 | Super. |
| 53 | 24.95 |  | Table | 550-1600 | Univ. | $7 \frac{1}{2} \times 10 \frac{3}{} \times 5$ | 78, 78, 75, 43, 2525 | Super. |
| 74 | 109.50 |  | Console | $\begin{array}{r}530-1600 \\ 1300-3400 \\ \hline\end{array}$ | AC | $40 \frac{1}{2} \times 22 \frac{1}{2} \times 12 \frac{1}{3}$ | 58, 24A, 58, 56, 56, 2A5, 80, 56, 2A 5 | Super. |
| 78 | 89.50 |  | Console | $\left.\begin{array}{r}530-1600 \\ 1300-3400\end{array}\right\}$ | AC | $42 \frac{1}{2} \times 23 \times 12 \frac{1}{2}$ | 6D6, 6D6, 6D6, 37, 37, 37, 42, 80 | Super. |
| 333 33.4 3 | 39.95 55.00 55 | Auto. |  |  |  |  |  |  |
| 33.4 33 B | 55.00 55.00 | Auto. Auto. |  |  |  |  | $\begin{array}{r} 78,78,36,75,41,84 \\ 78,78,36,75,41,84 \end{array}$ | Super. <br> Super. |
|  |  |  |  |  |  |  |  |  |
| 1231 1235 | $\$ 24.50$ 27.50 | .................... | Table | $\left\{\begin{array}{l}540-1720 \\ 540-1720\end{array}\right\}$ | ${ }_{\text {AC }} \mathrm{AC}$ |  | 6A7, 6F7, <br> 6A $7,6 \mathrm{~F}, 41.80$ <br> 1.80 | Super. |
| 1236 | 27. 50 |  | Table | - 540-1720 | AC |  | 6A7, 6F7, 41.80 | Super. |
| 1251 | 39.50 |  | Table | \{530-1720 | AC | $168 \times 13 \times 8$ | 6A7, 6D6, 75, 41, 80 | Super. |
| 1252 | 39.50 |  | Table | \{ $530-1720\}$ | ${ }_{4}{ }^{\text {C }}$ |  | 6A7,6D6,75, 41,80 | Super. |
| 1254 1271 | 57.50 |  | Console | $530-1720$ $530-23.000$ | ${ }_{\text {AC }}{ }^{\text {C }}$ | 351 $17 \times 1322 \times 1{ }^{2} \times 81$ | 6A7, 6D6, $75,41,80$ | Super. |
| 1272 | 49.50 |  | Table | 530-23.000 | AC |  | 6A7.6D6, $75,41,80$ | Super. |
| 1274 | 67.50 |  | Console | 530-23.000 | AC | $35 \frac{1}{2} \times 22 \times 1{ }^{1 \frac{1}{2}}$ | 6A7, 6D $6,75,41,80$ | Super |
| 1191 | 37. 50 |  | Table | 530-1740 | AC | $20 \times 11 \frac{13}{13}$ | 78, 6A, 78, 85, 42, 80 | Super. |
| 1192 | 49.50 |  | Console | 530-1740 | AC | $40 \times 25 \times 15$ | 78, 6A, 78, 85. 42.80 | Super. |
| 1261 | 69.50 |  | Table | 530-23,000 | $A C$ | $18 \frac{5}{6} \times 14{ }^{5} \times 12{ }^{2}$ | 6A7, 6C6, 6D6, 6D6. 75, 76, 80 | Super. |
| 1262 | 69.50 |  | Table | 530-23,000 | ${ }^{\text {AC }}$ | $19 \times 14 \times 124$ | 6A7, 6C6,6D6,6D6, 75, 76, 80 | Super. |
| 1264 | 94.50 |  | Console | 530-23.000 | ${ }^{\text {AC }}$ | $38 \times 23 \frac{1}{13}$ | 6A7, 6C6, 6D6,6D6, 75, 76, 80 | Super. |
| 1265 1266 | 99.50 109.50 |  | Console Console | $530-23.000$ $530-23,000$ | ${ }_{\text {AC }}{ }^{\text {AC }}$ |  | 6A7, 6C6,606,6D6, 75, 76, 80 6A7,6C6,6D6,6D6, | Super. |
| 1172 | 49.50 | Auto. |  | 530-1520 |  | $16^{6} \times 9 \times 10^{\frac{1}{2}}$ | 6A7, 78, 78, 75, 41,84 | Super. |
|  |  |  |  |  |  |  |  |  |
| 33 A 52 | $\begin{aligned} & \$ 79.50 \\ & 385.00 \end{aligned}$ | Auto. <br> Remote Control | Console | $\begin{aligned} & 540-1570 \\ & 540-1570 \end{aligned}$ | ${ }_{\text {Bat }}$ A | $48 \times 27 \times 19$ | $\begin{aligned} & 78,6 \mathrm{~A} 7,6 \mathrm{~B} 7,37,41,41 \\ & 27,35,35,35,55,56,56,57,2 \mathrm{~B} 7,2 \mathrm{~A} 3,2 \mathrm{~A} 3 . \end{aligned}$ | Super. Super. |
| 54 | 685.00 | Remote Control | Console | 540-1570 | AC | $47 \times 32 \times 20 \frac{1}{2}$ | $27,35,35,35,55,56,56,57,2 \mathrm{~B} 7,2 \mathrm{~A} 3,2 \mathrm{~A} 3$ | Super. |
| 49 51 | 230.00 400.00 |  | Console Console | $540-1570$ $540-1570$ | ${ }_{\text {A }}{ }_{\text {A }} \mathrm{C}$ | $\begin{aligned} & 44 \frac{1}{2} \times 27 \times 16 \\ & 48 \times 29 \frac{1}{2} \times 19 \frac{1}{2} \end{aligned}$ | $\begin{aligned} & 55,56,56,56,57,58,58,58,2 \mathrm{~A} 3,2 \mathrm{~A} 3.5 \mathrm{Z} 3 \\ & 55,56,56,56,57,58,58,58,2 \mathrm{~A}, 2 \mathrm{~A} 3,5 \mathrm{Z} \end{aligned}$ | Super. |
| 55 | 148.50 | ${ }_{\text {Remote }}$ Control | Console | 540-1570 | AC | $27 \times 25 \times 11$ | 2A5. $245,6 A 7,2 \mathrm{B7} 7,5 \mathrm{Z3}, 55,58.78$ | Super. |
| 56 R | 188.50 |  | Console | 540-1570 | ${ }_{\text {AC }}$ | 40\% $\times 24 \times 11$ \% |  | Super. |
| 64 | 125.00 |  | Console | 540-1570 | AC | $39 \frac{1}{2} \times 25 \frac{1}{3} \times 11 \frac{1}{8}$ | 78, 6A7, 6B7, 37, 42, 42, 42, 5Z3 | super. |
| 60 T | 75.00 |  | Table | $\left\{\begin{array}{c}540-1570 \\ 5500-15500 \\ 5500\end{array}\right.$ | $A C$ | $177 \times 12 \frac{1}{1} \times 10 \frac{9}{16}$ | 6D6, 6A7, 6B7, 37, 41, 41, 80 | Super. |
| 601. | 95.00 |  | Console | $\left\{\begin{array}{c}540-1570 \\ 500-15,500\end{array}\right\}$ | AC | $361 \times 18 \frac{1}{5} \times 11 \frac{1}{6}$ | 6D6, 6A7, 6B7, 37, 41, 41, 80 | Super. |
| 68 | $\begin{array}{r} 175.00 \\ 69.50 \end{array}$ | s-W. Converter | Console Table | $\begin{array}{r} 540-25,000 \\ 540-25,000 \end{array}$ | $\begin{aligned} & A C \\ & A C \end{aligned}$ | $\begin{aligned} & 39 \frac{1}{2} \times 25 \times 11 \frac{15}{8} \\ & 14 \frac{1}{4} \times 10 \frac{3}{3} \times 9 \frac{8}{8} \end{aligned}$ | $\begin{aligned} & \text { 6D6, 6D6. 647,76, 6B7, 85, 42, 42, 42, 5Z3 } \\ & \text { 6D } 6,6 A 7,76,80 \end{aligned}$ | Super. Super. |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
| 17625 |  |  | Console | 540-4000 | 32 DC | $383 \times 22 \times 12 \frac{1}{4}$ | 78, 75, 78, 6A7, 38, 84 | Super. |
| $\begin{array}{r}\text { C625 } \\ \\ \hline\end{array}$ |  |  | Table | $540-4000$ $540-2000$ | 32 DC 32 DC | $18 \times 18 \times 101$ | 78, 75, 78, 6.47, 38, 78 | Super. |
| +1525 | ....... |  | Table | 540-2000 | 32 DC | $17 \times 15 \times 10^{2}$ | 78, 77, 75, 38, 38 | Super. |
| K665 |  |  | Console | $540-4000$ | 6 DC | $38 \times 2 \times 2 \times 12{ }^{2}$ | 15, 1915, 50,6A7, 75 | Super. |
| J 1665 |  |  | Table | 540-4000 | 6 DC | $18 \frac{1}{2} \times 18 \frac{1}{2} 10 \frac{1}{1}$ | 15,19,15, 30, 647, 75 | Super. |
| 1465 $H 465$ |  |  | Console | $540-2000$ $540-2000$ | 6 DC 6 DC | $38 \times 20 \frac{1}{2} \times 12 \frac{1}{2}$ $17 \times 15 \times 10^{2}$ | $15,15,75,38$ $15,15,75,38$ | Super. Super. |
| Transformer Corp. of America, 100 Sixth Ave., New York, N. Y. (Clarion) |  |  |  |  |  |  |  |  |
| TC-1 | \$62.50 |  | Table | 20.060-545 | AC |  | 78, 78, 78, 37, 75, 42, 80 | Super. |
| TC-20 | 36.50 |  | Table | $\left.\begin{array}{c}16,700-5454 \\ 1500-545\end{array}\right\}$ | AC | $15 \frac{1}{2} \times 14 \times 73$ | 2A7,58, 2A6,2A5, 80 | Super. |
| TC. 60 | 60.00 |  | Table | 23.001-154 | Univ. | $8 \times 9$ | 6D6, 6D6, 6A7, 75, 43, 25\% 5 | Sunse. |
| $\mathrm{TC}^{\text {T }} 30$ | 18.60 11500 |  | Table | $1500-545$ $2000-545$ | ${ }_{\text {Univ }}$ U | $12 \times 7 \frac{3}{x} \times 6 \frac{1}{2}$ | 6D6, 6C6, 43, 12Z3 <br> $78,78,78,3775,42,80$ | T.R.F |
| TC-50 | 115.00 37.50 | Phono.-Comb. Auto. | Console | $20,000-545$ $1503-545$ 1 | AC, | $\begin{array}{r} 35 \frac{1}{4} \times 20 \frac{3}{2} \times 15 \\ 6 \frac{3}{6} \times 10 \frac{1}{2} \times 7 \frac{1}{3} \end{array}$ | $\begin{aligned} & 78,78,78,37,75,42,8 \\ & 78,78,77,75,41,6 Z 4 \end{aligned}$ | Super. <br> Super. |
| TC-52 | 34.00 |  | Table | $\left.\begin{array}{r}1580-545 \\ 375-150\end{array}\right\}$ | Univ. | $8 \times 12 \times 6$ | 77,77.78,43, 25Z | Super. |
|  |  |  |  |  |  |  |  |  |
| - ${ }_{44}^{14}$ | 18.95 20.95 |  | Midget | Bdest. | *AC |  | (4) | T.R.F |
| 40 | 19.95 |  | Midget | Bdest. | *AC |  | (4) | T.R.F. |
| 42 | 25.95 |  |  | Bdest. | *AC |  | (4) | Super. |
| 52 54 | 29.95 42.50 |  | ........... | Bdcst. | * ${ }^{\text {A }}$ (C |  | (5) | 5130 |
| 54 <br> 84 | 42.50 59.50 |  | .. | Allwave | *AC |  | $\begin{array}{r}\text { (5) } \\ \text { (8) } \\ \hline\end{array}$ |  |
| 84 C | 79.50 |  |  | Allwave | *AC |  | (8) |  |
| 56 | 39.90 |  |  |  |  |  | (5) |  |
| *Available ia Lhiversal, Aircell or DC models. Also for odd AC voltage and 32 DC C. |  |  |  |  |  |  |  |  |


