

RADIO

*and
Television*

RETAILING

FEBRUARY • 1941

A McGRAW-HILL Publication Price 25c





PROVEN FOR PERFORMANCE
in millions of Auto Radios

PROVEN FOR PROFITS
by thousands of Service Men



In the great majority of all auto radios and battery operated home receivers, Mallory-made Vibrators are standard original equipment. They have won this leadership through performance alone. In every case, they have been adopted by the set manufacturer, only after exhaustive efficiency and life tests.

Mallory Vibrators for replacement are identical in construction, quality and performance to those supplied for original equipment. Thousands of radio service engineers have found Mallory Vibrators the most profitable line they could handle because they insure customer satisfaction and eliminate troublesome comebacks.

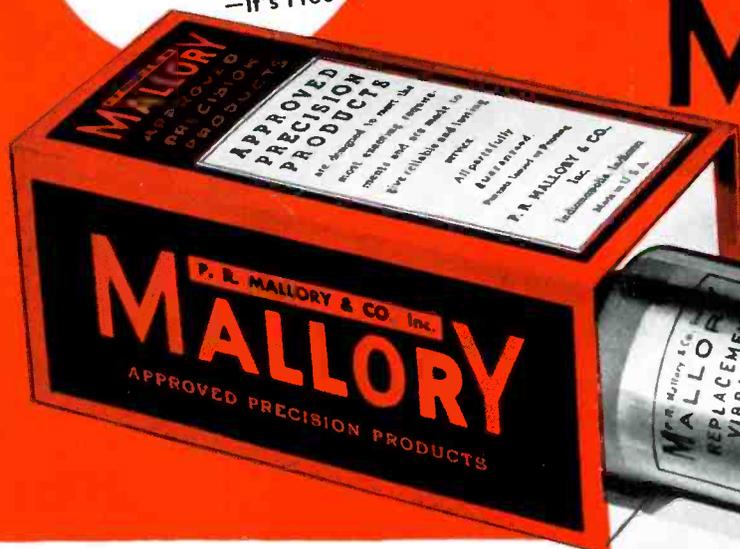
Safeguard your reputation for superior service by insisting on the best. Remember, Mallory Vibrators cost no more!



OUT MARCH 1st,
Vibrator Replacement
Guide

Order from
your distributor
NOW!

—It's Free



P. R. MALLORY & CO., Inc.
MALLORY
VIBRATORS

P. R. MALLORY & CO., Inc., INDIANAPOLIS, INDIANA

Cable Address
PELMALLO

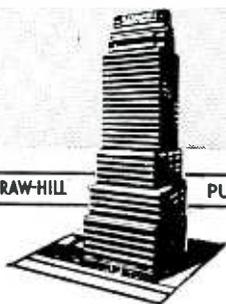
More
than ever
—INSIST ON

P. R. MALLORY & CO. Inc.
MALLORY
APPROVED
PRECISION PRODUCTS

VIBRATORS • VIBRAPACKS • CONDENSERS •
VOLUME CONTROLS • ROTARY SWITCHES •
SINGLE AND MULTIPLE PUSH BUTTON SWITCHES
• RESISTORS • RADIO HARDWARE

RADIO

and Television RETAILING



A McGRAW-HILL

PUBLICATION

FEBRUARY 1941

W. MacDONALD.....Editor
W. CARL DORF.....Associate Editor
VIN ZELUFF.....Technical Editor
A. XIQUES.....Assistant Editor
HARRY PHILLIPS.....Art Director

R. E. McGRAW.....Manager
J. A. SAMBORN.....Eastern Manager
K. R. GROENER.....Western Manager

RECIPE FOR A BLACK EYE.....	11
SALES PHOTOSHORTS.....	12
DESIGN FOR SELLING.....	14
RECORD RACKS AND CABINETS.....	18
COMPACT COMBINATIONS.....	19
PLAN FOR 1941 PROFITS.....	20
AUTO ANTENNA SPECIFICATIONS.....	22
YOUR AUTO RADIO MARKET.....	23
RECORDING EXPANDS.....	26
RECORD CONTROL SYSTEM.....	27
TRADE EVILS SPOTLIGHTED.....	28
NEW AIR CONDITIONERS.....	30
FORCE 'EM AND FORGET 'EM.....	31
CONTACT PICKUPS FOR CASH.....	35
SELLING INDUSTRIAL ACCOUNTS.....	38
AT THE BOAT SHOW.....	40
PREVIEW OF NEW PRODUCTS.....	41
NEW REFRIGERATORS.....	46
THE RADIO MONTH.....	48
ON THE NEWSFRONT.....	49
SHOP PHOTOS.....	56
CIRCUITS OF THE MONTH.....	57
HOW TESTERS SAVE YOU MONEY.....	65
HOW THE DESCRIPTOR OPERATES.....	66
TRICKS OF THE TRADE.....	70



SALES STATIC . . . Boy, I'll bet we'll find one in this bunch!

McGRAW-HILL PUBLISHING CO., INC.

RADIO and Television RETAILING, February, 1941, Vol. 26, No. 2. Published monthly, price 25c copy. Allow at least ten days for change of address. All communications about subscriptions should be addressed to the Director of Circulation, 330 West 42nd Street, New York, N. Y.

Subscription rates—United States and possessions, Canada, Mexico and Central American countries \$1.00 a year, \$1.50 for two years, \$2.00 for three years. Great Britain and British Possessions 12 shillings a year, 24 shillings for three years. All other countries \$2.00 a year, \$4.00 for three years. Printed in U. S. A. Entered as Second Class Matter, April 29, 1939, at Post Office, Albany, N. Y., under the Act of March 3, 1879. Cable address "McGrawhill, New York." Member of A.B.P. Member A.B.C. Copyright, 1941 by McGraw-Hill Publishing Co., Inc., 330 West 42nd Street, New York, N. Y.

Branch Offices: 520 North Michigan Ave., Chicago; 68 Post St., San Francisco; Aldwych House, Aldwych, London, W.C.2; Washington; Philadelphia; Cleveland; Detroit; St. Louis; Boston; Atlanta, Ga.

JAMES H. MCGRAW
Founder and Honorary Chairman

Publication Office
99-129 North Broadway, Albany, N. Y.

Editorial and Executive Offices
330 West 42nd Street, New York, N. Y.