| Model Number | Price (complete) | Type | Cablnet | Range (in Kc.) | Power Supply | Dlmenslons (H, W, D) | Tubes | Circuit |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| United American Bosch Corp., Springfield, Mass. (American Bosch |  |  |  |  |  |  |  |  |
| 402 | \$29.95 | ................... | Personal | 540-1750 | Univ. | $718 \times 10 \frac{1}{2} \times 5$ | 6F7, 78, 75, 43, 25Z5 | Super. |
| 420 357 | 39.95 39.95 |  | Personal Personal | $540-3600$ $540-4200$ | $\stackrel{A C}{\text { Univ. }}$ |  |  | Super. |
| 440 T | 54.50 |  | Table | $\left\{\begin{array}{c}540-1600 \\ 5600-15,500\end{array}\right\}$ | $\mathrm{A}^{\text {C }}$ | $18 \mathrm{~F} \times 15 \times 7 \frac{3}{8}$ | 6.47, 6D6.6D6, 75, 42,80 | Super. |
| 440 C | 69.50 |  | Console | $\begin{gathered} 540-1600 \\ 5600-15.500 \end{gathered}$ | $\mathrm{AC}^{\text {c }}$ |  | 6.A7, 6D6, 6D6, 75, 42, 80 | super. |
| 460 A | 69.50 |  | Table | $540-20.000$ | $A C^{\circ}$ | $18 \times 15 \frac{5}{6} \times 8{ }^{8}$ | 58, 56. 58, 58, 2A6, 2A5. 80 | Super. |
| 460 B | 67. 50 |  | Table | $540-20,000$ | AC |  | 58. 56, 58, 246, 24 5, 80. 58 | Super. |
| 460 R | 94.50 |  | Console | 540-20.000 | AC | $37 \times 21 \times 13 \frac{1}{4}$ | 58, 56. 58, 2A6, 2.45, 80,58 | Super. |
| 480 D | 149.50 |  | Console | 540-22.500 | AC | $38 \frac{1}{2} \times 24 \times 15$ | 78,76, 77, 78, 78, 6B7. 42. 6A6, 83 V | Super. |
| 376 BT | 34.95 |  | Table | $540-1600$ | Bat. | $18 \frac{1}{10} 14 \frac{3}{3} \times 12 \frac{1}{4}$ | $1.36,34,34,32,33$ | super. |
| 3768 | 59.95 |  | Console | ${ }_{540-1600}$ | Bat | $41 \times 244 \times 12$ | $146,34,34,32,33148$ | Super. |
| 462.4 462 B | 69.50 67.50 |  | Table | $540-20.000$ $540-20.000$ | 110 DC 110 DC |  | $78.76,78,78,85,48,48$ $78.76,78,78,85,48,48$ | Super. |
| 462 Y | 96.50 |  | Console | $540-20.000$ $540-20,000$ | 110 DC | $35 \times 18 \frac{1}{2} \times 13^{\circ}$ | $78,76,78,78,85,48,48$ $78,76,78.78 .85 .48,48$ | Super. <br> Super |
| 79 C | 49.95 | Auto. |  | 5 20.00 | H0 | - $\times 172 \times 13$ | (6) ${ }^{(5)}$ ( ${ }^{\text {a }}$ | Super. |
| 45A | 36.95 | Auto. |  |  |  |  | (5) | Super. |
| Wells-Gardner \& Co., 2701 No. Kildare. Chicago, 111. |  |  |  |  |  |  |  |  |
| 27 D 1 | \$58. 50 |  | Mantel | $6000-18.000$ | AC | $164 \times 15 \frac{1}{2} \times 11$ | 6137, 6D6, 42, 7f, 80, 61)6, 6126 | super. |
| 271) 5 | 69.50 |  | Console | $6000-18.000$ $530-1750$ | AC | $35 \frac{1}{2} \times 221 \times 12$ | 6R7. 6D6, 42, 76, 80, 6D6, 6D6 | Stper. |
| 20 C 5 | 89.50 |  | Console | $\begin{aligned} & 5800-18.300 \\ & 530-1750 \end{aligned}$ | AC | $38 \frac{1}{4} \times 23 \times 12$ | 6D6, 6D6, 6D6, 45, 76, 6D6, 45, 76, 80, 76 | siper. |
| 22 BS | 110.00 |  | Console | $\left\{\begin{array}{c}5800-18.300 \\ 530-1750\end{array}\right.$ | AC | $38 \frac{1}{\frac{1}{2} \times 23 \times 12}$ | $\begin{aligned} & 6 \mathrm{D6}, 6 \mathrm{D6}, 6 \mathrm{D} 6,42,42,76.76 .6 П 6.42, \\ & 75,80,80 \end{aligned}$ | Asper. |
| 25 El | 40.50 |  | Mantel | 530-1550 | Bat. | $16.515 \frac{1}{1} \times 11$ | 30, 32, 34. 19, 34 | Super. |
| 26815 | 63.00 75.00 |  | Mantel | $\begin{array}{r}530-1750 \\ 530-1750 \\ \hline\end{array}$ | 32 DC 32 DC |  |  | Super. |
| 27 Cl | 72.50 |  | Mantel | 530-1750 | Bat. | $16 \frac{1}{2} \times 15 \frac{1}{2} \times 11$ | $14,30,34,34,34,30,30$ | super. |
| 27 C 5 | 84.50 |  | Console | 530-1750 | Bat. | 351 $\times 22 \times 12$ | 19, 30, 34, 34, 34, 30, 30 | Super. |
| 29B5 | 82.00 |  | Console | $5800-16.200$ $530-1750$ | Bat. | $38 \frac{1}{2} \times 23 \times 12$ | 34, 34, 34, 30, 30, 30, 34, 30, 19 | super. |
| 26 U I | 54.50 | Auto. |  | 530-1500 |  | $10 \times 6 \times 7$ | 75.77, 78, 41, 84, 78 | Super. |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
| WR21 | 31.95 29.95 | - . . . . . . . . . . . . . . . . . . | Table | $3000-540$ $3000-540$ | AC |  | 78, 78, 77, 43, 25Z5 6D6, $6 \mathrm{Db}, 42,6 \mathrm{C} 6.80$ | Super. |
| WR23 | 67.50 |  | Table | 20.200-540 | AC | 148x $88 \times 178$ | 58, 56, 58, 58, 2A 6, 2A 5, 80 | Super |
| WR24 | 89.50 |  | Console | 20.200-540 | AC | $37 \times 22 \times 12$ | 58, 56. 58, 58, 2A6, 2A 5. 80 | super |
| WR25 | 39.95 | Auto. |  | 1760-540 |  | $9 \times 6 \times 5$ | 78, 647. 78, 75, 41, 84 | supe: |
| WR26 | 52.50 | Auto. |  | $1760-540$ |  | $7 \times 7 \times 111$ | 77.77, 78, 75, 42, 84 | Super |
| WR27 | 22.95 |  | Table | 1760-540 | AC | $8 \times 10 \frac{1}{3} \times 6 \frac{1}{2}$ | 6A7, 77, 42, 80 | Super |
| WR28 | 54.50 |  | Table | 5,500-5600 | AC | $10 \frac{1}{1} \times 14 \frac{1}{1} \times 7 \frac{1}{3}$ | 6.47, 6D6, 6D6, 75, 42, 80 | Super. |
| WR29 | 69.50 |  | Console | 1600-540 | AC | $37 \times 21 \times 11$ | 6.A7, 6D6, 6D6, 75, 42, 80 | Super. |
| WR30 | 139.50 |  | Console | 22,500-540 | AC | $39 \times 23 \frac{1}{4} \times 12 \frac{1}{2}$ | 78, 76, 77, 78, 78, 6B7, 42, 6.16, 6.46, 83v. | Super. |
| Wholesale Radio Service Co., Inc. 100 Sixth Ave., New York N. Y. (Lafayette) |  |  |  |  |  |  |  |  |
| A-15 | \$36.90 |  | Table | 1580-545 | Univ. | $8 \times 12 \times 6$ | 77, 77, 78, 43, 25z5 | Super. |
| A.M-26 | 46.50 |  | Table | $\{16.700-6000\}$ | AC | $15 \times 12 \times 6 \frac{1}{2}$ | 6.47, 78, 75, 42, 80 | Super. |
| B-41 | 89.00 |  | Console | $\left\{\begin{array}{r}18,750-6000 \\ 1\end{array}\right.$ | AC | $36 \times 20 \times 11 \frac{1}{2}$ | 6D6, 6D6, 6D6, 6B7, 76, 42, 80 | Super. |
| $\underset{\mathrm{F}-44}{\mathrm{~A}-20}$ | $\begin{array}{r} 39.95 \\ 149.50 \end{array}$ | Auto. <br> Phono.-Comb. | Table | $\begin{array}{r} 1500-545 \\ 1500 \rightarrow 545 \\ 23.000-150 \end{array}$ | $\mathrm{A}^{\text {C }}$ | $\begin{aligned} & 16 \frac{3}{3} \times 10 \frac{1}{2} \times 7 \frac{7}{2} \\ & 24 \times 16 \times 17 \frac{1}{2} \end{aligned}$ | $\begin{aligned} & 78,78,77,75,41,6 \mathrm{Z} 4 \\ & 58,58,58,56,56,56,57,2 \mathrm{~A} 3,2 \mathrm{~A} 3,5 \mathrm{Z} 3 \end{aligned}$ | Super. <br> Super. |
|  |  |  |  |  |  |  |  |  |
| 4CD5-29 | 35.50 |  | Table | $\left.\begin{array}{r}16,700-6000 \\ 4000-1500 \\ 4500-545\end{array}\right\}$ | AC | $14 \mathrm{x} \times 12 \times 7$ | 6.17. 78, 75, 42, 80 | Super. |
| 35B-566 | 38.60 |  | Table | $1500-545$ $4000-1500$ | AC | $13 \times 7 \frac{1}{2} 10$ | 6.17, 78, 75, 42, 80 | Super. |
| 3VB6-73 | 53.25 |  | Table | $\left.\begin{array}{r}16,700-6600 \\ 400-1500 \\ 1500-545\end{array}\right\}$ | AC | 133x 1 $^{6} \frac{1}{2} \times 8$ | 78, 78, 6A7, 42, 75, 80 | Super. |
| 3VB6-710 | 69.90 |  | Console | $\left\{\begin{array}{c}16,700-6000 \\ 4000-1500 \\ 1500-545\end{array}\right\}$ | AC | $38 \times 23 \times 12$ | 78, 78, 6A 7, 42, 75, 80 | Super. |
| $4 \mathrm{B6}$ | 47.90 | Auto. |  | 1500-545 |  | $10 \times 6 \times 8$ | 78, 78, 77, 75, 84, 41 | Super. |
|  |  |  |  |  |  |  |  |  |
| 801 805 | $\$ 34.95$ 29.95 |  | Midget | $\begin{aligned} & 535-1750 \\ & 535-5000 \end{aligned}$ | Univ. AC | $\begin{aligned} 7 \frac{3}{3} \times 12 \frac{4}{4} \times & 5 \frac{1}{2} \\ 15 \times 12 \frac{3}{4} \times & 8 \frac{1}{2} \end{aligned}$ | $\begin{aligned} & \text { 6D6, 6D6, 75, 43, } 25 \mathrm{Z} 5 \\ & \text { 6F7,6D6, 75, 42,80 } \end{aligned}$ | Super. <br> Super. |
| 807 | 39.95 | -.-.-.-....... | Table | $\left\{\begin{array}{c}535-1600 \\ 5600-18,000\end{array}\right\}$ | AC |  | 6A7, 6D6, 75, 42, 80 | Super. |
| 808 | 49.95 |  | Table | 537-15,800 | $A C$ | $16 \frac{1}{2} \times 12 \times 81$ | 6D6, 6A7, 6D6, 75, 42, 80 | Super. |
| 809 | 54.95 |  | Table | 537-15,800 | $\mathrm{AC}^{\text {c }}$ | $16 \times 124 \times 88$ | 6D6, 6.47, 6D6, 75, 42, 80 | Super. |
| 311 825 | 54.95 49.95 |  | Table ${ }_{\text {Midget }}$ | 537-18,200 535-12,000 | ${ }_{\text {Univ }}$ | $13 \times 122 \times 88$ $8+16 \times 7{ }^{83}$ | 6D6, 6A7, 6D6, 75, 43, 25Z5 6D6, 6D6, 6D6, 37, 75, 42,80 | Super. Super. |
| 825 827 | 49.95 54.95 |  | Midget | $535-12,000$ $535-12.000$ | ${ }^{\text {AC }}$ |  |  | Super. |
| 829 | 69.95 |  | Table | 535-12,000 | AC | $181 \times 16 \times 8$ | 6D6, 6D6.6D6, 37, 75, 42, 80 | Super. |
| 835 | 89.95 |  | Table | 530-46.150 | ${ }^{\mathrm{A} C}$ | $213 \times 16 \times 113$ | 6D6, 647. 6D6. 6D6, 75.42.42, 42, 76. 52B | Super. |
| 845 | 39.95 49.95 |  | Console | 535-5000 | ${ }^{\mathrm{AC}}$ | $40 \times 233 \times 11$ 年 | 6F7, 6D6, 75, 42, 80 | Super. |
| 847 | 49.95 59.95 | - .................... | Console | $535-5000$ $535-18000$ | $\mathrm{AC}^{\text {C }}$ | 37 ${ }^{1} \times 202 \times 12$ | 6F7, 6D6, 75, 42, 80 | Super. |
| 850 860 | 59.95 69.95 |  | Console | 53-18,000 $53-15,800$ | $A C$ | - $39 \times 22 \times 12 \times 12 \times 12$ |  | Super. |
| 861 | 79.95 |  | Console | 537-15,800 | ${ }^{\text {AC }}$ | $40 \times 24 \times 13$ | 6D6, 6A7. 6D6, 75. 42,80 | Super. |
| 870 | 79.95 |  | Console | 535-12,000 | AC: | $39\} \times 224 \times 13$ | 6D6, 6D6, 6D6. 37, 75, 42, 80 | Super. |
| 871 | 92.95 |  | Console | 535-12.000 | AC | $40 \times 27 \times 13 \frac{1}{2}$ | 6D6, 6D6. 6D6, 37, 75, 42, 80 | Super. |
| 880 | 120.00 |  | Console | 530-46,150 | AC | $40 \frac{1}{2} \times 24 \times 13$ | $\begin{aligned} & 6 \mathrm{D} 6,6 \mathrm{~A} 7.6 \mathrm{D} 6,6 \mathrm{D} 6,75,42,42.42 .76 . \\ & 52 \mathrm{~B} \end{aligned}$ | Super. |
|  |  | Auto. |  |  |  |  | 6C6, 6F7, 6D6, 75, 42, 624 |  |
| ${ }^{7}$ De Luxe | 29.99 750.00 | Auto. ${ }_{\text {Auto. Phono. }}$ Comb. |  |  |  |  | $\underset{(25)}{6 \mathrm{D} 6,6 \mathrm{C} 6,75,42,84}$ |  |
| De Luxe | 750.00 | Auto. Phono. Comb . | Console |  | AC |  | (25) | Supar. |

and to make it easy for for to get a fir $d^{\prime}-\varepsilon y \varepsilon$ view of the woods biggest selling radio line... $1 \varepsilon \varepsilon$ the two pages that follow

## PHILCO

## A PHILCO FOR EVERY PURSE AND PURPOSE 49 Marvelous New 1935 Models!

Concentrate on the radio most in demand and enjoy BIGGER BUSINESS! Acclaimed everywhere as undisputed leader in the industry, PHILCO offers the most complete line in radio history! Included in the 49 sensational new models are American Broadcast Receivers, American and Foreign Broadcast Receivers, the new High-Fidelity Radio, AC-DC Models, Direct Current Models, Battery-Operated and 32-Volt Receivers and Auto Radios. It's the BIG PROFIT line of the year!
PHILCO—A Musical Instrument of Quality


Prices slightly higher Denver and West All prices subject to change without notice

HIGHBOYS
$\$ 79.50$ to ${ }^{\$ 129.50}$



LOWBOYS
$\$ 42 .{ }^{50}$ to ${ }^{\$}$ 150

INCLINED SOUNDING BOARD MODELS
$\$ 75$ to ${ }^{\$} 200$


REMOTE CONTROL MODELS
$\$ 89 .{ }^{50}$ to ${ }^{5} 600$



RADIO-PHONOGRAPH MODELS
\$90 to ${ }^{5}$ 295

# UNDISPUTED LEADER in Quality, Value, Advertising, Public Acceptance, Turnover, Sales and Profit 

## Now Ready! <br> PHILCO HIGH-FIDELITY RADIO

They said it couldn't be done-yet here it is! HighFidelity Radio, perfected by the world's largest radio manufacturer, and ready for the wide-awake dealers of America!