JAMES H. MCGRAW, JR., President
Howard Ehrlich, Executive Vice President

Mason Britton, Vice Chairman
B. R. Putnam, Treasurer

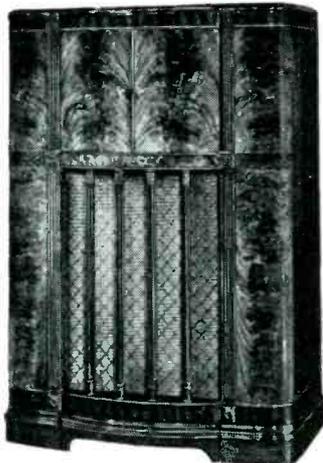
D. C. McGraw, Secretary
J. E. Blackburn, Jr., Director of Circulation

Leadership
in **FM**



NO. 535-PG AUTOMATIC RADIO-PHONOGRAPH

Plays and shifts 10" and 12" records mixed together. "Feather-Light Permanent Point" multiplies record life. FM, Standard and Short Wave broadcasts take on added realism through the Labyrinth and Special FM Carpinchoe Speaker System. One dial and one set of control knobs for all bands. Authentic Chippendale design cabinet. "Preferred-Type" Tubes.



NO. 535-M CONSOLE RADIO

Exclusive Labyrinth and Special FM Carpinchoe Speaker System reproduces the utmost of Standard, Short Wave and FM broadcasts. All bands on one dial and controlled by one set of knobs. Push-Button Tuning. Walnut Cabinet. "Preferred-Type" Tubes.

makes
Stromberg-Carlson
First Choice
FOR BOTH
FM RADIOS AND
FM RADIO-PHONOGRAPHS

As the only Telephone Manufacturer making Home Radios . . . as the Tone Quality Leader since 1924 . . . and with the exclusive Labyrinth and Carpinchoe Speaker to deliver the utmost of FM's increased fidelity, Stromberg-Carlson naturally takes the lead in FM reception. Now producing its **THIRD FM LINE**, backed by **TWO YEARS' FIELD EXPERIENCE**. Who else can offer such advantages—or record so many "FIRSTS" as listed below!

STROMBERG-CARLSON TELEPHONE MFG. CO., ROCHESTER, N. Y.

for **STROMBERG-CARLSON IS**

1st

- FIRST with a complete line of FM Radios
- FIRST with a complete line of FM Phonograph Combinations
- FIRST to advertise FM
- FIRST manufacturer to produce its **THIRD FM LINE**
- FIRST to complete 2 years' continuous **FM FIELD EXPERIENCE**, with more FM sets—in more models—in more homes than any other manufacturer

- FIRST to introduce a Coaxial Speaker expressly designed for FM
- FIRST to provide stock sets that permitted Major Armstrong to demonstrate the utmost of FM's possibilities
- FIRST and **ONLY** FM receivers with the Labyrinth and Carpinchoe Speaker
- FIRST with an FM adapter that included a "tweeter" speaker
- FIRST with an FM adapter that can be used alone as a complete FM radio
- FIRST manufacturer of FM radios to operate an FM station

LICENSED
UNDER
ARMSTRONG
WIDE-SWING
FREQUENCY
MODULATION
PATENTS

There is nothing finer than a
Stromberg-Carlson
Frequency Modulation

The Oregonian

PORTLAND, OREGON, TUESDAY, APRIL 4, 1939

CITY EDITION

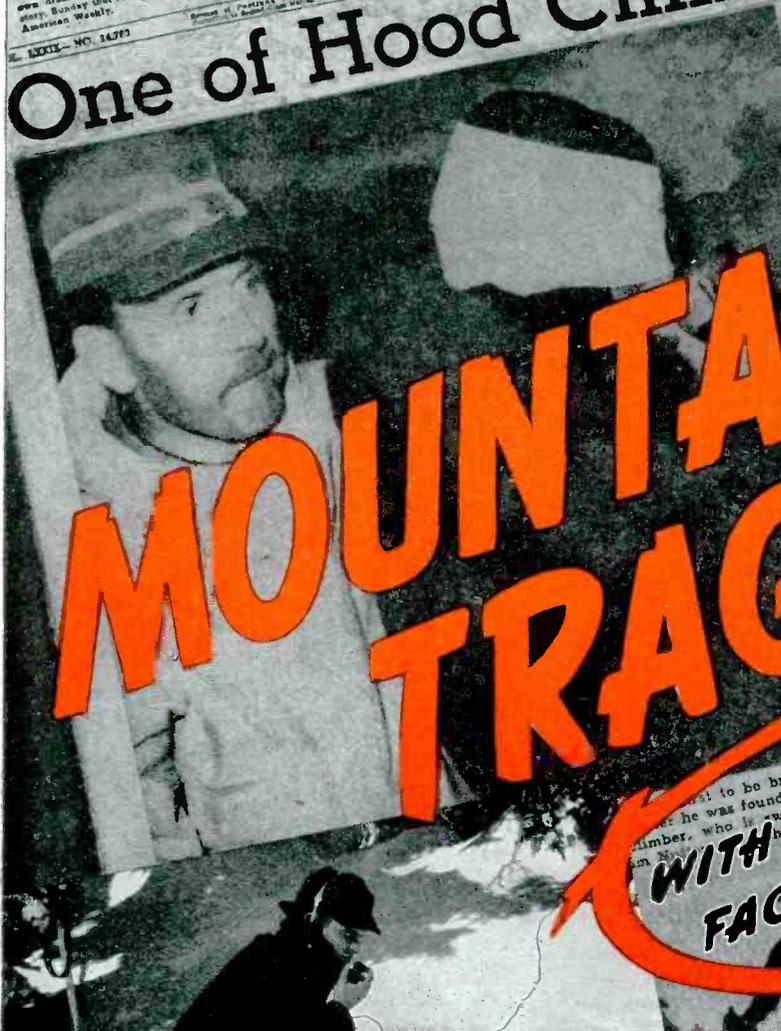
16 PAGES

PRICE FIVE CENTS

Own Ending

The Mock Schoolers' University of Washington... dramatic conclusion... Sunday... American Weekly.

NO. 14373



One of Hood Climbers Rescued: Rescued Climber Relates Details of His Struggle

BY JAMES LORENTZ

Here is the story of James (Spike) Lorentz, who was rescued Tuesday after having spent three days lost on Mount Hood, as related at the Oregon City bar...

Mystery of Tracks Cleared by Lorentz

The major mystery of the search for Gerald Herrmann and James Lorentz—the mystery of the footprints that seemed to lead to the wall of Mount Hood—was returning—was Lorentz the survivor, this hospital bed at Oregon City.

MOUNTAIN TRAGEDY!

WITH RAYTHEON A VITAL FACTOR IN THE RESCUE!

RAYTHEON

MAKES THEM ALL

NEWTON, MASS. NEW YORK CHICAGO
ATLANTA SAN FRANCISCO

WORLD'S LARGEST EXCLUSIVE RADIO TUBE MANUFACTURERS

THE thrilling rescue of James Lorentz from the tragic fate which overtook his climbing companion Gerald Herrmann on Mount Hood a year ago next month was another example of the important part radio takes in directing organized work in the National Forests.

It is significant that the U. S. Forestry Service is a steady user of RAYTHEON Tubes. Their engineers have found that RAYTHEONS can be depended upon even for use in portable two-way equipment carried in packs over rough mountain trails for use in EMERGENCIES!

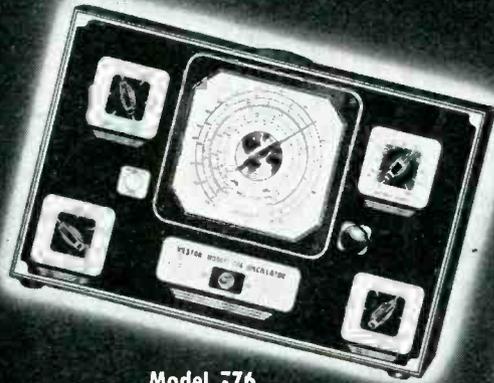
Replacing tubes in home receivers, auto sets and amplifiers may present easier problems, but the same dependable RAYTHEONS are available and cost not one penny more than ordinary tubes.

No wonder the ENGINEERS among Servicemen use them exclusively.

Over 9,000,000 push button radios must be reset for the new frequencies. This is a good time to replace weakened tubes with RAYTHEON and increase your service business in general.

INSTRUMENTS

that talk your language!



Model 776
Oscillator



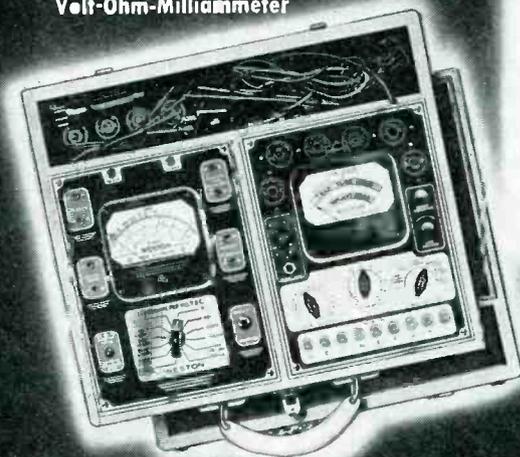
Model 669
Vacuum Tube Voltmeter



Model 772
Super-Sensitive Analyzer



Model 697
Volt-Ohm-Milliammeter



Model 778
Serviset

Fundamental! Long Life! Lowest Overall Cost! More Profitable! Dependable Accuracy!

"We use WESTONS exclusively because we can make more money with fundamental instruments," says this successful serviceman. "One reason is the fact that fundamental instruments never have to be replaced because of circuit changes or new developments. Furthermore, they remain trouble-free because they are simple, basic measuring tools, without trick circuits or troublesome gadgets. And when they are made by WESTON, you can bank on your measurements. With our group of WESTON instruments we're fixed for precise, profitable servicing for all time."

Be sure you get all the facts on the broad line of WESTON fundamental instruments for servicing radio receivers as well as communications and industrial circuits. Write to Weston Electrical Instrument Corp., 581 Frelinghuysen Ave., Newark, N. J.

WESTON
Radio Instruments

BRAND NEW 1941

ZENITH

REG. U.S. PAT. OFF.

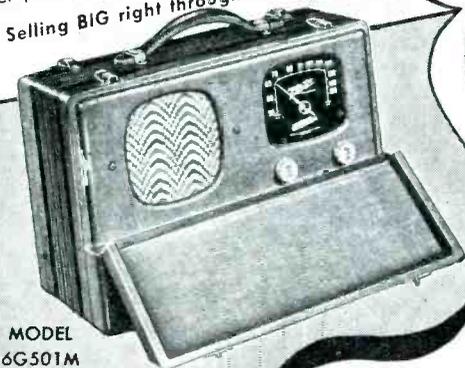
SUPER VALUE



MODEL 10S567

ONLY ZENITH HAS THIS!

The radio that knows no season. Zenith Jiv-
 versal Portable with patented built-in movable
 Wavemagnet (U.S. Patent No. 2164251). The
 only portable radio guaranteed to play where
 other portables fail, or your money back.
 Selling BIG right through the winter!



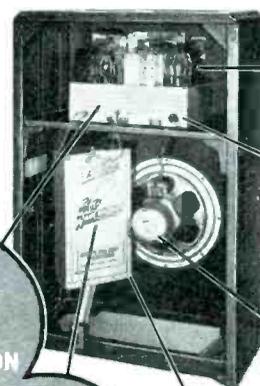
MODEL 6G501M

ONLY ZENITH CAN GIVE YOU THIS OUTSTANDING 1941 VALUE

New, big, smashing console value in the strategic price bracket . . . New features . . . New eye appeal . . . New cabinetry . . . A radio to pull those old sets out of the homes!

THIS IS ONLY ONE OF THE BIG SUPER VALUES IN THE NEW ZENITH PROSPERITY LINE

Your distributor has them all. See them today! . . . Big new table model values . . . Big new combination values . . . Big new battery set values . . . Every one priced in the brackets that sell!



10 TUBES

Including Two Heater Cathode Rectifier Tubes

14 WATTS OUTPUT

PUSH-PULL AUDIO AMPLIFICATION

ROTOR WAVEMAGNET No Aerial—No Ground

GUARANTEED FOREIGN RECEPTION

14" CONCERT GRAND SPEAKER

GET IN TOUCH WITH YOUR ZENITH DISTRIBUTOR **TODAY**

ONLY ZENITH HAS THE Radiorgan



Complete
NET
only
\$10⁵⁶



PORTABLE →

Always THE RIGHT
REPLACEMENT CONTROL
WITH THIS Centralab
PORTABLE

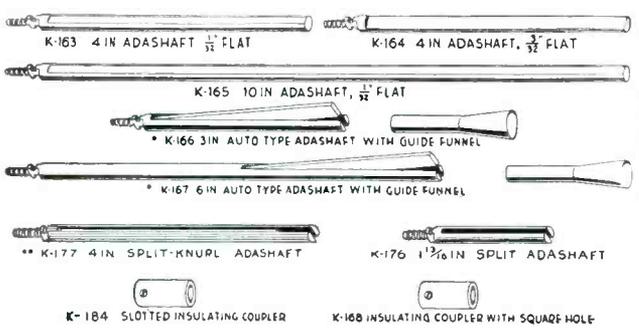
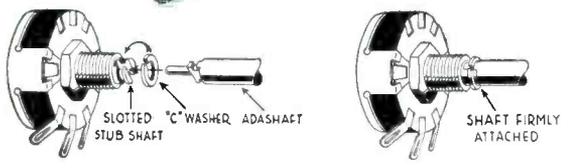
Adashaft Kit

You name the set and it's a hundred to one that you can do a replacement job right out of our PORTABLE Adashaft Kit . . . mighty good business sense . . . owning one of these kits . . . The strong steel case is 12" x 5" x 1 1/2" . . . you can even carry it in your coat pocket (note Old Man Centralab above) and you pay for the controls only . . . we give you the case "FREE"

Any shaft and control can be combined in a moment without special tools. Yet the RESULT is just as STRONG and RELIABLE as a ONE PIECE SHAFT.