After months of exhaustive research by foremost engineers in PHILCO'S great laboratories, the new PHILCO 200X High-Fidelity Radio has been developed for the thousands of music lovers who demand a better receiver-who buy their radios on the basis of tonal quality!

The result is epoch-making! This new High-Fidelity Radio, with its greatly extended tonal range of 50 to 7,500 cycles, is the first radio to reproduce every note, every overtone, every sound exactly as it is broadcast!

It's the ideal set for the dealer who really wants to be in the radio business. Be the first in your community to cash in on the big demand for this, the greatest achievement in radio!


HIGH-FIDELITY-\$200
The new PHILCO 200X High-Fidelity Radio offers unprecedented sales opportunities. Music lovers everywhere have asked for it-and now it's here, ready for YOU! Get in touch with your distributor today!

## PHILCORADIO \& TELEVISIONCORP.

# D. W. MAY TO MANUFACTURE FULL LINE OF RADIOS, AND REFRIGERATORS 

Plant at Newark, N. J., Now in Operation-<br>Nate Hast, Sales Manager; Herman Rose in Charge of Production

D. W. "Winnie" May, one of the best known figures in the radio field, has thrown has hat into the manufacturing ring. He will head May Radio and Refrigeration Corp. with a large plant and general offices in the May Building, Newark, N. J. Mr. May has been prominent in every phase of the industry since its inception. His pleasing personality and dynamic activities have won for him hosts of friends throughout the trade. He was the first to sponsor dealers' trips, taking retailers to Bermuda one year and also to Havana.

Mr. May points out that rather than refer to his manufacturing project as a new organization, he prefers to call it a "merger of men and minds." He stated "these men associated with me have won their spurs in their respective fields and we are merging their experience and talents to the ultimate benefit of our distributors and retailers."
In outlining plans for his organization Mr. May said, "We will first market our radio line which will have its initial public showing at the National Electrical Exposition, to be held in Madison Square Garden.
"The May radio is a new kind of radio and, with its many new and exclusive features, represents one of the greatest values on the market today. We have paid a great deal of attention to the styling and engineering of our line. The chassis is directly and fully licensed under patents of RCA, Hazeltine and Latour. It was designed by our chief engineer, Frank M. Squire, formerly connected with DeForest, Grebe, Kolster and Fada."

The new "May" line is now in production in a complete range of models from a.c.-d.c. compacts to deluxe consoles. The majority of the models are equipped for all-wave reception and feature the patented May Chromatic dial.

Announcements relative to the refrigeration and air conditioning lines will be forthcoming soon. Advance plans indicate that these lines will also incorporate many original features.
Mr. May enthused over his distributor plan. "It really gives the distributor a break and his interests are protected."

This new organization brings together again two popular men in trade circles.

D. W. May

Nate Hast and Herman Rose, who manufactured the Shamrock radio when the industry was in its swaddling clothes. Nate Hast, as vice-president in charge of sales, will direct all the sales efforts of May Radio \& Refrigeration Corp. His popularity is wide-spread and the distinctive, peppery Hast method of operation bespeaks a healthy volume for the May products. Mr. Rose, another veteran of the industry, will be in charge of manufacturing and brings with him many years of production experience.

Advertising and sales promotion will be directed by Charles $P$. Englehardt. who has been connected with D. W. May for several years in a like capacity.

## Leaders in Field of Music Urge Better Radios

Calling upon American inventors to make drastic improvements in present day radio instruments, more than 100 leaders in the field of music from widely separated parts of the country, demand an improved radio instrument which will make the radio as important a musical influence in American life as it is a disseminator of ideas. The views of eminent musicians and others on this subject are contained in statements received by Pitts Sanborn, well known New York music critic, and just made public by him.

Of the many musical leaders who expressed to Mr. Sanborn their views on
the radio as a musical instrument, the majority agreed that it was imperfect and showed an eagerness for immediate improvement.

## Trav-Ler Mig. Company Sold

Harold J. Wrape, president of the Benwood-Linze Co., announces he and his associates have disposed of the TravLer Mfg. Co. to Max Hoffman of the Hoffman Mfg. Co., 1400 S. Michigan Blvd., Chicago.

The business of the Trav-Ler Co. will hereafter be conducted from Chicago.

## RCA Victor Service Meetings

A series of countrywide meetings, conducted by RCA Victor Company service engineers under the auspices of local
distributors in 34 principal cities were begun simultaneously on August 20 and will continue into the early part of September, to be followed by similar meetings in more than 160 other localities, according to an announcement by E. M. Hartley, service manager of RCA Victor. Over one hundred RCA service engineers will conduct meetings in the small cities for the benefit of those service men who are unable to attend the meetings in the larger cities.

## Music Lovers Hear "High Fidelity" at Waldorf

On Wednesday evening, Sept. 12, in the Grand Ballroom of the Hotel Wal-dorf-Astoria, New York City, under the auspices of a distinguished committee of music lovers, educators and artists, and before an invited audience representing leaders in the arts and sciences, Lucrezia Bori, prima donna soprano of the Metropolitan Opera Association, introduced the Philco High Fidelity radio. This development of radio music was broadcast by the Columbia Broadcasting System.

In this new "Musical Instrument of Tomorrow" the Philco Company demonstrated natural reproduction not only of the full range of fundamental tones but of the overtones or harmonics which give the characteristic tone quality, timbre, to the different musical instruments and voices.

Miss Bori first sang in full view of the audience, then repeated the same music in a glass-enclosed booth, reproduced on the stage through the high fidelity receiver.

## National Radio Show Sept. 19-30

The second annual combined National Electrical and Radio Exposition opens at Madison Square Garden at 2 p.m. on Wednesday, Sept. 19. Until the exhibit closes eleven days later, the public will be admitted from 11 a.m. to 11 p.m.

One hundred and ten various exhibits by leading manufacturers will be on display, making the coming show the largest ever held by the two industries.
The Show Committee announces the general program for the exposition with the naming of eleven show days as follows: Sept. 19, Radio Progress Day; Sept. 20, All Wave Radio Day; Sept. 21, Army and Navy Day; Sept. 22, Lighting Day; Sept. 23, Broadcast Day; Sept. 24, American Home Day; Sept. 25, Police Day; Sept. 26, Science Day; Sept. 27, Weather Control Day; Sept. 28, Health Day; Sept. 29, Exposition Day.
The crystal broadcasting studios will be erected in the Garden and radio programs will be linked with nearly 200 stations daily from 2 p.m. to 11 p.m. National and Columbia networks and such local stations as WMCA, WOR, WINS, WNYC, WNEW and WHOM are contributing the necessary talent with the cooperation of the special program sponsors.
Officially the 1934 exposition will open with the annual luncheon of the Electrical Association of New York Sept. 19 at the Hotel Astor.

## Complete Government List of Shortwave Stations Available

The Department of Commerce announces the compilation of an official listing of worldwide shortwave stations. Contains information on 2,400 transmitters by frequencies. Also cross-indexed geographically with special identification of the better known stations. This 112 page booklet, including two maps, sells for 25 cents. Obtainable from the Bureau of Foreign and Domestic Commerce, Washington, D. C., or the Bureau's district offices.

ELECTRAD, INC., New York City, announces the appointment of George $E$. Palmer as general sales manager. Mr . Palmer formerly served in a similar capacity with Dubilier Condenser Corp.

## RADIO SHOWS

NEW YORK SEPT. 19.29
National Electrical and Radio Exposition, Madison Square Garden

This is the second annual "trein"" affair of this nature and will be the Radio Industry's one big national showe for both the public and the radio dealers. Again sponsored by the Electrical Association of New York.

PHILADELPHIA
OCT. 8-13
Philadelphia Elec. Exhibit
Sponsored by the Electrical Association of Philadelphia. COLUMBUS, OHIO OCT. 2-5

Under the auspices of Columbus Radio and Refrigeration Assoc., Inc. Will be held in Memorial Hall. Henry Reinhard, show manager.

IRSM CONVENTIONS
ROCHESTER, N. Y. SEPT. 16-18
This is the first anmal conzention of the Institute of Radio Scrvicemen to discuss regional development matters. Will be held at the Seneca Hotel. Nationally known speakers EXHIBITS

NEW YORK
OCT. 19-21
The National Convention and Exhibit of the Radio Service Industry. Will be held at the Hotel Pennsylvania

## "RR" at Service Show

"Radio Retailing" will have a booth at the Institute of Radio Servicemen's First Annual Convention, Hotel Seneca, Rochester, N. Y., Sept. 16-18. Technical Editor W. W. MacDonald will be on deck to receive callers. "Come up and see us sometime."


## RCA Victor Executives

Some of the leading RCA Victor executives who took a prominent part in the mectings for jobbers, held at the Stcven Hotel, Chicago, last month, included: (seated, left to right) $W . R . G$. Baker, vice-president and general managcr; E. T. Cumninghant, president; M. F. Burns, merchandise manager. Standing: Ted Wallerstcin, manager records and recording; Ernest $H$. Iogel, radio and phonograph division; and John Vassos, consultant designer.

## Rochester Service Men Will Entertain Many IRSM Guests

The "key" Rochester (N. Y.) Section of the Institute of Radio Service Men will entertain a host of service men at its convention, September 16 to 18 . Among them will be National President Paul McGee. Also Howard Sack and Forrest Arnold, of the New York Section; Neal Bear, chairman of the 19th Region, and Executive Secretary Kenneth Hathaway.

Due largely to the energetic efforts of Edgar Arnold, chairman of the 20th Region, the following chapters will be represented: Lake County, of Muncie, Ind., Elmira, Binghamton, Syracuse and Utica.

A comprehensive program of technical lectures has been prepared. Speakers well known nationally will appear on the platform.

## Bond Electric on the Air

Starting the first week of September, Bond Electric Corp., Jersey City, N. J.. inaugurated a weekly radio program in the interest of the trade handling Bond flashlights, radio tubes and condensers.

The program features a number of novel premiums for the audiences of 34 stations from coast to coast. There is a complete tie-up with jobbers and dealers as well as special sales offers, window material, consumer literature and more than a hundred consumer prizes.

# D-I-A-L-I-N-G-S 

A new field study of radio listening habits just completed by Dr. Link of the Psychological Corp. reveals that $66 \%$ of the families interviewed listen to radio as much or more than they did a year ago. This figure shows a decided increase over the results of a study made by Dr. Link in May of this year. which indicated that $58 \%$ of the families interviewed were listening to radio as much as they did the year before.

Word reaches us that the Balkeit Radio Corp., Chicago, weill concentrate their production on one model-a "World Wide" model. Mass production of one unit zoill make possible many sazings that will reflect itself in low price and high quality as arell as some nozel newe ideas, 'tis claimed.
E. A. SIPP. until recently manager of the Lighting I)ivision of Pyle-National Co., has become associated with the Burgess Battery Co. and the C. F. Burgess Laboratories, Inc., Chicago.

So substantial has been the demand for the Columbia Broadcasting System's booklet, "16 Hours a Day" (see August issue, $R R$ ) that Columbia has gone a step farther and prepared three "blow up" photographic pancls sutitable for radio dealers' window trinis. The conter one is 49 inches high and the treo side pieces measure 24 inches wide by 32 inches high. Also appropriate for wall display. For your copy, write us.

In line with the rapidly growing popularity of Sprayberry's Practical $M e$ chanics of Radio Service, F. L. Sprayberry announces his removal to larger
quarters at 2548 University Place, N.W., Washington, D. C. Mr. Sprayberry has added to his course a complete coverage of short wave radio and the all-important job of selling service.
The American Electric Ignition Co., of Oklahoma City, Okla., announces its appointment as a TUNG SOL zholesaler.

A new all wave oscillator developed by Wireless Egert Engineering Co., New York, has been made available to service dealers by National Union Radio Corp., New York City. Features of this new instrument include direct reading on fundamentals, full frequency coverage with a range of $14-3,000$ meters and extreme accuracy.

Herbert E. Young will again devote his chergetic self to furthering the business interests of a former employer, William Grunors. Mr. Young has been appointed castern sales manager of the General Houschold Utilities Company, of Chicago. with headquarters in New York City. Goes zeith Grunoze from a similar position with the Gibson Refrigerator Company.

The Electric Lamp \& Supply Co., St. Louis, Mo., Zenith distributor, has added a complete wholesale radio parts department. James Broadwell, formerly with Van Ashe, will be in charge.

Harper-Meggee, Inc., Pacific Northwest distributor for RC.A Victor, reports highly successful dealer mectings, introducing the neze line of RC. 4 sets, at Spokane, Portland and Seattle.


Lowell Thomas

## Westinghouse Sets Take Name from "Home of Tomorrow"

"Every receiver an authentic model as featured in the Home of Tomorrow," is the way the Westinghouse Electric Supply Company, New York, will designate its new line of sets. Westinghouse has erected at Mansfield. Ohio, a model electrical home. In addition to serving as a research laboratory for its engineers, Westinghouse is displaying the latest equipment in electrical appliances -and a "matched" radio in every room. To date over 70,000 people have inspected this Home. In addition it has received extensive publicity in national magazines and newspapers.

Throughout, from pent house to recreation room, from book room and bedrooms to breakfast nook and living room, from kitchen to laundry, an appropriate Westinghouse radio is in use. All Westinghouse promotion material will carry the line: "As featured in the Home of Tomorrow."

This concern also has produced a three reel sound picture on this show place featuring Lowell Thomas. It will be shown to the public through audiences in stores of all types and will be available to radio dealers. A valuable sales aid to boost the multiple set idea and emphasize the all-wave models.

## Four Concerns Now Pushing Records and Phonographs Aggressively-User Interest Growing

The phonograph business, after passing through the customary summer slump, is in an unusually well-fortified position to help dealers interested in records and combination instruments get sales volume this fall. Aggressive reorganization plans are being laid by the Brunswick Record Corporation for both the Brunswick and Columbia labels. The latter concern now is controlled outright by Brunswick.

And a new concern, Decca, enters the domestic field, sharpening competition to a point which should improve the quality of all recorded products. RCA Victor remains convinced that there is a genuine future for record business. Further, the September releases reveal no less than five fine album sets of classical music and a timely array of popular dance discs. See next page for box of "Hot Hits."


## Tom Joyce

Has been ad vanced to the responsible position o $f$ advertising manager of both RCA-Victor and RCA-Radiotron. Mr. Joyce's rise has been rapid and based entirely upon enthusiasm, initiative and a thorough grasp of his profession.

## New Westinghouse Lithography

Westinghouse is out with 24 new striking and colorful display pieces which are the handsomest we have seen in many moons. It is proposed to institute a monthly service and as the pieces are in various sizes they lend themselves to many combinations so there will be no excuse for "stale" windows.
Real attention-attracting windows can be easily and quickly assembled with this material.