Then replace the controls from your jobbers stock as they are used. Buy that ADASHAFT KIT today . . . you need it.

CENTRALAB Div. of Globe-Union Inc., Milwaukee
Cable Address — Centralab



INCLUDED IN THIS ADASHAFT KIT ARE THE FOLLOWING CONTROLS:

1 EACH OF		CURVE
10,000	ohms	3
25,000	ohms	3
50,000	ohms	6
250,000	ohms	6
500,000	ohms	6
1 MEG	ohms	6
2 MEG	ohms	6
3 MEG	ohms	6
250,000	ohms	tapped
500,000	ohms	tapped
1 MEG	ohms	tapped
2 MEG	ohms	tapped

SHAFTS

3	K163
2	K164
1	K165
1	K166
1	K167
1	K176
3	K177

COUPLERS

1	K184
1	K168

SWITCH COVERS

5	K155 SPST
1	K157 DPST

Centralab

ARVIN

Radios

Fast-Selling

TO RETAIL FOR

\$6⁹⁵ TO \$29.95

NEW Model 422

\$6⁹⁵

Brown Finish

MODEL 422A, IVORY FINISH

\$7⁹⁵



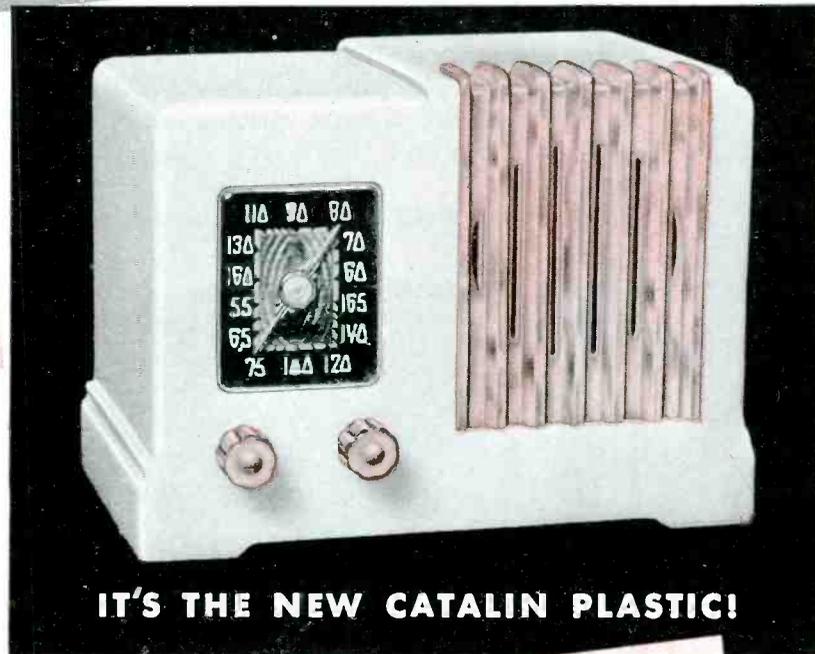
IT'S A 4-TUBE SUPERHET!

1 Compact but powerful 4-tube AC-DC superhet. Sells so fast every radio dealer needs it. Attractive unbreakable cabinet. Attached aerial. One-year service guarantee from factory to user.

● *Thousands of dealers* have taken on Arvins to supplement their other lines. Why? Because low list prices, good discounts, exceptional performance and eye-appeal all contribute to fast turnover and attractive net profits on Arvins.

Arvins are going big. There are 16 hot numbers in the 1941 line—backed by a responsible company that sold hundreds of thousands of radios last year. Arvins are quickly obtained from conveniently located jobbers who co-operate with dealers in merchandising these fast-selling radios.

NOBLITT-SPARKS INDUSTRIES, INC. • COLUMBUS, INDIANA
Prices slightly higher in extreme East, South and West.



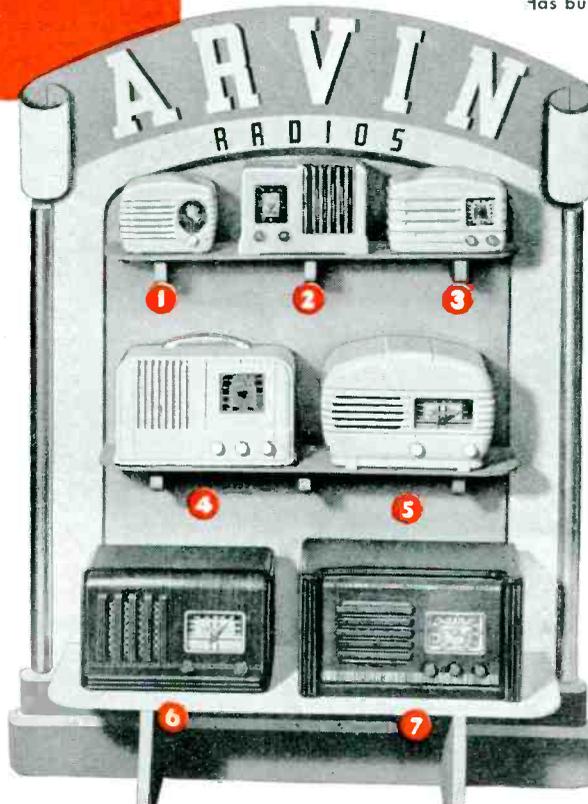
IT'S THE NEW CATALIN PLASTIC!

2 Most glamorous radio you've seen—in Catalin, the jewel of plastics. 5-tube AC-DC performance matches its jewel-like beauty. Has built-in loop.

MODEL 532A with onyx case, amber grille and knobs.

\$14⁹⁵

MODEL 532 with burgundy case, onyx grille and knobs at same price.



3 MODEL 522A—\$10.95. A 5-tube superhet with ivory finish unbreakable cabinet and built-in loop. Model 522 brown, \$9.95.

4 MODEL 722A—\$19.95. A 6-tube superhet in ivory plastic cabinet with built-in loop and carrying handle. Model 722 walnut, \$18.95.

5 MODEL 622A—\$14.95. A big 5-tube superhet in ivory plastic cabinet with built-in loop. Model 622 walnut, \$13.95.

6 MODEL 632—\$17.95. A big 5-tube superhet in walnut wood cabinet with built-in loop.

7 MODEL 732—\$24.95. A powerful 6-tube superhet in walnut wood cabinet with built-in loop.

FREE This fine floor order for one each of six Arvin models... Ask jobber.

ARVIN - The Fast-selling Low-priced Line Every Dealer Needs



"HERE ARE 8 NEW WAYS TO MAKE MONEY!"

EIGHT NEW TABLE MODELS BY GENERAL ELECTRIC!

Here they are! Eight new models—seven straight radios and one combination—in colorful plastics and wood veneers! *Every one a sales winner!*

Investigate! This is, beyond a doubt,

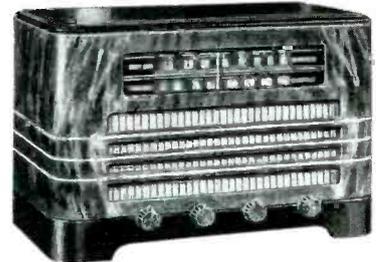
the finest line-up of low-priced radios General Electric ever offered.

Get in touch with your G-E Radio distributor or write—General Electric Co., Radio and Television Department, Bridgeport, Conn.

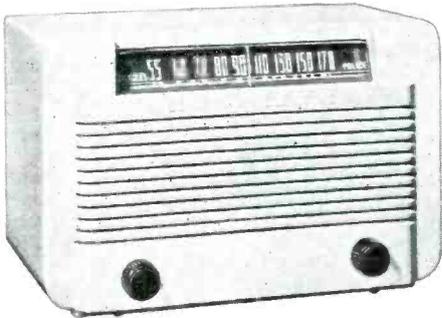


MODEL L-500—The Blue Ribbon Prize-Winner. In mahogany plastic cabinet that won the top award for styling in nationwide Modern Plastics contest.

PRICED FOR VOLUME SALES
\$9.95 to \$39.95
 (Slightly Higher in West and South)



MODEL J-63 — Smartly-styled cabinet of American Walnut veneers with White Holly inlays.



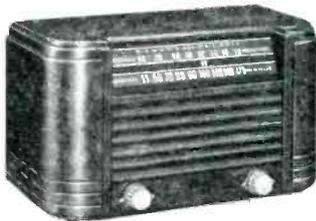
MODEL L-550—In sparkling ivory plastic. Similar in design to Model L-500.



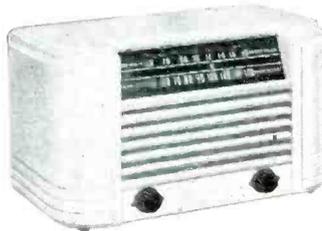
MODEL J-678 — Radio-Phonograph Combination. Cabinet of American Walnut and Stripe Sapeli veneers.



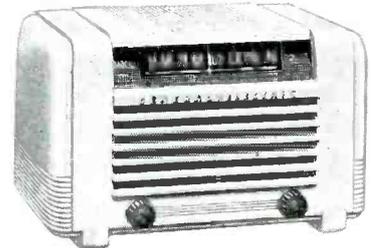
MODEL J-602—In smartly-styled walnut plastic cabinet.



MODEL J-614 — In a streamlined cabinet of mahogany plastic.



MODEL J-664 — Finished in ivory plastic. Similar in design to Model J-614.



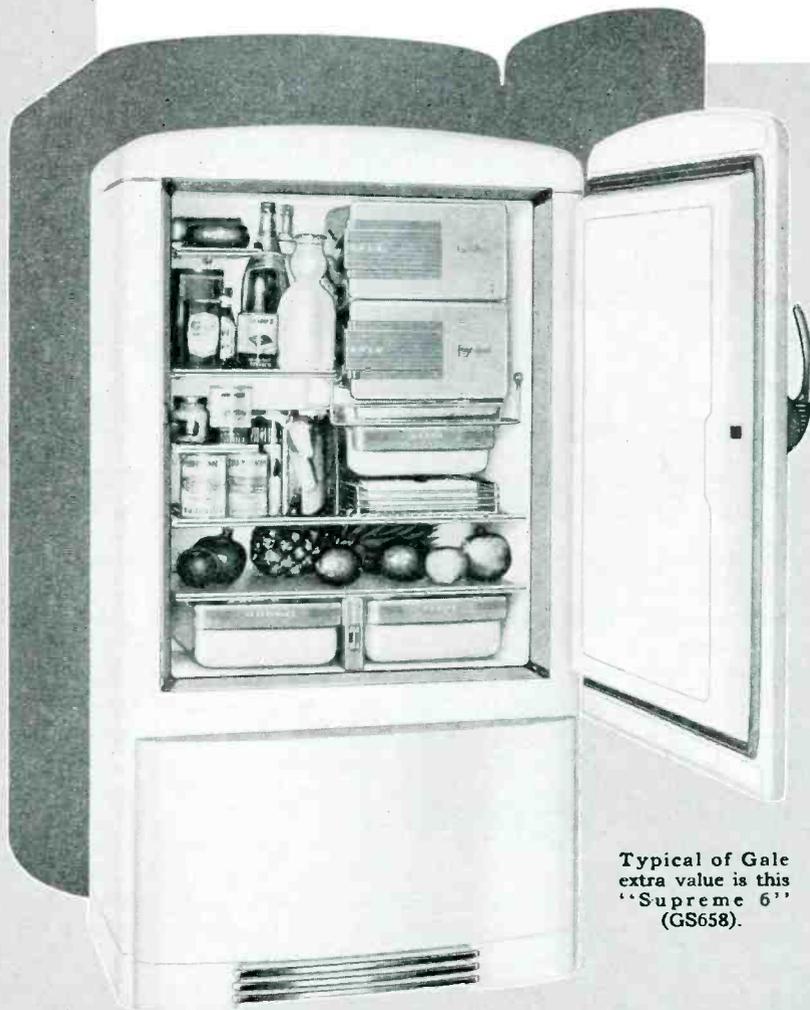
MODEL J-603—In beautiful ivory plastic. Similar in design to Model J-602.

GENERAL ELECTRIC

Gale gives
 'Extras'
 AT NO EXTRA COST

FOR EXAMPLE . . .

Just compare this big, oversize Gale "Supreme 6" (GS658) with any other popularly-priced refrigerator on the market! It's priced to meet the toughest competition, give you a generous margin, and offers the buyer a host of features—twin freezers . frozen food storage . meat drawer . dairy basket . twin vegetable crispers . thermometer . vegetable bin . *hermetic* 'Mechanical Iceberg' unit with improved equalizer and revolutionary FLUID COOLED condenser—continuous dissipation of heat without the use of a fan. Silent—no moving parts.



Typical of Gale extra value is this "Supreme 6" (GS658).



HERE'S WHAT GALE 'EXTRAS' MEAN TO YOU . . .

The extra beauty, economy, and luxury of the new Gale models give the buyer more for his money. That means *more* sales . . . *easier* sales for you!

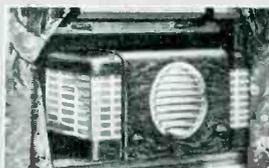
Step-up selling is logical and easy. Each step-up gives the buyer extras he can see and *want!* And, each step-up gives *you* a bigger *margin* of profit.

Every Gale is a *profitable* model. There are no "loss leaders". No quotas. No high pressure. Direct from factory sales policy lets *you* make more.