## First Radio Baby Carriage

It's here! $A$ commercially practical radio set glaranteed to lull baby to sleep and keep Mother awake.

Carriagc by Marshall Field. Radio by Simplex Radio Co., Sandusky, Ohio. Air cell batteries by Na tional Carbon Co., and baby by Mr. and Mrs. Don Miller, Chicago representative of "Ra-
dio Retailing."

## New Victor Product

A new RCA Victor product should interest every disc dealer for it is designed to produce repeat profits and interest many radio owners in recorded music. We reler to the new DUO JUNIOR, a humi-dor-appearing cabinet which holds a syunchronous electric motor, turntable (for 10 or 12 inch discs), tone arm and electric pickup. This device may be attached to any radio. Records reproduce through the loudspeaker of the set with a tone quality equal to that of many of the better combinations.

We tried out this little box on several radios and were pleased at its effective-


Victor's New Duo Junior
ness. The results obtained from symphony orchestra records as well as dance discs were very fine. The whole outfit retails for $\$ 16.50$, and the dealer can add a small service charge for the necessary installation. Of course the method of connection will be different in practically every case because of circuit deviations embodied in the wide variety of models now in use. We hooked up the "Duo Jr." to a table model and were surprised at the depth of tone and variety of volume emitted. A console radio was even better. Here's on opportunity to open up many new avenues leading to record sales among radio owners who up to now haven't had the necessary turntable for records or who haven't cared to invest money in a combination because their present radio was completely satisfactory. A long lead from the pickup to set is possible without distortion or hum. Hence, remote control, a fine selling point, looms big. You don't have to get out of your chair to change discs.

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sew wan sum an mean REIEASES MELOTONES"NEW DEAL" PROGRAM RICARDO SING CROSBY AND GUY COMBATS EACH RECORDS TO RETAIL AT 25 CENTS EACH EXTRA Lirtucu

## Jobbers' Code

(Continued from page 20)
son, American Bosch, Stewart-Warner, Graybar, Anchorlite, Westinghouse, Sparton, Atwater Kent, RCA, as well as many large wholesalers.

Opposing these "explanations," in addition to Mr. Skinner and those previously mentioned, were Judge Frances Neagle, a member of the Code Authority for the National Electrical Manufacturers Association, National Union Radio Corporation, The Muter Company, Chicago, and others.
Three hundred and twenty-nine pages of extremely frank, revealing testimony were taken; constituting, in itself, a complete picture of the present problems of distributing radio products. This vast amount of carefully prepared arguments for and against, and the large number of top radio executives in attendance, indicate the importance of the issues involved.

## Explanation No. 11 Not Decided

Another vital point was aired at the Hotel Raleigh public hearing. This had to do with the meaning of Article IV, Section 1, Subterfuge. The fine points of this perplexing question have not been decided by Deputy Administrator Crockard as we go to press. The "Explanation," now awaiting confirmation or rejection by the Administration, reads as follows:
"Where a manuiacturer sells co-incidentally to wholesalers and to retailers in any district it shall be considered a violation of Article 4, Section 2, prohibiting discrimination between dealers as said manufacturer functioning as a wholesaler sells to dealers on a price or discount basis more favorable to dealers than that at which the same merchandise is sold by the distributors in such district.
"As set forth under official Divisional Code Authority Bulletin 4, the status of the sales of a manufacturer made direct to dealers is identical with that of a wholesaler performing the same function. therefore in selling the identical merchandise you cannot avoid discrimination between dealers unless the above basic principle is observed."
Inasmuch as the context of Explanation No. 11 is so closely related to the same problems involved in Explanation No. 5, it would appear, in the opinion of many of those present at the hearing, that Explanation No. 11 must be sustained.

## Must Enlarge AssessmentSources to Administer WRA Code

WASHINGTON, Sept. 7.-A revision of the present assessment restrictions is necessary if a sufficient amount of money to meet the expenses of operating the Radio Wholesalers Code is to be obtained, members of the WRA told the Administration here today. Otherwise it will not be possible to enforce the many constructive features of this Code which, already, is improving the status of radio distributors.

Hearing was held before Frank C. Felhaber, assistant deputy administrator. Testimony was presented in support of an application filed by the Code Autherity for termination of that provision of Administration Order X-36 which

## Low Priced Records Now Feature Top Notch Artists

Bing Crosby and Guy Lombardo, for the first time, on twenty-five cent records! In a sensational, yet credited as a constructive move to stimulate record buying at a time the public normally starts thinking again in terms of purchasing additional records, it is announced that Melotone will release ten Bing Crosby and ten Guy Lombardo records on September 15, each faced with two numbers that have been popular sellers, to retail at the regular Melotone twenty-five cent price.

Many dealers have expressed the belief that greatly increased record sales will result from the offering of these lower-priced Crosby and Lombardo records. Such releases will not stop with the September 15 group. Additional Melotone records by the same artists will follow.

An elaborate advertising and dealer service campaign appropriation accompanies the "New Deal" Melotone Crosby and Lombardo records, with display cards, window strips, and other exploitation aids made immediately available to the trade.

Among the "best sellers" appearing
frees members of the trade from contributing to the expense of administrating a Code other than that embracing their principal line of business.

It was explained that there now remain few concerns whose principal line of business is the wholesaling of radio products. Unless, therefore, assessments are permitted on jobbers who sell radio products in substantial volume, but not necessarily large enough to rate as the principal line of business, the Radio Code Authority will not be able to function.
H. G. Erstrom stressed the absurdity of not levying an assessment upon a jobber whose radio sales amounted to $\$ 200,000$ a year merely because his sales of refrigerators exceeded this amount.

## Utah Will Appeal

J. W. Caswell, president of Utah Radio Products, has announced that plans are under way to appeal immediately the decision rendered by Judge Brewster in Boston in the recent suit brought by it and Lektophone Corporation against the Boudette Radio Co.

Mr. Caswell states that the decision applies only to the so-called Farrand patents, which are owned by the Lektophone Corporation and has no application whatsoever to the many other patents on speakers which Utah controls.

## Goldman Joins Wholesale Equipment

David F. Goldman, formerly with North American Radio Corp., New York City, has taken the position of branch manager of the newly opened Newark branch of Wholesale Radio Equipment Co., New York City, handling Stewart Warner, Zenith and RCA-Cunningham. Mr . Goldman is particularly well known throughout the metropolitan section where he has been identified with the trade for many years.
on these records are such numbers as "Once in a Blue Moon," "Home on the Range," "You Oughta Be in Pictures," "How Do I Know It's Sunday," "I Raised My Hat," "Good Night, Lovely Little Lady," "Black Moonlight," "Some of These Days," "Little Dutch Mill." "Riptide," "True," and "We're a Couple of Soldiers, My Baby and Me."

## English Firm Invades Local Field

Decca Records, Inc., the American branch of the London phonograph disc bakers, has started functioning with an impressive array of recording artists. Jack Kapp, formerly with Brunswick, and E. F. Stevens, former Columbia sales manager, are president and general sales manager respectively of this new outfit. Recording studios in New York, Chicago and Los Angeles are already putting such names of Guy Lombardo, Bing Crosby. Casa Loma Orchestra, Mills Brothers, Ted Lewis and Victor Young on Decca labels. Twenty-nine more illustrious names in the music and entertainment world, including Ethel Waters, Everett Marshall, Noble Sissle, Frank Crumit, Dorsey Brothers and George Gershwin, have been signed by Kapp and Stevens. Race, Hill-Billy and Mexican as well as popular records are to be made by the new firm. Decca announces eight branches in principal cities. The portable instrument field will not be overlooked and, according to Mr. Stevens. dealers will be supplied with every assistance in the form of hangers, cross-indexed catalogues and supplements and other display and advertising material.

## RECORDS FOR THE COUNTER

## BRUNSWICK

TWO CIGARETTES IN THE DARK (from "ITill That Story"). ROLLING
IN LOVE. Two fine vocals by Joe Morrison, of "The Last Round-up" fame. No. 6959.

LA CUCARACHA (The"Mexican Cockroach Song'). DUST ON THE
MOON.
The Costilian MOON. The Castilian Troubadours bring out the first recording of the hit short "La Cucaracha." No. 6961.

I'LL CLOSE MY EYES TO EVERY ONE ELSE. I'M JUST THAT WAY Abe Lyman and His California Orchestra. No. 6957.

## VICTOR

I SAW STARS. I'M COUNTING ON YOU. Seeing stars with Paul Whiteman and His Orchestra is going to be a popular pastime. Push No. 24705.

PARDON MY SOUTHERN ACCENT. HERE COME THE BRITISH. Hismean little in these lilting tunes, also by Whiteman. No. 24704 .

THE BLUE ROOM. DANCING IN THE DARK. Not exactly new, but
newly refurbished by the Revelers, old friends. No. 24707.

## COLUMBIA

## BY THE TAJ MAHAL. NEW MOON IS OVER MY SHOULDER. Johnny Green and His Orchestra seem all pepped up over being on the Com label for a change. No. 2940 D. <br> FUN TO BE FOOLED. LE'T'S TAKE A WALK AROUND THE BLOCK. hits from "Life begins at 8:40."



## to BOOM Sales of Phonograph

 Records ...transforms any modern AC radio into a fine electric phonograph . . . and every one sold unlocks a new market for phonograph records.

Now-VICTOR "Higher Fidelity" Records on ANY modern AC Radio!


Let's have a frank discussion. The makers of Victor Records know that your problem, and our problem, is to get more turntables in operation. That's why RCA engineers created the Duo Jr. - a compact, efficient little cabinet that makes any radio into an electric phonograph. And it sells for only $\$ 16.50$ ! Can be hooked up on any modern AC radio set . . and the result: people will hear recorded music with all the full, rich tone of a radio-dependent only upon the quality of the radio set itself.
That means not only a good chance for profit in selling these new Duo Jrs. (and almost every radio set owner is a prospect) ... but every Duo Jr. creates a new market for records.
Play the new "Higher Fidelity" Victor records on a Duo Jr. Let people find out that these new Victor records have a new crispness and definition . . . a purity of tone never before achieved in any kind of reproduction.
Fill out the coupon below . . . get the details, also, on how you can cash in on the new Blue Birds, fastest selling low priced records.

## GET THESE NEW RELEASES

24672-Love in Bloom-Fox Trot-Paul Whiteman and his Orchestra Straight From the Shoulder-Fox Trot (Both from Paramount film "She Loves Me Not") Richard Himber and his Ritz-Carlton Orchestra 24704-Pardon My Southern Accent-Fox Trot

Here Come the British-Fox Trot-Paul Whiteman \& his Orct 24705-I Saw Stars-Fox Trot

I'm Counting on You-Fox Trot-Paul Whiteman \& his. Oreh M-220-Sylvia Ballet (Delibes-arr. Jungnickel)
(Catalog Nos. 1669-71 Inclusive)
Eugene Ormandy and the Minneapolis Symphony Orchestra

# America's Most Beautiful 



## S UPREME NEONIZED TUBE TESTER <br> MODEL 85-C <br> 

This new Supreme Tube Tester has such potent sales and merchandising power for increasing tube business that it will pay radio retailers to replace their present inefficient tube testers with the new Model 85-C.

The "Neonized" feature, originated by Supreme, makes the Model No. 85-C really two tube testers in one. The true condition of tubes in terms of "good" or "bad" is instantly reflected on the new Supreme $5^{\prime \prime}$ full-vision meter, but much more important is the way it detects leakages and shortcircuited conditions in noisy and bad tubes. As many tubes require replacement because of noisy operation resulting from internal leakages as require replacement because of any other reason. The Model 85 's ability to detect these deficiencies is demonstrated by comparative tests in this new tube tester of tubes having internal leakages with tests of the same tubes in
other testers. It will be found that these tubes will pass the tests of other testers. They will not, however, generally perform satisfactorily in a radio, and tHEY WILL NOT PASS THE LEAKAGE TEST OF THE SUPREME MODEL 85.
The 85 Counter Display Model is unquestionably the most beautiful instrument in America. Its tri-toned black Walnut cabinet is an unusually practical, yet daring design which upsets all traditions. Next year all tube testers will feature Supreme's Neon leakage test and new cabinet design. But why not buy tomorrow's instrument today- the tube tester with a money making future.

## And Now Supreme's own METERS

At last. Supreme's own meters. Designed from the daily experience in home and laboratory by a radio service organization for radio servicemen. They give the final stamp of engineering skill to Supreme 1935 instruments. Model No. 310 is a 5 -inch d'Arsonval meter specifically built for universal applications in radio testing equipment. Easy readability-the d'Arsonval movement moves the pointer over a range $26 \%$ longer than usual meter scale. Fan-shaped bakelite housing moulded for semi-flush mounting makes it mountable in ordinary meter circular hole. Dimensional drawing with each meter, usable as template for drilling a panel. Each meter equipped with drawing of circuit and resistance values, thus enabling serviceman to construct AC-DC point-to-point tester.
Ask your jobber for a demonstration. Send coupon for detailed data and complete 1935 catalog.


SUPREME METER............... $\$ 6.25$
SUPREME RECTIFIER... . . . . . . . $\$ 2.75$
SUPREME RESISTOR KIT. . . . . $\$ 4.00$

# SERVICE SECTION 

## CIRCUITS of the MONTH

## New Cold Cathode Tube "Multiplies" Electrons

A new type of cold cathode tube developed by Philo T. Farnsworth of Television Laboratories, Ltd., Philadelphia, "multiplies" electrons, can be made to amplify or oscillate. A high-vacuum, current amplifier, the tube seems particularly suitable for use in direct pickup television cameras.

The tube makes deliberate use of secondary emission. In a demonstration for the editors of our sister paper, "Electronics," tubes containing two cold cathodes coated to enhance the secondary emission were used. Midway between the two cathorles, which may be flat or curved to automatically focus the electrons, was an anode in the form of a metal ring. As we understand it, an electron, produced photoelectrically by extraneous light, is accelerated toward the anode which is kept at a

positive voltage compared to the cathodes. It is kept from actually hitting the anode by inmersing the tube in an electromagnetic field (see diagran and photo of tube and television pickup camera) which imparts an additional component of motion.

The electron goes through the field of the anode and, striking the second cathode, produces there additional carriers of electricity by secondary emission. These secondaries then travel to the first cathode through the anode field in exactly the same manner and produce additional electrons. The process, therefore, is cumulative, similar to that occurring in a gaseous discharge or phototube, where ionization electrons

are formed
The diagram shows such a tube hooked up as an r.f. amplifier.