Gale builds supremely good refrigerators and pays you well to sell them. This year the job will be easier and more profitable than ever before. *Get started right now!*

GALE PRODUCTS

Refrigeration Division:
 Outboard, Marine & Mfg. Co.
 GALESBURG, ILLINOIS



GALE Portable Air Conditioning Units — another profit-building appliance!

Gale
 ELECTRIC REFRIGERATORS

GALE PRODUCTS
 1627 Monmouth Blvd.
 Galesburg, Illinois

Gentlemen:

I want to know what the Gale line can offer me. Please rush full facts without obligation.

NAME _____

ADDRESS _____

CITY _____ STATE _____



When Two Directions Are Better Than One USE UTAH BI-DIRECTIONAL SPEAKERS

● The back wave, as well as the front, is utilized to deliver voice reproduction perfectly in the Utah Bi-Directional Speaker. Embodying the latest speaker design and construction features, it is especially suited for factory call and paging systems where high noise level is a factor.

The Bi-Directional Speaker cone resonance and response are matched to that of the attractive non-metallic case. An absence of excess low frequency response prevents distortion of voice. In addition to dustproofing the speaker, the case is treated to assure maximum freedom from dust and metallic particles.

Terminals of the Utah Bi-Directional Speaker are brought out through the case. It is not necessary to open it when installing. Choice of line transformers is included, tapped at 500 to 4750 ohms, marked clearly for hook-up. This permits the use of from 1 to 20 speakers on a 250 or 500 ohm line. Sturdy swivel base makes installation easy and enables

speaker to be turned in any direction after mounting.

UTAH WALL REPRODUCER



This Utah speaker is identical in construction to the Bi-Directional; however, the response has been extended to reproduce music as well as voice. The case is of molded non-metallic material. The finish will blend with any decorative scheme. This unit is extensively used as an

extra speaker for coin-operated phonographs—and as an additional speaker in homes, recreation rooms, etc.

Write for complete information about these and other speakers in the complete Utah line. There is no obligation. Utah Radio Products Company, 810 Orleans Street, Chicago, Illinois. Canadian Office: 560 King Street West, Toronto. In Argentine: Ucoa Radio Products Co., SRL Buenos Aires. Cable Address: Utaradio, Chicago.



S P E A K E R S

VIBRATORS • TRANSFORMERS • UTAH-CARTER PARTS

Recipe for a **BLACK EYE**

FOR SEVERAL ROUNDS radio manufacturers have been shadow-boxing with receiver design, whirling their arms in a manner impressive, yet so unscientific there is danger they may knock themselves out.

Already this has resulted in several self-administered black eyes. Sets now perform attractive extra functions, are easier to tune and styling apparently satisfies the mass market. *But few are as free from interference as the older sets they replace.* And this the public will eventually discover, even though broadcasters who have increased power, police and amateur stations, still appear to be the "patsy."

Dealers and servicemen are already painfully conscious of this fact.

THE TROUBLE is not so much adjacent channel interference as it is trick pickup of signals properly distant on the dial and really minding their own business.

To technicians familiar with superheterodynes, the chief cause of such weird performance is obviously omission of refinements, once considered essential and added to insure foolproof reception shortly after this excellent circuit first made its appearance, only to be later removed. It is also obvious that the reason for the omission is purely price. And a very questionable method of slashing it seems because this circuit, so emasculated, can scarcely be considered modern at all.

The situation would be serious enough even if it applied only to the cheapest receivers, for customers might conceivably be convinced that they must expect some interference on such sets. *But it is not just the cheapest radios that "stick their chins out and ask for it."* Even in relatively expensive models invisible circuit refinements are

too often sacrificed to visible sales features in order to add merchandising flash and still hold the list down.

MANUFACTURERS who continue to brush aside complaints about interference with the excuse that trouble occurs in too few locations to warrant consideration when designing models for national distribution are "leaving their guard open."

Our own contacts with the trade indicate that complaints are widespread rather than isolated and growing dissatisfaction in the field concerning receiver selectivity is extremely dangerous for the future of this business, which must depend to such a large extent upon replacement sales.

Greater freedom from interference must be included in new radios.

If it isn't, there will soon be a run on a raw beef-steak among the shadow-boxers.



ARMY DRAFTS RADIO

Soldiers of 245th Coast Artillery, stationed at Fort Hancock, cheer their favorites while listening to sports returns via radio. Men in camps all over the country are allowed their individual radios, dealers might well note



PHOTO *Shorts*

Pictures *from the News*
to help you **SELL**

LAUGH WAY TO PRIZES

After an advance showing of the picture *The Thief of Bagdad*, Rex Ingram, actor in the movie, staged a laugh contest for children in a New York hospital. The merriest boy and girl received Philco portables

RECORD RETAILING

A planned design for a record department resulted in this neatly arranged new layout at Bloomingdales, New York. Hits of the week are accented in a frame, for easy customer selection of popular new discs



VISITORS CUT SOUVENIRS

People attending the Electric Institute 1941 Radio Exposition in Washington were allowed to make free recordings of their voices. NBC, Mutual, and CBS announcers took turns as master of ceremonies and autographed discs for fans





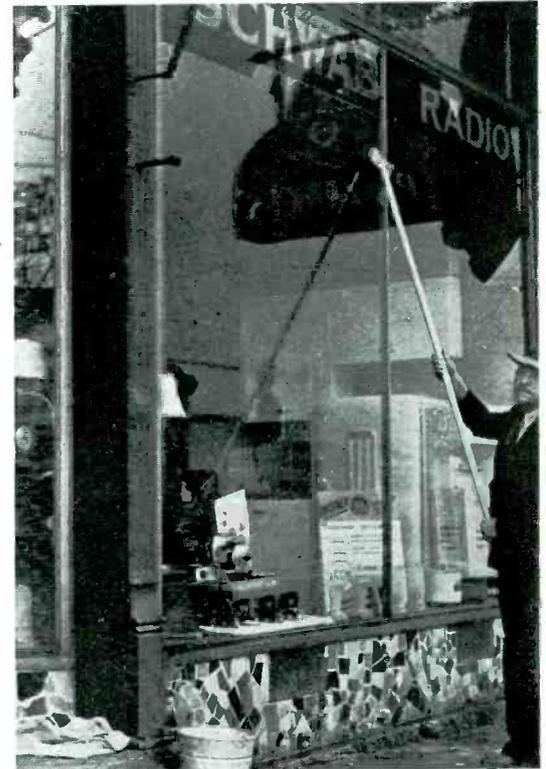
CORSETS FOR COPS

Examining batteries in back and receiver and transmitter in the front of a special vest, New York's Mayor tests a two-way radio for patrolmen. Effective over a 1000 foot radius, the "walky-talky" costs \$165, can be used inside buildings to contact other police on the outside



HOME FOR THE AGED

"Dated" receivers of a bygone era provide H. Zollman, Gulfport, Miss., an effective contrast with new models. Displayed in his window the old sets dramatize a cartoon blow-up clipped from *Radio Retailing*



EVEN THE BOSS WORKS

Although he employs seven men Louis Schwab of Cleveland holds up his end when there's work to be done. When asked: "Why the window cleaning?" Schwab retorted, "Everyone else was out on calls and it needed washing. Why shouldn't I do it?"

BE PREPARED WITH RADIO

Every boy should have a radio in his room and boy scouts in particular need versatile portable models for use at home as well as in the woods



DESIGN *for* Selling

DEALERS in 45 States Tell *Radio Retailing* What They Need in New Lines for 1941

RETAILERS are not infallible when they attempt to interpret what the public wants in the way of new radio equipment.

But they do work closer to the consumer than any other group in the business. So their opinion will do to ride our money on, particularly since if dealers get designs they themselves can feel enthusiastic about this enthusiasm is apt to prove contagious among the people they serve.

How the trade feels about the various types of sets the industry at present offers is shown graphically on the facing page. Dealer opinion concerning cabinets is charted on the following "spread," along with a table listing common 1940 performance complaints.

Because we feel that these illustrations cover the major points of our survey just about as clearly as they can be covered with available data no attempt to go into greater detail is intended here. Rather, we recommend close study of the illustrations by interested designers, devote the remainder of this text to other dealer comment.

Some suggestions are obviously "hot" while others, for various reasons, are impractical. We have a feeling that in spite of this mixture manufacturers will find sufficient "gold in them thar hills" to warrant wading through most of the following paragraphs.

Possible New Types

Greatest single dealer demand at the moment appears to be for "a table model radio of fair size, in a plain but well-finished cabinet, with really good selectivity, tone, volume and quality parts. Omit extras such

as shortwave tuning, pushbuttons and cabinet 'gingerbread' to provide a set that is 'all-radio,' listing at about \$30."

Other suggested types (some of which are already generally available and others that are not) include:

Chairsides models with sloping panels and speakers turned toward listener.

Chairsides with large speakers in separate, remote cabinets.

Automatic record-changing combinations in chairside styles.

Combinations with non-opening tops.

Chassis for installation in expensive existing cabinets.

Portable phono-radio combinations to work on batteries or ac.

Non-wireless record-players for largest records, with lids.

By way of human interest, it is also reported that several dealers in the northwest express a need for 6-volt allwave receivers to be sold

in Alaska. Should be table models.

Cabinet Suggestions

Dust seems to be causing housewives sufficient concern to warrant close inspection of new radio cabinets as possible collectors. This accounts for suggestions that (a) "gingerbread" decoration be avoided to reduce number of cabinet crevices (b) covers be provided for cabinet-backs (c) room be left beneath consoles to permit easy floor cleaning and (d) grille cloths and "bars" across grilles be eliminated.

A number of dealers recommend: Carrying handles for all small sets.

Rubber mats on the bottoms of plastics to prevent slipping and breakage.

Phono-radio cabinet compartments for later installation of FM.

Farm radio cabinets with room for built-in batteries.

Several ask: "Why not use more chromium for trim." And "how about enameled metals for small set cabinets?"

If your interest is chiefly in dealer recommendations concerning specific models, cabinet styles and materials, this is a good place to stop. Spend your remaining reading-time "between the lines" of those charts.

On the other hand, if you can take semi-technical stuff and like it . . . read on, McDuff.

More Ideas

A lot of dealers obviously like:

Large, plainly-marked dials, particularly those of the "slide-rule" variety. Dust-protected types preferred.

Plainly labelled controls.

MANUFACTURERS:

IF your new line designs are not yet set this data will help you hit the bullseye

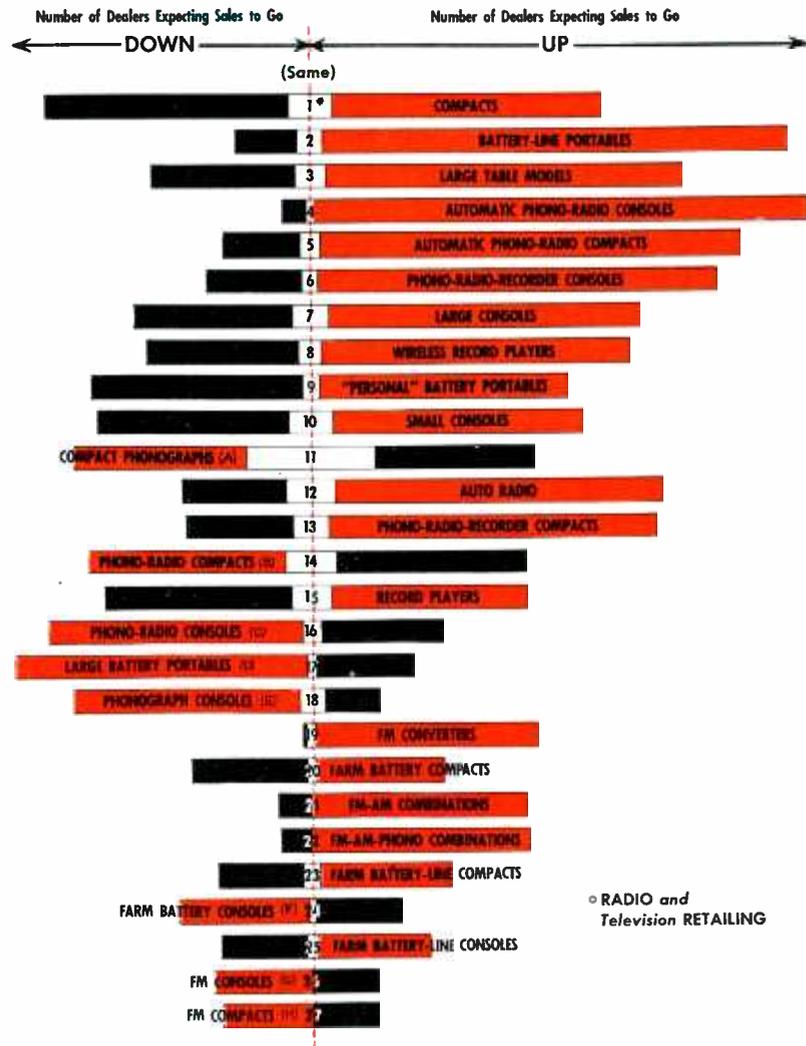
IF new model plans are already completed it may help as a production guide

*Additional details available on request

By
W. MacDONALD

How the **TRADE** Thinks Consumer Interest Will Trend

By Comparison With 1940



◦ RADIO and
Television RETAILING

RED BARS to RIGHT of DOTTED LINE Indicate Preponderance of Dealer Opinion that Sales Will RISE
RED BARS to LEFT of DOTTED LINE Indicate Preponderance of Dealer Opinion that Sales Will FALL

* Arranged in Order of Apparent Current Concern to National Average Dealer (Overall length of bars reflect number of survey replies)

(A) See # 5, 8, 13, 15 (C) See # 4, 6, 22 (E) See # 4, 6, 22 (G) See # 19, 21, 22
(B) See # 5, 8, 13, 15 (D) See # 2, 9 (F) See # 20, 23, 25 (H) See # 19, 21, 22

Pushbutton tuning with station tabs any place except on the buttons. Phono switch on front panel. Headphone jacks, particularly on smaller models.