## Tuning Flasher

"Circuits of the Month" is indebted to Jobn F. Rider ( 1440 Broadway, New York City) for the following circuit. which is just one of many fully described in his newly revised book "Servicing Superheterodynes" (\$1), a 278-page work written expressly for servicemen and including, among other things, a complete list of commercial receiver i.f. frequencies.

Text is from the book
"This system is used in the Silvertone 1722, 1732 series. The illustration shows just the tuning flasher portion of the circuit. The 78 tube is the regular i.f. tube used in the receiver. The tumed i.f. transformer primary associated with the letter $A$, is the primary of the i.f. transformer, which links the i.f. tube with the demodulator tube. The last named tube is not shown in the schematic. Another i.f. transformer $T$ is joined to the plate circuit of the i.f. amplifier. This transformer used litz wire so as to provide an extremely high ' $Q$ ' factor. In other words, it tunes very sharply. When a signal is fed to the 78 tube, this signal, properly amplified, appears across the two tuned primaries in the plate circuit of the 78 tube. A portion of the signal is fed to the demoduator and a portion of the
signal is applied across the diode platecathode circuit of the 6B7 tubee.
"The control grid of the uis/ is connected to point 2 and the cathode is connected to point 1. As the signal is tuned in on the regular tuning dial the proper i.f. signal is produced and fed into the 6B7. The voltage across the 1 megohn1 resistor increases because the diode current and the control grid bias applicd to the 6B7 increases. The cumulative effect is to reduce the plate current of this flasher tube. The plate current for the tube flows through the 130,000 ohn resistor. Since there is but one maximum voltage available across the maximum $B$ plus to cathode of the complete tube system, the greater the voltage drop across the 130,000 ohin resistor in the plate circuit of the 6 B 7 flasher, the less is the available voltage across the flasher unit, shown within a circle and commected across plate to cathode of the 6B7. Without any signal input, the plate current is maximum and the flasher is not illuminated. However, when the signal is applied, the plate current decreases for the reason slated above, and the drop across the 130,000 ohnn unit is decreased, restulting in an increased voltage being available across. the flasher and causing the neon lamp, to glow."

-

## Neon Leakage Test

The circuit diagrammed shows the unique method of checking tube shorts and leakage employed in the new Supreme 85 and 85 C testers. The indicator itself is a 110 volt, 2-watt neon glow lamp. Being a voltage operated device, it requires negligible current for opera-


Here is a tube checker and merchandiser that will help you make friends . . . help build your business. It does a thorough test job, and does it in a manner that is impressive and convincing to your customers. The design and color scheme are compelling; and the large $9^{\prime \prime}$ meter, set at an easy reading angle, gives direct indication of tube conditions in understandable terms.
And Model 681 has been designed and engineered to end obsolescence worries. Twenty-five sockets are provided in the panel with seven spares for use when and if new tubes are developed. It not only tests all present 4, 5, 6 and
large and small 7 prong tubes but also makes individual tests on each section of all double and triple plate combinations. It makes a complete inter-element short test, a high resistance cathode leakage test, and a mutual conductance test on all tubes.

Dealers, jobhers and engineers who have seen Model 681 have voiced their enthusiasm. All agree that its many outstanding features make it the greatest value available in tube checkers. You will want all the facts. Mail the coupon today . . . Weston Electrical Instrument Corporation. 581 Frelinghuysen Avenue, Newark, New Jersey.

Weston Electrical Instrument Corporation
581 Frelinghuysen Avenue, Newark, N. J.
Send hulletin on Weston Radio Instruments.
Name
Address.
City and State

## SERVICE SECTION

tion. And since it does not possess either the mechanical inertia of meter movements nor the thermal inertia of pilot light filaments it responds instantancously to intermittent leakage potentials.

In order to make the lamp responsive only to leakage potentials and to prevent

operation on rectified potentials it is connected in series with a blocking condenser. Shorts between any two or more tube elements are detected by depressing the proper switches. This uperation connects the element whose socket contact corresponds to the switch number to one side of a 115 volt secondary. It also connects all other elements to the other side of the 115 rolt source through the neon glow lamp. Thus any alternating current flow in this circuit produces a glow.

Short and leakage tests are conducted with the heater operating so that those which would not be apparent with the tube cold may be readily detected.

## Doublet-Marconi Switching

Grunow's models 7 B and 11 A allwave receivers are equipped with built-in antenna coil switching systems which accommodate either the straight marconi or doublet type antenna. The circuit shows the input system when used with a marconi. It is possible, however, to eliminate the marconi collector and use a doublet across the marked binding posts for greater noise reduction and increased high-frequency sensitivity:

When the doublet is used (antenna

diagrammed removed) on high-frequency bands r.f. impulses pass through antenna coils $A$ and $B$ and $C$. $A$ or $B$ pass them along to the first tube. Coil C, through which the antenna is grounded, is of sufficiently high innpedance to avoid unbalancing of the systen. On ranges 1 and 2, for lower frequency amateur and broadcasting bands, the doublet is converted into a marconi, being virtually shorted out througli $A$ and $B$, and the whole collector system works as a straight antenna through coil $C$ or $C$ and $D$ to ground.

## Combination Series-Shunt Divider System

General Transformer's "multi-tap", B power unit for auto-radio sets, which uses a conventional fullwave vibrating reed interrupter and 84 rectifier, has a combination series-shunt voltage divider systen.
Two hundred and fifty volts is avail-

able simply by connecting the load from filter output positive to ground. Intermediate plate voltages of approximately 135 and 180 (plus or minus 10 , depending upon load) are provided for by a series divider system using a 1,750 ohm and a 1,100 ohm, 5 watt resistor connected (in series) to the 250 volt tap. The plate voltage divider system cloes not, therefore, place a bleeder load on the pack.

Ninety volts of screen potential is provided by the inclusion of a separate shumi divider system using a 30,000 and a 50,000 ohm, 1 watt resistor (in series) across the pack output. The resistance of this screen divider system is sufficiently high to minimize the circuit's bleeder requirements.
A unique feature of the pack is its use of 3,500 volt oil-dielectric condensers, one .02 mfd . unit across each half of the transformer secondary, to bypass and reduce voltage peaks.

## Automatic Tuning Mechanism

The automatic tuning mechanism in Atwater-Kent's Model 511 receiver is worthy of study.

The tuning motor is a shaded-pole induction type. The motor shaft rotates in only one direction, and the required forward and reverse drive for the variable condenser is secured by an arrangement for tipping the motor, which is pivoted for this purpose. Tipping is ac-
complished by a solenoid and lever.
The motor drive shaft extends between two rubber-tired wheels, one large and one small. When the solenoid is not energized, the motor drive shaft rests against the small wheel and the resulting motion drives the variable condenser in the direction from 540 to 1,600 kc. When the solenoid is energized, the motor is tipped so that its drive shaft rests against the large wheel, and the variable condenser is then driven in the direction from 1,600 to 540 kc .
The current that energizes the solenoid is controlled by a switch (mounted above the top rear of the variable condenser). This switch opens at $1,600 \mathrm{kc}$. and closes at 540 kc . The switch is operated by a cam on the shaft of the variable condenser.

Eight adjustable discs are mounted on the shaft of the variable condenser. which is extended out in back of the condenser. Each disc has a small insulated sector on the rim. Each disc is held by spring tension to the shaft. Normally, the discs do not move with respect to the shaft, but by holding the front gear of the variable condenser, and using a special wrench each disc may be rotated on its shaft so that the insulated sector is in the desired position. Between adjacent discs there is a spacer which is keyed to the shaft. This prevents the movement of any disc other than the one moved with the wrench.

Eight contact fingers are mounted at one side of the discs, each contacting with the rim of its corresponding disc.
(llease turn to page 50)





## NEW TRIPLETT MASTER UNIT IINE 



This unit features the exclusive Triplett double AC-DC instrument, which can be tilted to any
desired reading angle. NO TESTER IS MODERN WITHOUT THIS FEATURE! The instrument reads up to 1.000 volts, 250 milliamperes and 3 megohms. Provides for output measurements. DC voltmeter has 2,000 OHMS PER VOLT RESISTANCE. Dealer's net price
$\$ 21.67$


TRIPLETT MASTER UNIT TUBE TESTER NO. 1210
This unit has large English-reading instrument scile. One of the four controls tests all shorts and makes tube selection. Other controls are used for line volts. filament volts and load regulation Two pusi buttons are used for Diodes and tuhe test values. Easily operated by inexperienced users. Dealer's net price on 1210 , $\$ 20.00$. Can be furnished as counter tube tester in Oak caste with sloping panel No. 1211 or, as a portable unit, No. 1201. Dealer's net


MASTER UNIT TESTER
NO. 1220
Used in connection with 1200 unit for analyzing radio sets. Tests voltages, current, resistance, continuity, capacity and point-to-point. Has plug and adapters for socket connections. Lead wires are furnished. Dealer's net price $\$ 8.34$

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EALERS and service men will welcome
Master Unit precision instruments because of their advanced design, precision construction, absolute dependability, permanent accuracy and many exclusive features. They are regarded as today's most modern precision measuring units.. regardless of price. Dealers and service men, who are equipped with Triplett Master Units can handle every servicing operation quicker and more accurately than ever before ... and make every hour spent in servicing return a bigger profit.


The above illustration shows four
Triplett Master Units in Portable
Case No. 1204. Dealer's net price, case only .................. $\$ 6.00$ The new Triplett Master Unit Line of radio servicing instruments includes four fundamental units: No, 1200 VoltOhm Milliammeter; No. 1210 Tube Tester; No. 1220 Free-Point Tester; No. 1230 All-Wave Signal Generator. (No. 1210 unit may be used in the No. 1211 Oak case, which has a sloping panel for counter tube testing.)

## The Triplett Electrical Instrument Co

89 Main St. . . . Bluffon, Ohio city

Send Coupon For Literature
The Triplett Electrical Instrument Co.
89 Main St., Bluftlon, Ohio
Gentlemen: Please send me literature on the new Triplett Master Line of Radio Servicing Instruments

Name.

Street Address


TOBE Filterettes now stop radio noise on all-wave bands. The most severe oil burner interference heard on all-wave radios cannot get by the new all-wave oil burner Filterette. Use TOBE All-Wave Filterettes to satisfy the present demand for elimination of short-wave noise from all electrical apparatus.

TODAY-MORE THAN EVER BEFORE-ELIMINATION OF RADIO NOISE IS OF VITAL IMPORTANCE. All-wave reception demands favorable local receiving conditions. Don't lose receiver sales when TOBE Filterettes are so simple to install.

Send for this valuable book giving complete information on radio noise elimination from all types of electrical appliances and equipment. Sent postpaid anywhere
 upon receipt of 50 c .

TOBE DEUTSCHMANN CORPORATION Filterette Division CANTON, MASS.

## THE <br> (1118) <br> CONDENSER ANALYZER

puts the RELAXATION OSCILLATOR* to work. This SIMPLE yet SCIENTIFIC instrument will make money for you from the first time you use it.
The TOBE CONDENSER ANALYZER tells instantly if condensers of any type or capacity, paper, mica, electrolytic, or oil are leaky- of low D. C. resistance, or high current leakage-if they are "open"" or "shorted," if
they are operating intermittently, or if they are in satisfactory condition.


## obTAIN A T10 CONDENSER ANALYZER TODAY-

From your distributor or direct from the factory. (Allow postage on six pounds.
Net Price to Dealers of Servicemen, only $\$ 11.40$ Price $\$ 11,70$ in Denver and the West Coast
Now available in 25 cycle, and 220 volt models.
*For a complete technical explanation of the operation of the TOBE Convenser ANALYZER, gee article entitled "Relaxation Osciliator."

## UNIVERSAL ALL-WAVE ANTENNA

THE TRUE ALL-WAVE NOISELESS ANTENNA SYSTEM that is PRACTICAL for dealer installation!
Your choice of two antenna systems with one aerial kit. May be con(single or multiple doublet). This system may also be connected as the INEXPENSIVE and EFFECTIVE quarter-wave Marconi aerial. (Common inverted "L.")

## SYSTEM TUNES TO LISTENING BAND

No matter which type of aerial is installed, wave band change-over switches on the receiver Filterizer transformer TUNES THE ANTENNA TO THE WAVE BAND BEING RECEIVED! DESIGNED BY SPECIAL-

All-Wave Aerial Filterizer Kit includes:
1-Aerial transformer. with wave band swiverner 50 ft . weather-proof twisted pair transmission line. TEPOWER LINE F1LTER, and all necessary aerial and ground wire, in-
sulators, ete. sulators, ete.
MOLEL
34, \$6.95.

MODEL 35
Sane as above except less ind ground equipment List Price, $\$ 4.95$.

AVAILABLE IN TWO MODELS


MODEL 34
 List Price
$\mathbf{\$ 1 . 0 0}$

## A New LINE FILTER

priced to meet the purse of 17,000,000 RADIO OWNERS!
Can be plugged in at the radio to stop power line radiation. Can also be plugged in at the appliance to stop noise as it is created. Several can be sold in each home. Ideal for apartment houses, hotels, (1ili EXACT DUPLICATE REPLACEMENT
CONDENSERS $\overbrace{\text { G.E. } 3538}^{\text {CONDENSERS }}$


CROSLEY"W27488

S.TWATER-KEN


CONDENSERS
-the STANDARD of the pioneer
-the product of EXPERIENCE. Designed for MODERN 1934 SERVICE!

- EXTREME COMPACTNESS •
- MOISTURE PROOF -
- HIGH VOLTAGE SAFETY FACTOR •
- WIDE CAPACITY and VOLTAGE RANGE
- SATISFACTORY LIFE •
- LOW PRICE -
and in addition to our regular standard condensers, through POPULAR DEMAND we are featuring


## TOB EXACT DUPLICATE <br> ELECTROLYTIC REPLACEMENT CONDENSERS

for latest models AC-DC MIDGETS, ALLWAVE SUPERS, AUTO RADIOS, and STANDARD BROADCAST RECEIVERS.
Exact to originals as to physical dimensions, mounting holes, color and length of leads, etc Peak voltage ratings are in-
 creased.

ALL TUB PRODUCTS ARE STOCKED BY LEADING JOBBERS EVERYWHERE Send for our latest complete catalogs.
TOBE DEUTSCHMANN CORPORATION-CANTON, MASS.

## SERVICE SECTION

# SHOP SHORTCUTS 

Transposition Block Spacer

By Charles W. Schafer

Transposed leads may be made up in the shop with greater ease and precision by using the simple block spacer shown in the accompanying drawing. Secure a length of lath about $2 \frac{1}{2}$ feet long and nail wooden cleats to it. Each pair of cleats should be just far enough apart to admit a block and hold it firmly but not

so tightly as to make removal difficult. The distance between blocks should be that recommended by the manufacturer.

Make the cleats long enough so that their ends touch the leads. This will help keep wires parallel. It is generally best, when using the gadget in the shop, to fasten the antenna side of the leadin assembly to a rigid support for if wires are to be tant plenty of pull is needed.

## Curing Vibrator Irregularity Auto B's

By Verne V. Gursolley
While the title to this article suggests a general treatment of the subject, a specific case will be given that may in general solve the problem for a great many similar types of trouble with auto B-eliminators.

The diagram shows the partial wiring diagram of a well known make of

receiver. Renoval was necessitated by the fact that the fuse blew and the receiver tested "dead short"; drawing a current of over fifty amperes from the storage battery.

After the ordeal of removing the receiver a four hour check up of the circuits revealed nothing wrong nor any sign that anything had ever been wrong. Fear of doing the work all over
again for nothing, caused much misgiving about replacing the chassis, consequently almost a day was spent playing with the vibrator and here is what was discovered. When contacts $D$ and $F$ were pressed together the short was reproduced and they would not open when released. If the receiver happened to be turned off at the right instant of the vibrator's motion it would stick on these contacts with the result that the receiver had to be taken out of the car for servicing. No amount of hammering on the case would loosen them.

Obviously the trouble was that with the contacts FD closed, the extremely low D-C resistance of the lower half of primary coil L1 in effect short circuited coil L2 which is in parallel with it, although while vibrating, these contacts and the coil L1 would present an enormously higher a.c. impedance in parallel with L2 and would not affect its operation as a vibrator. With the coil L2 thus paralyzed by the short circuit, there was no excitation with which to pull the contacts FD apart. To remedy this situation, therefore, one layer of about 25 turns of No. 18 enamelled wire was wound directly over the outside of L2, and this coil, shown in dotted lines, was connected in series with the contact $F$ and the lower terminal of coil L1 as shown. The connection was poled by means of a field compass so that the auxiliary coil aided the vibrator coil L2.
Now should the contact FD decide to stick, the short circuit current builds up a magnetic field in the core of L2 by means of the new coil equal to about 1,000 ampere-turns, whereas in operation, the field intensity due to the coil is around 25 ampere-turns only.

The change in no way affected the operation of the set sensibly as the drop in plate voltage was only about $4 \%$. The coil is so effective that a person of ordinary strength finds it difficult to hold the contacts together. For the sake of the uninitiated we will say that this new coil together with contact FD forms an auxiliary vibrator in parallel with the regular one L2 and G. Furthermore, for sake of simplicity, L2 and its core are shown below the armature rather than above as would be necessary for actual operation.

## Electric Chassis Cleaner <br> By L. A. Moore

Every servicemen occasionally receives chassis covered with so much dust that they must be thoroughly cleaned before repair. Usually this is done with a rag or brush but this is unsanitary and slow.

We have mounted an old vacuumcleaner, purchased for $\$ 2$, under the bench.

The regular nozzle was removed and a coupling made from tin to slip over a length of copper tubing, a soldered joint being made between tubing and coupling. We brought the tubing up through a hole in the bench to the top-side, leaving about an inch above the bench, and pushed a piece of ruber hose about 3 ft . long over the end of the tubing.

At the end of the hose we fitted a 3 in . length of tubing, flattening the end slightly to increase the suction but avoiding excessive flattening, which would prevent the passage of bugs, flies, etc. To the flattened end we tied and glued a bunch of bristles taken from an old brush.
The cleaner and bag were suspended on springs to reduce vibration and a switch mounted on the bench for control.

## Bench Wire-Stripper

## By S. S. Balsam

An excellent wire-stripper may be made of parts available at any electrical store handling wiring accessories. Fasten a stud box on the bench. Screw a $\frac{3}{8}$ by $\frac{8}{8}$ in. open fixture connecting "hickey" on the box. Secure a brass canopy stem, $\frac{8}{8}$ size, and cut it through on a 45 degree diagonal 3 or 4 inches from the threaded end.

Now, saw a sharp "V" slot in the cut end

of the canopy stem, at the high or pointed end. The slot should be about $\frac{1}{4}$ inch across at the apex of the " $V$ " and about $\frac{3}{4}$ in. in depth.

Place wire to be stripped in the " V " and pull slightly downward.

## Proper Care of Meters

## By E.F. Staunton

Do you always get the same reading on your meters when the same voltage or current is applied? Uniform results from d'Arsonval types depends largely upon the treatment the delicate movements receive in handling and service.

Mechanical injuries are the most common causes of erratic meter performance. Throwing a test meter case on the floor of a car and knocking it about for half an hour will do more harm to the meters than a $50 \%$ overload in normal service. D'Arsonval meters have pol-
(Please turn to page 63)


## STIMULATE TUBE SALES

## this easy way

- Get the added business that should be yours... add the merchandising and sales power of a Hickok Tube Tester to your sales force ... their proven efficiency in the hands of other retailers and service men is your guarantee of profitable investment. Two models.


## COUNTER MERCHANDISER

- Model 38, for counter use, is especially manufactured to meet an insistent demand for an inexpensive flexible unit. Tests any known commercial tube including Rectifier, Class B and Amplifier tubes. Unexcelled for mercury vapor tubes. Tube values are shown clearly on a centrally located, easily read two-color (red and green) dial. Easily replaced potentiometer charts, designation strips, etc., supplied free to all purchasers as required, defeats obsolescence. Full details and specifications on request.


## PORTABLE MERCHANDISER

- Portable Model E38-P should accompany every service man on every call. It is not dissimilar in construction to Model E38 described above, except that the entire unit is assembled in a sturdy and rugged leather covered case. Permits the service man to demonstrate effectively - new tube requirements - and make more sales and greater profits from each call.

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 the ever-increasing service requirements of the automobile radio industry with greater ease, greater certainty-and greater profit!
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Now you can display these small but important parts and increase your business and profits.
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Don't let your old tube checker scare away profits

-IT WILL LOOK BETTER AND DO A BIGGER JOB WHEN IT'S MODERNIZED

Your "Goode Olde" tube checker will be worth more to you when it's modernized than a small new one-because you will then be able to check all tubes with a modern, attractive, sales stimulating instrument. You can modernize it at low cost- 48 HOUR SERVICE.

```
MAIL COUPON TODAY FOR DETAILS.
```


## Precision Apparatus Corp., <br> 881 E. N. Y. Ave., Dept. R., Brooklyn, N. Y. <br> Send full information for modernizing my Tube Checker:-as checked ( $\sqrt{ }$ ) <br> Weston $\$ 676$. Weston 8677 , Weston 8678 , Jewell $\$ 214$, Jewell $\$ 533$ ], Jewell $\$ 535$ (panel) Jewell 5534 (panel) Arcturus \$27 (panel) Ceco $\$ 535$ (panel) [, Dayrad \$381ח. Sylvania \$538a, Sylvania \$678].

```
Name
```

Address

## SERVICE SECTION

ished sapphire jewel bearings in which are pivoted tapered steel points attached to the armature. Often the pressure on the pivot points is as high as 400 pounds per square inch. The jewel bearings are held in position with fine threaded screws and lock-nuts. Vibration eventually loosens these screws allowing a certain amount of play between the steel pivot points and the extremely hard jewels. When the pivots are loose, further vibration usually causes the steel points to curl up like the end of a phonograph needle which has been played excessively. When this occurs the action of the meter becomes erratic. Often this condition can be detected by lightly tapping the meter. Dull pivots will cause the reading to change when the instrument is tapped.

Neglect of a cracked glass, which permits dust to enter and settle in the cavities of the jewel bearings, will eventually grind the pivot points and impede the action of the meter. This is particularly true in the lower-priced in. struments which have jewels that are not as highly polished as those employed in the more expensive instruments. A cracked glass also permits moisture to enter the meter case. This frequently rusts the pivot points and is the cause of "sticky meter action."

A common practice of radio servicemen which is the cause of considerable meter trouble is tampering with a meter movement with the aid of a screw driver carrying fine particles of iron dust. The magnet of the meter draws these fine particles into the most intense part of the magnetic path. These particles not only weaken the magnetic flux of the meter which then requires more current for a given deflection, but frequently impede the movement of the armature and cause a short circuit between the armature coil and the poles of the magnet.

Servicemen should know that jewel bearings require no lubrication. Never under any circumstances should oil be applied to a meter movement. Its only effect will be to attract dust particles and thoroughly gum up the movement.

Overloads are a common cause of meter trouble. The result of an overload is evident to the eye when the pointer is bent or the armature of the meter is burned. A partial overload, even a split-second application of excessive current, will often cause an expansion of the armature which will warp the pivot points out of their exact alignment. This will cause erratic readings until the meter is repaired. A serious effect of excessive current is the overheating of the springs of the meter movement. This can usually be detected by the fact that the meter reads full scale with less than the normal current required.

D'Arsonval meters are often burned out without the pointer moving from its zero position. This is caused by alternating current which exceeds the maximum direct current carrying capacity of the meter. All d.c. meters employed in circuits carrying a.c. should be protected with a by-pass condenser of the paper
or mica dielectric type shunted across the meter movement. 0.1 mfd . is usually ample protection for a standard 1 milliampere meter.

## Portable Broadcast Oscillator

## By V. E. Willey

I have used the portable oscillator diagranmed for two years and recommend it highly to the boys in rural districts who want a completely portable broadcast oscillator.
$L_{1}$ has 92 turns of number 28 wire on

a $1 \frac{3}{4}$ in. form, tapped at the 46 th turn. $L_{2}$ is two turns on the plate end of $L_{1}$. The device produces an ummodulated signal with Sw. 1 open, a 1,000 cycle modulated signal with the switch closed.

## Pepping Up Old T.R.F. Jobs

## By R. O. Lamb

I have been successful in selling many "renovation" jobs, installing a.v.c. and q.t.c. A regular part of such a job, where the set is an old t.r.f. model, is the peppng up of r.f. stages. This is

done by substituting a 50 microhenry pie-wound r.f. choke for the old low-impedance primary.

I have pepped up 11 models in this manner. Only one offered difficulties and these were cured by going to capacity coupling.

## Brake-Noise

By Marion L. Rhodes
When a "whirring" noise occurs in car installations with the ignition cut off and the automobile coasting check front-wheel bearings. If dry repack with plenty of grease. This often cures trouble.

## TRICKS of the TRADE

AC-DC SETS. Of 175 "universal" re ceivers serviced by a Baltimore correspondent 93 needed new filter condensers, 62 high-capacity, low voltage condensers used between cathode and ground, 12 resistors, 1 field-coil andi seven small fixed condensers.

AIRLINE 05BA. Oscillation after several months of use ... Substitute . 01 condenser for .002 detector plate capacitor. If still troublesome connect another .01 from choke coil to chassis.

BOSCH 350. Low filament voltage, hum, pilot light flicker . . . One side of a.c. filament is grounded to lug on rivet holding 2A6 tube socket and base of tube shield to chassis. Imperfect connection at this point causes trouble.

EDISON R4, R5, C4. Steady crackle regardless of volume control setting Detector choke is usual offender. Fine wires ground partially to case. Choke may be left out temporarily, replaced later with 50 to 65 millihenries. Regeneration at low kilocycle end of dial...Open . 001 condenser from detector plate to ground. Located under detector hum adjuster and choke subpancl. Regeneration at high kilocycle end although properly neutralized. Check by-pass condensers on top chassis, especially .1 mfd . unit from 2nd and 3 rd r.f. cathodes to 2 nd and 3 rd r.f. plate circuits. Apparent impossibility of neutralizing first r.f. stage ... Check .1 mifd. condenser from 1 st r.f. cathode to 1 st r.f. plate circuit and if ok check other capacitors in same container. Distortion at low volume on weak stations

Usually thin edge of Jensen speaker cone rubs on pole or field housing, or filings in field housing at voice coil clearance points. Remove speaker head assembly and sandpaper all fuzzy material and wipe out voice coil space. Distortion on powerful stations at low volume . Defective 10,000 ohm section of volume control. Ordinary ohmmeter will not usually show it up. Shrill sound started by snapping roon lights on or off . . . One of power tubes is not drawing enough plate current, either because it is a weak tube or because low voltage is applied to it. Tubes should draw not less than 25 mils. Rapid deterioration of 27 tubes, tone not just right Trouble usually starts with open 10,000 ohm ( 8,000 in 25 cycle) loss resistor which is located in power pack. Plate voltage rises to around 150 volts instead of the normal 115 and by-pass condensers of top chassis frequently break down. This resistor should be checked annually, especially in damp locations. Burning out of detector hum adjuster

Usually caused by a short between primary of power transformer and 2.5 volt filament winding. If another transformer cannot be purchased easily the set can be kept in operation by discon(Please turn to page 67)

## If you're interested in Parts Replacement Business

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 $=$You'll find the components you need for all modern radio receivers listed in Clarostat's New Fall Replacement Guide and Catalog. It will help you quickly to pick the right values for:

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Please send complete details on rebuilding the following equipment :

when the frantic parents of a once-healthy radio call on you to revive their loved one... see that your stock of life-giving CENTRALAB replacement parts is in order.

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Central Radio Laboratories MILWAUKEE, WIS.
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## Centralab

## (3.) YES! SIR! YOU CAN USE THESE batteries 7 OR 8 HOURS A DAY!

## THEY CAN STAND THE GAFF!

Owners of battery-operated sets can now listen to programs all day long and still get maximum service from their batteries! BURGESS Batteries-A, B and C-can stand the gaff! Repeated tests in our laboratories and in actual use have proved that they can be used for long periods at no increase in the "cost per hour." When an owner of a battery-operated set tells you he uses his set only three or four hours a day to "save" his batteries, you tell him to "change to BURGESS!" You don't have to "baby" BURGESS Batteries.*

## BURGESS POWER HOUSE

The POWER HOUSE is a 3 -volt DRY A battery designed specifically for use with modern 2 -volt tube sets. Priced at $\$ 3.20$, it will give 400 Hours of dependable service at a cost of only $8 / 10 \phi$ per hour! The POWER HOUSE, distinctly a BURGESS development, consists of 40 size $F$ cells arranged in two banks of 20 each, thus producing a long service life at a voltage within the proper range for radio service. It can be operated 7 or 8 hours a day because, like

## BURGESS "B" and "C" Batteries

it has been built to stand the gaff! Recommend BURGESS Batteries to owners of battery-operated sets. As they enjoy more programs per dayand get the same number of hours of service from their black and white striped batteries -they will thank you.

*Economical operation of 7 to 8 hours a day depends, of course, on the set being powered by of course, on the set being pow

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watts. Input voltages of 6 , 12,32 , 115 or 230 volts
Write for Bulletin 13 -25. manufacturers. In 15 sizes. Capacities from 20 to 2500


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Janette Gas Engine Driven A.C. and D.C. Generating Sets-the ideal unit for operation of radios, amplifiers, sound truck equipment, putc. 300 to 500 watts.




## SERVICE SECTION

necting the hum adjuster entirely, replacing the detector with a tube of later design. Installing new tone control Remove on-off switch and install control of approximately 15,000 ohms, switch type. Connect one side of control to ground and other side through .1 (or . 05 if less depth required) to 1 st audio plate. In this position it will not reduce volume as much as if the conventional grid circuit connection is used.

GE 40B (RCA). Loud roar after set warms up . . . Check for arcing at vibrator points. If found, connect 500,000 ohm resistor across transformer secondary, the terminals of which are brought out to two insulated screws. Connect two .01 mfd . condensers across secondary, in series, grounding midpoint between them. Use 600 volt capacitors.

MAJESTIC 66. Vibrator adjustment Connect d.c. ammeter ( $0-5$ or $0-10$. low resistance) in series between pigtail terminal on vibrator and battery wire which was connected to this terminal. Connect $0-300$ d.c. voltmeter, 1,000 ohms per volt type, between ground and the B side (red lead) of audio output transformer. Connect 0-100 d.c. milliameter between ground and grounded end of $B$ filter choke (which is first removed from ground). Now, with a good A battery at 7.3 volts there should be 5.7 volts at the vibrator terminals. With normal tubes which have been heated for at least one minute the following values should be read when the vibrator is properly adjusted: Input: 5.7 volts at from 3.8 to 4.1 amperes. Output: 200 volts at 53 milliamperes. If voltage measured at vibrator is higher or lower than 5.7 then the other readings will be correspondingly more or less. Readjustment of the vibrator will be necessary if, for the above input values, the output current and voltage are down or if the input current is over 4.1 amperes.

Vibrators which have seen any appreciable amount of service will not retain readjustment unless the points are dressed or replaced with new ones. Experience has shown that it is much cheaper for the average service man to replace the vibrator head with a new head which has been adjusted and run-in at the factory. In dressing the points remove the armature from the vibrator assembly. In removing the armature, loosen only one pivot screw in order that the other may remain in position and properly locate the armature when it is put back in the frame. Before removing the armature take note of the side play on the pivots as this same amount of side play must be obtained when the unit is reassembled. In reassembling, be sure that the pivots do not bind the armature and that the side play does not exceed .003 in . to .005 in .

A file is practically useless for dressing the contact points, especially for the tungsten on the brass studs. A fine carborundum stone should be used for acquiring a final finish. When work on the contacts is finished they should be washed in alcohol (never use Ethyl gas) as any carborundum dust left on the
contacts will cause rapid failure after adjustment.
In disassembling the vibrator unit never disturb the spring tension adjusting screw, as this screw has been set at the factory at that point which will place the spring under a tension of 30 grams. It is very hard to guess what this tension is and if spring gauges for measuring this tension are not available it is apparent that the tension adjustment ought not to be disturbed.

The contact which is opposite from the tension spring is called the primary contact, that on the same side as the tension screw, the secondary contact. In adjusting the vibrator, set the primary contact all the way out so that it does not make contact to the armature. Connect the battery and after the tubes and rectifier are heated, turn the primary down until the armature begins to clatter against the core, then back it off about a half turn so that the clatter stops. Tighten the lock nut on the primary contact and then turn down the secondary until the ammeter reading begins to make an abrupt rise and at this point adjust to 3.8 to 4.1 amperes. Note that a point will be reached in this adjustment at which the output current and voltage do not increase, even though the input current rises as the contact is turned. The point at which input current is a minimum for a standard output voltage, is the point of correct adjustment. Do not attempt to turn any adjusting screw without first loosening the lock nuts and do not fry any one adjustment as final without tightening the locknut as tightening the nut is apt to change things. When the vibrator is properly adjusted, clearance of the normally opened contact is .010 in . to .015 in . In attempting to measure this clearance with a feeler gauge one must rely on sight and not feel because if the gauge is thicker than the clearance of the contact, it will force its way in because of the flexibility of the spring on which the lower contact is mounted. If the gap is too small, turn the spring tension screw down a half turn. The armature may now clatter against the core and if it does, turn the primary contact back about one-quarter turn. Recheck adjustment of the secondary contact as described before.
If, on inspection of the vibrator unit, it is seen that the armature spring is badly discolored, it is an indication that the vibrator has been operated under improper conditions, as follows:

A: Tampered adjustment.
B: Incorrect battery polarity.
C: Operated at no load condition.
D: Operated at overload.
E: Operated at too high a primary voltage.

PEERLESS COURIER. Incomplete volume control... Replace 800 cathode bias volume control with 5,000 or 10,000 type.

PHILCO 70, 90. Slipping dial drive shaft . . . Pull shaft down tight. Solder thin washer to bracket.

PHILCO. When shot friction drive allows dial to slide off new allwave models . . . Make a small dog-ear on each end of track engaged by driver and it won't run off the track again.

RCA R7 (WESTINGHOUSE WR10, GE S22). Slipping dial ... Groove wears in rubber friction roller but not exactly in middle. Remove dial, loosen screws holding shaft to chassis, remove roller from shaft and reverse. Replace dial while holding shaft and roller firmly down against dial and tightening shaft holding screws. (I.F. 175 kc .)

RCA R28, R28P (GE K50, K50P). Noise, sounding like loose connection Probably one of flexible leads of the 57 plate choke rubbing against green 500 ohm 2A5 cathode resistor between r.f. choke and rear of chassis. Gurgle and squawk after tubes heat . . . Probably open filter block. (I.F. 175 kc .)

RCA 60. Low volume or no signals and low plate voltage . . . Measure resistance of black carbon 20,000 ohm bleeder resistor in pack. Usually has decreased in value. Replace with 3 or 5 watt unit.

RCA DUO 380HR. To test neon level indicating lamps . . . Connect suspected lamp, in series with 200,000 ohm fixed resistor, across source of a.c. voltage. This may be the regular 110 volt supply line shunted by a suitable voltage dropping potentiometer. Connect high resistance a.c. voltmeter across output of potentiometer and vary this adjustment. The lamp should not light before 52 volts is applied and must not require more than 64 . If otherwise they are defective.

RADIOLA 44, 46, 47. Squeals and howls ... Check contact made by little wiping clips fastened to bottom of stage shields and see if they have sprung or are dirty.

SPARTON 931. Distortion, inability to handle power . . . Look for shorted cathode by-pass condenser in block mounted in base of external audio unit. Quick repair can be made without removing block by cutting shorted condenser lead and connecting a midget $1 / 10 \mathrm{mfd}$., 200 volt condenser across the cathode resistor, tucking it in the bottom of the base. If slight attenuation of low frequencies is caused and customer objects mount a 2 mfd ., 200 volt noninductive replacement externally.
U. S. AIRCELL SETS. Models built for Gloritone, Apex, U. S. Radio and Montgomery-Ward develop trouble in speaker coils due to penetration of moisture to fine wire of windings
Magnetic speakers have two-coil driving unit designed to operate direction in plate circuit of 33 . When replacement coil is received coat it with white shellac and dry.

## RADIO DISTRIBUTORS and RETAILERS:



NATE HAST Vice-President in charge of Sales


HERMAN ROSE Vice-President in charce-President in
 duce prospects, prestige and profits for YOU. And the all-important factor... POPULAR PRICES . . . with a long margin of profit. All these combine to make the MAY franchise the most in-


$\mathcal{T}$HIS is "YOUR COMPANY," a company with a heart, because its policies are based on what I believe to be the solutions to your problems and the remedies for the many abuses you have encountered. I have been "in your shoes." As the world's largest radio distributor, I have learned of what YOU require to succeed in this business. Now, I am ready to prove that a successful manufacturing business can be built, while giving a "real break" to the distributor and retailer.

The new MAY RADIO will be shown publicly for the first time at Madison Square Garden and I predict that it will be the talk of the show. It represents the greatest value on the market today . . . it's a new kind of radio. Beautiful cabinets, the creations of a worldfamous furniture stylist, make for instant eye appeal. From the standpoint of mechanical perfection and performance, the MAY RADIO, manufactured under direct RCA, Hazeltine and Latour patents, will bow to none. Exclusive, sensational features, plus high quality, will ease the way to volume sales. Dynamic advertising and well-planned sales promotion in the usual MAY MANNER will proteresting and profitable proposition yet to be offered to the trade.

Let me send you complete details of the sensational MAY DISTRIBUTOR PLAN . . . it's absolutely different. Remember this is "YOUR COMPANY". . . so get in line with the MAY LINE and let's put it over to our mutual profit. TION and AIR CONDITIONING LINE, with its new, million dollar, exclusive features.


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MODEL 402- 5 tube, 8 -tubeperformance. AC-DC. Range 540 to 1750 Kilocycles. Generous volume


MODEL 460A-7 tube, 9 . tube-performance. All wave superheterodyne consolet radio. 540 to 21,000 Kilocycles . . . . . $\$ 69.50$


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MODEL 440T-6 tube, 9-tube-performance consolet radio. 540 to 1600 Kilo. and short wave from 5600 to $\mathbf{1 5 , 5 0 0}$ Kilo. . $\$ 54.50$


MODEL 460R-7 tube, 9 -tube-performance. All wave superheterodyne console radio. 540 to 21,000 Kilocycles . . . . . $\$ 94.50$


MODEL 460B-7 tube, 9 -tube-performance. All wave superheterodyne consolet radio. 540 to 21,000 Kilocycles . . . . . $\$ 67.50$


MODEL 440C-6 tube, 9 tube-performance. 540 to 1600 Kilocycles and short wave from 5600 to 15,500 Kilocycles . . . $\$ 69.50$

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RIGHT-ANGLE TUNING, a basic new idea in design! The Multi-WaveSelector, which simplifies round-the-world tuning. Anchored Construction, which insures uninterrupted quality of performance. A new superior type of continuous tone control. This unparalleled parade of advances in radio engineering and styling establishes American-Bosch leadership in quality radio.

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Auto radio combines with the many other present-day car accessories to produce a powerful drain on batteries.

In most cases your customers blame battery trouble entirely on their auto radio . . . the last item they purchased. Complaints naturally result. If you explain to them, however, that auto radio is not the entire cause of run-down batteries, but only one of many contributing factors, you can easily convince them of the need for a G-E Tungar Home Charger. Lists complete with wiring accessories at only $\$ 12.95$. (Prices slightly higher, West of Rockies.)

The new G-E Tungar, 5-amp., Home Battery Charger not only assures perfect radio reception and proper functioning of every car accessory, but also comes in mighty handy in the winter months when zero weather takes its toll of undercharged batteries.

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For complete information, see your nearest G-E
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Please send me complete information on the new 5-amp. Mercury Tungar.

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## Convincing!

THERE are distinct advantages in handling Ken-Rad Radio Tubes. Sales policies, advertising, merchandising, testimonials, profits are some of these. Send for the complete Ken-Rad dealer proposition.

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[^2]
# "Easier To Sell It Than To Sell Against It!" 

## SAY HUNDREDS OF RADIO DEALERS—FLOCKING TO THIS SENSATIONAL NEW STEWART-WARNER "MAGIC DIAL" RADIO



## How "Ready-Made Sales" <br> Are Delivered To YOU-

A selling drive that will rock the industry is back of this new Stewart-Warner line. No effort or expense has been spared to send you "ready-made sales." Do your part and you'll reap a rich harvest.
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Smashing "bleed" center-spreads in full color present the new Stewart-Warner "Magic Dial" line to your best local prospects in leading national magazines all through the big season.
2. POWERFUL STORE AND WINDOW DISPLAYS

All kinds of powerful displays available for your use, from paper streamers up to a startling exhibition piece that is not only illuminated but actually talks!
3. LOCAL NEWSPAPER ADS - OVER YOUR NAME

A full line of newspaper mats in all sizes and types, and a wide variety of separate cuts, are yours for the asking-for cooperative use in your local papers.
4. A "SELIING BOOK" IN FULL COLORS

This is a sales-aid the like of which you never saw before! Even the "greenest" sales clerk can do a complete selling job with it. Packed with useful information and beautiful color plates.

## 5. "CUSTOM-MADE" HANDBILL SERVICE

A complete advertising service. Provides you with layouts, cuts, copy, etc.- not only for StewartWarner Radio, but for all kinds of other merchandise. Remarkably flexible.
6. SPECIAL TABLOID NEWSPAPER - MADE FOR YOU This is a tested sales maker-positively known to bring big results if used in simple, easy way recommended. A real little newspaper, made for your local distribution.

## 7. TESTED MERCHANDISING SCHEMES-

GUARANTEED TO INCREASE YOUR SALES
There is not space here to describe the many local sales promotion ideas ready for your use-all proved sales producers, based on successful retail experience. Your distributor will supply them on request.

## The New

THE merchandise alone would make Warner Radioline. The simplified"Magic Dial" makes other all-wave sets now seem crude and primitive! But back of this merchandise is powerful national advertising and local sales promotion advertising and local sales promotion material that will make it tough for competition this year! No wonder dealers by the hundreds who have seen this with it, say, "I'd rather sell StewartWarner than try to sell against it!" Which side of the fence will YOU be on when this season's profits are counted?

## Guaranteed Foreign Reception

 First take technical quality years ahead of normal radio progress-with the "Magic Dial" that makes foreign stations as easy and accurate to tone as local. Then picture this extraordinary quality housed in a line of magnificent cabinets, created by famous designers. Even at high prices this line would be a sales sensation. But Stewart-Warner Radio covers the entire popular pricerange with only one DeLuxe model priced over $\$ 100$ ! And they start at $\$ 24.50$ !

## Minimum Stock Investment!

 Scientifically planned and designed, the new Stewart-Warner line gives you complete coverage of the popular price range - and round-the-world sets in every group-with the lowest stock investment you ever heard of, for such coverage. Thus you can addfasterturnover to the extra profits you make with this amazing line.
## A Brand-New Profit Opportunity

 The demand for round-the-world radio is sweeping the country. This will make some radio dealers more profits this year than ever before. But will all of those profits stick? You know it's the dealer who takes the beating when costly kick-backs come. Tie to the PIONEERS in all-wave. Stewart-Warner has had three extra years to bring all-wave radio to simplified perfection, while others were still experimenting. Ask your distributor to give you full details at once, and judge for yourself.STEWART-WARNER CORPORATION, 1853 Diversey Parkway, Chicago, Illinois

## A FEW OF THE HOTTEST NUMBERS - EVERY PRICE RANGE COVERED


"Magic DIal" Table Mode - 4 tuning bands- one at a time Automatic volume Variable tone control. 8 speaker. 2 table models at $\$ 69.50$.

"Magic Dial" Con. sole - Easiest-totune all-ware radio made. Extra heavy 12" speakwith feet, $\$ 94.50$. With feet, $\$ 94.50$. With legs and doors, $\$ 109.50$.
 Round-The-World
Dual Wave Table Model-Automatic volume control. gang condenser. Tone control. Extra



Standard Wave Table ModelL1 $9 / 16^{\prime \prime}$ high unit, special speaker, good tone-quality equal to much Luxe cabinets, $\$ 27.50$. This cab lnet, $\$ 24.50$.

## Tifalsm In Tune with the World

Here is a sensational line of popularly priced radio receivers for 1934-35 that you will find easier and more profitable to sell! It comprises advanced All Wave Sets14 models in table and console type cabinets-a really practical line for every market. A few models of this high quality line are illustrated below-let us send you further facts on the complete Halson line together with details of our exceptional sales plan. A few desirable territories are available for exclusive representation.


Model 610-Take a trip around the world with this ultra short
wave 6 tube A.C. superheterodyne receiver. Embodied in its construction you will find automatic volume control, illuminated full vision airplane dial, high ratio tuning control, dustproof electrodynamic speaker, base compensatmounting to ensure undistorted reception. This model is offered in a choice of the cabinets marked
$\mathrm{A}, \mathrm{B}, \mathrm{C}$ or D. $530-1650 \mathrm{K.C.}$, A, $\mathrm{B}, \mathrm{C}$ or D
$5 \mathrm{E} 00-17500 \mathrm{~K} . \mathrm{C}$. also obtainable with additional long wave band, 180-400
A

Model 650-Plug in this 6 tube A.C.-D.C. superheterodyne receiver anywhere and have the world at your finger tips. Clarity of tone. selectivity in tuning, non-distortion, a few of the excellent features of a few model. Ultra short wave means that a turn of the dial will bring international programs in as clear as a bell. This set has a
tuning range of 530 to $1650 \mathrm{~K} . \mathrm{C}$. tuning range of 5500 to $17500 \mathrm{~K} . \mathrm{C}$. Also oband tainable with additional long wave band, $180-400 \mathrm{~K} . \mathrm{C}$. The model can be obtained in a choice o cabinets marked A, B, C or D.


Model 630 - Fly around the world on all waves with this 6 wave receiver. A tuning range of 13 to $400 \mathrm{~K} . \mathrm{C} .0530$ to 1650 K . C. and 5500 to 17500 K.C. enables one to receive almost every con
ceivable broadcast on the air. It ceivable broadcast on the air. It employs the latest engineering deairplane dial, R.F. overload con trol, full floating dynamic speaker tone control and other features. It is offered in Cabinets $A, B, C$

c

Cabinet A, B, C or D-These Cabinet A, B, C or or cabinets are designed for homes where space is a thing of value. Thes are constructed in such a manner that it is possible to house any one of the following models:
Model 610 . Model 620 , and Model 630. The combination of one of these radio receivers with a choice of any one of the four tastefully deaigned cabinets will provide the perfect answer to the problem of obtaining the most entertainment from a small set.

 120 East 16th St., New York, U.S.A. Cable Address: Halsonadio


Write for Money-Making Proposition!
Don't delay. You're just coming into big DX season. Every set owner can be sold the H-F ant
as well. Let's tell you how!
TECHNICAL APPLIANCE CORPORATION
27-26 Jackson Ave.
Long Island City, N. Y.




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When the world wanted to hear America it turned to PILOT and America is now turning to PILOT to hear the world.

Dealers who turn to the PILOT line have the assurance of satisfying their customers with sets the performance of which has become a standard of excellence in all-wave world-wide reception. PILOT'S international reputation lifts the PILOT dealer above his competitors. Perhaps there is an opportunity in your territory for another PILOT dealer-Ask your jobber or write today.

PILOT RADIO CORP., 37-06 36th St., Long Island City, N. Y.


PILOT "63"
Ultra modern 6-tube All-Wave Superhetero18.800 6-550 Meters . 800 to 545 KC ) with RF pre-amplification increasing sensitivity and selectivity. Twospeed compass dial, $0: 1$ ratio for fast crometer Short Wave tuning withilluminated riple scale showing meters and KC 's simulraneously on All-Wave bands. AVC Diode detection, Class "A" power pentode output stage. Phonograph jack. Tone control for reducing tre-bull-range electro-dynamic speaker.

## PILOT "C63" CONSOLE

A magnificent semi"moderne" console in richly lustrous, grained. genuine tropical woods splendid six-tube sumersplendid six-tube Superheterodyne chassis as
Pilot No. 63. Harmonizing with either period or modern furniture this new Pilot Console is a "sight-seller." Advantage has been taken of the generous baffle area afforded by this glorious cabinet to use a full range $n$ elaic speaker, For namic speaker, For description of No. 63
namic speaker.
description of No. 63


## ELIMINATES "A" AND "B" BATTERY EXPENSE



## OPPORTUNITY!

Write or wire for full details of this revolutionary new radioit's the profit opportunity of a lifetime! Full details will be promptly sent to you.

## L. TATRO PRODUCTS CORPORATION

 Decorah-lowaManufacturers of L. Tatro 32-Volt Farm Light Plant Radio.

## And How . . .

the ANTENNA
has come back strong • . -
and that means


[^3]



## The Fit Still Survive

Did you ever compare the classified section of the 'phone book with the directory of the year before? It's an interesting if somewhat disheartening pastime. You find every year that some merchants have fallen by the wayside. The causes are usually bad management and poor merchandise.
Fortunately each trade has antidotes for business disaster and failure. Not the least of these antidotes are the business magazines of each trade. The editorial pages tell a merchant how to manage his business profitablythe advertising pages help a man buy good merchandiae.

Try Radio Retailing as a prescription. Use its pages as a cure for failure, as a stimulant to business survival.

Radio Retailing

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## TO THE

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Advertising in connection with legitimate offers of surplus stocks and discontinued models of radio merchandise is acceptable in this section of "Radio
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Extreme care will be exercised by the publishers to prevent the use of advertising in the Searchlight Section to encourage price cutting on current models of merchandise or equipment. Nor will advertising, which invites violution of the dealer's contract with the manufacturer be acceptable. All merchandise offered in the Searchlight Section must be accurately and fully described and must be available on order.

## YOU

## IN or OUT?

Many good service men are actually out stale-inert to the modern methed of selling radio service at professional prices. Gless-work-mechanics have treated set owners so badly that you also are mismen everywhere, Chuckkerize the radio tomer to inspire confidence. They isolate radio faults quickly with a Chuckker compiled, cross-indexed trouble-chart. Then they explain, to the set-owner, the publishes repair-pricer feature which They must use a chuckker because job. professional, looks official, and gets them hat job at a price based upon a $\$ 1.50$ hourly labor rate, plus list-priced parts Eliminate guesswork in What is Wrong and What to Charge! A business! We'll rush you a Chuckier postpaid for a
$\$ 1$ bill.


FREED'S RADIO CO.
Publishing Division E
0053 Baltimore Ave., Philadelphia, Pa.

ACTUAL TROUBLES
IN COMMERCIAL RADIO RECEIVERS By Bertram M. Freed
If you are a serviceman this book can be as valuable to you as your set analyzer. It points out those faults that the snalyzer cannot detect. Over 500 model sets treated, includes 46 diagrams. A compilation from thousands of actual records on which
 the author with the cooperation of several serv ice organizations throughout the country, spent many months of work.
MONEY REFUNDED NOT SATISFIED (10 DAYS). Order from your local supply cannot iferve you, send your order direct to SERVICEMEN'S PUB. CO. 136D LBERTY ST., NEW YORE CITY

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The RADOLEK Co.
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[^4]

World Wide Range :: Arresting Beauty Fidelity of Tone

## An absolutely superior value <br> 

$R C A$ and Hazeltine licensed $:: R M A$ warranty
The guaranteed product of a well known responsible manufacturet.

## Note Balkeit's new exclusive feature: The Time Dial

Just one model, just one cabinet, hence our lower manufacturing cost and lower selling cost; and hence the tremendous value at $\$ 34.95$.
Just one model, just one cabinet; hence the dealer's inventory problem is solved.

Jobbers and retailers will be interested in our new merchandising plan. It spells quick profits for dealers. Write for explanatory circular.

## Balkeit Radio Corporation

Domestic and Export Divisions
Clinton and Randolph Streets Chicago, Illinois


Crosley Shelvador and Tri-Shelvador models represent the greatest value in the history of electric refrigeration. Incorporating the famous Crosley Shelvador and other features, they are the outstanding successes of the 1934 season. Illustrated below arc household electric refrigerators for every purse and purpose.

TTHE enthusiastic reception accorded the new Crosley Chest Shelvador proves that Crosley has again struck the keynote of what people want. Housewives-homeowners-everywhere see instantIy that here is value beyond anything ever offered in electric refrigeration; they see the convenience, where space is limited, of a complete Shelvador electric refrigerator that is only $36^{\prime \prime}$ high, $235 / 8^{\prime \prime \prime}$ wide, $2058^{\prime \prime}$

- This refrigerator is amply large for the preservation of the actual amount of food necessary in the average home, and is one for which many have been waiting and practically everyone can afford. Here-as in the most expensive Crosley model-is found the amazing Shelvador feature which provides space for small articles that in ordinary refrigerators are diflicult to find and take up much room.
deep; they appreciate the porcelain table top. To those who hitherto could not afford electric refrigeration, the Crosley Chest Shelvador is the boon of boons. Now they need wait no longer for the food hygiene, economy, and convenience that only electric refrigeration provides. Others find it a marvelous convenience as an auxiliary electric refrigera-tor-both for food storage and beverage cooling.
For the many who need a second electric refrigerator to place, for example, in the entertainment room or pantry, the Crosley Chest Shelvador is ideal. It is compact, remarkably economical in operation, low in price, easily moved. It also makes an excellent beverage cooler.
In summer camps and cottages where electricity is available, the Crosley Chest Shelvador will be welcomed, with its ample supply of ice cubes-not less than two pounds - and its surprising roominess.
Small delicatessens, roadside stands, sandwich shops and other places with moderate electric refrigeration requirements will find the Crosley Chest Shelvador ideal.
In hospitals or other institutions where individual refrigeration is desirable this model, with its tahle top, will be found useful.


Remember that the Crosley Chest Shelvador hasevery essential Crosley Shelvador feature-the same quiet economical, long-life, trouble-free cooling unit that has made Crosley electric refrigerators famous-the same Shelvador convenience that adds greatly to the "usable" capacity See your Crosley distributor at oncelearn all about this new Crosley Chest Shelvador and how it opens up to you an entirely new and pracand how it opens up to you an entirely new and prac-
tically untonched market for electric refrigerators. tically untouched market for electric refrig
No dealer can afford not to handle Crosley!

Montana, Wyoming, Colorado, New Mexico and west, prices slightly higher

## THE CROSLEY RADIO CORPORATION

(Pioneer Manufacturers of Radio Receiving Sets)
Home of "the Nation's Station"-WLW- 500,000 watto-most powerful in the world- 70 on your dial powel crosley, Jr., President

CINCINNATI


Model EA-43. $\qquad$ $\$ 117.00$


Model EA-55.
. $\$ 145.00$

$5.5 \mathrm{cu} . \mathrm{ft}$. NET capactty, 11.6 sq ft. shelt area. 3 lce traye-63 cubes-one double depth tray Dimensions: $571 / \mathrm{s}^{\prime}$ high, $29^{\circ}$
w 1 de. $25^{12}$ 你" deep.
Model E-55
$\$ 157.50$


## Rockwell Kent, with the Eskimos in Greenland,



## hears the tango played in distant Argentina

F or the next eighteen months, Rockwel
It's dramatic advertisements like this that are selling new G-E All-wave radios

Joe Doe and Mary Roe never see their names in newspaper headlines But like Rockwell Kent, Diana WynBut like Rock Byrd and other famous yard, Admiral Byrd anders, they want G-F. All-wave set own in radio-a radio the best and the latest in radio packs a set that defies distance and packs a real thrill. So this year, thousands of Joe Does and Mary Roes have decided that their standard-range sets are woefully out-ofdate... that they just can't get along without a new All-wave G-E.

They comprise a new and enthusiastic oplayers-a great replacement legion of buyers-a serve, profitably and market you can serve, fring the complete with pride, by stocking the complet
line of new G-E All-wave sets. In the new G-E line, there's a model for every purpose and purse ... table receivers, consoles, radio-phonograph combinations ... electric sets and battery sets-priced from $\$ 18.75$ to $\$ 375$. (Prices slightly higher in the West, MidWest and South. Subject to change without notice.)
And behind them is a dramatic adverising campaign in national magazinestising campaign that are changing old-ser advertisemen G-E buyers.
owners to new G-E Electric distributo
See your General Electric distribut Or write the Genera port, Conn.

West, Mid-West and South Subtly higher in the
withour notice.


MODEL M-86-Typical of the many new G-E All-wave models is this smartly styled console. Priced at $\$ 119.50$. Other long- and short wave sets as low as $\$ 39.95$.


[^0]:    ZENITH RADIO CORPORATION, 3620 Iron Street, Chicago, Illinois

[^1]:    EVERY

[^2]:    THE KEN-RAD CORPORATION, Inc., Owensboro, Ky. Division of The Ken-Rad Tube and Lamp Corporation Also Mfrs. of Ken-Rad Incandescent Electric Lamps

[^3]:    NLL-WAVE sets, the big shot in radio merchandising today, have doomed the "shoes
    The finest trans-oceanic recel ver made is handicapped in picking up the comparatively weak energies from abroaa, unces and and finstalled by a gervice man. "Man made" static, otherwise, makes good reception impossible.
    CORWICO, famous for tis antenna products and radio wires serves the dealer and his service man in providing the proper antenna kits for the new tion you need to do this important job RIGHT.
    As always, we are here to help you. Get on the rivht side of this new development in
    let us assist you to profit accordingly.
    CORWICO has a complete line of kits
    plain antenna kits-plain donblets-matched impedance transformer kits and variable impedance matched kits.
    Write or wire us for full details

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