Separate bass and tone controls. External extra speaker jacks.

Less widespread, but nevertheless interesting are suggestions such as: Single pushbutton to tune in just one local police channel.

Weather-band tuning instead of shortwave or police.

Combination program-timers and electric clocks, built in.

Pushbuttons, by the way, are still in general disrepute due to drift and other difficulties. Best comment on the subject from a dealer is this one: "Pushbuttons are like the olive in a Martini . . . nice but not necessary."

Interest in foreign reception, still high in certain areas, appeared to be declining when considered on a national basis. Where it was pushed by the trade better band-spreading was invariably suggested.

The time for inclusion of television "jacks" in new radios, most dealers feel, has passed.

Little interest was expressed in remote tuning, although some dealers thought they might move it if it could be made more foolproof than systems seen in the past (without upping cost).

Serviceing SOS

The foregoing suggestions, obviously, were made largely by dealers whose chief interest is the sale of sets.

More technical still are those received from servicemen but we pass a few along for what they are worth to manufacturers who ap-

preciate the fact that what servicemen think about merchandise may eventually make or break a reputation.

Servicemen think there should be more:

Moisture-proofing.

Speaker plugs.

Plainly marked make and model numbers.

Really good adhesives to hold

plastic dial "windows" in place.

Transfer-type markings that don't readily rub off.

Cordless dials.

Good soldering.

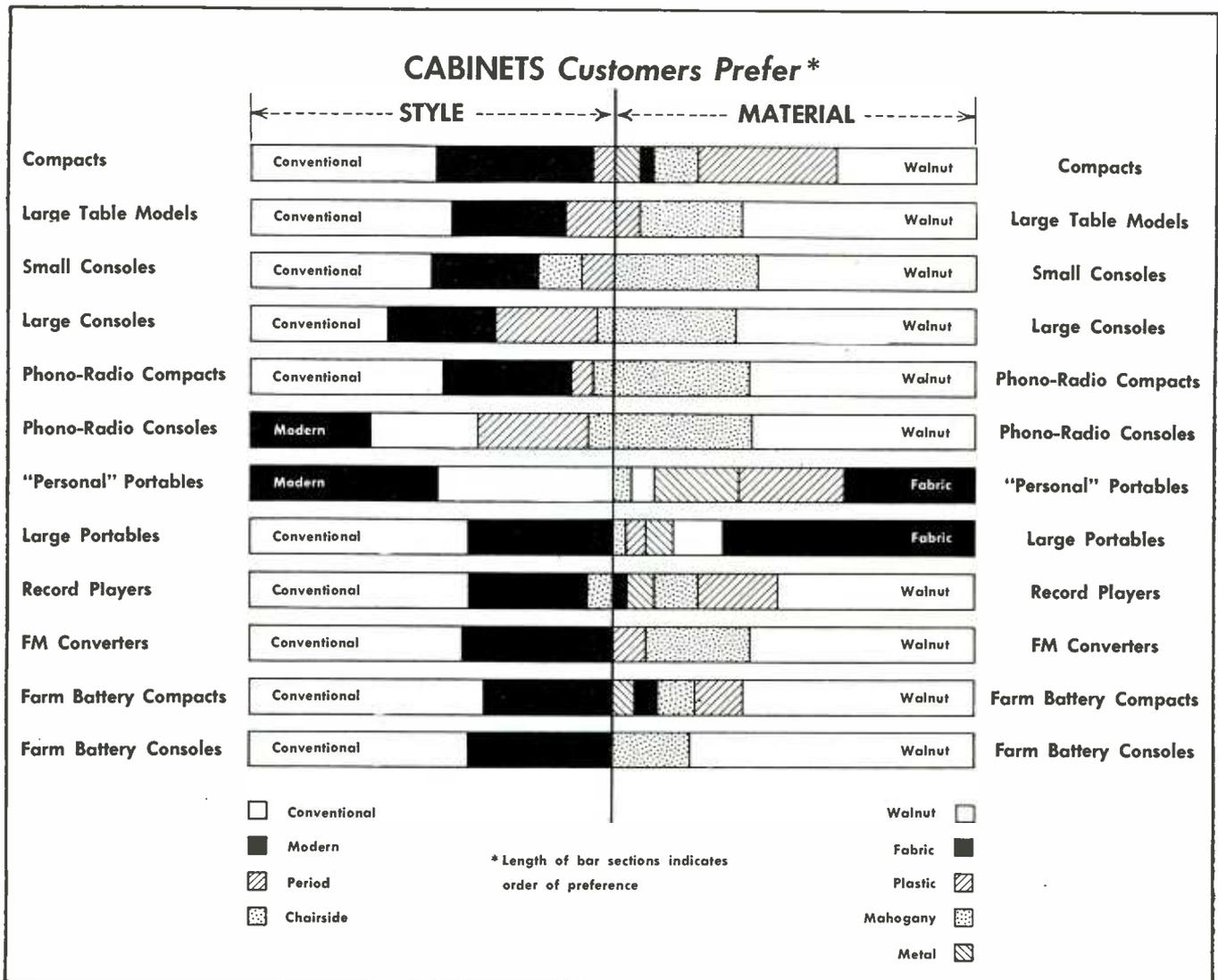
Freedom from corrosion.

Length in built-in loop leads.

Metal in chassis.

Socket designation.

There were many more, but even in the staccato style adopted here



to convey the maximum of information in the minimum reading time there is not sufficient room to completely "cover the waterfront."

Accessories, Allied Lines

While we were at this business of finding out what the dealer thinks the consumer wants we also picked up a lot of miscellaneous comment about radio accessories and allied lines.

Here are the things which most intrigued us:

TUBES—A great many subscribers urged us to recommend to all tube makers that the number of types be still further limited. Numerous additional suggestions urging "standardization" are interpreted to be a further sub-division of this same question.

There were quite a few urging tube makers to use still stronger re-

placement tube boxes. Also some opinion to the effect that certain recently received tubes appeared to be more microphonic than usual, less rugged.

Frequent pilot lamp burnouts were reported, most dealers and servicemen believing that set makers were underestimating average line voltage. Others thought the pilots were unwisely placed at points in circuits subject to wide voltage variation.

Certain tube types were said to be frequently very difficult to remove from sockets. Standardization of sockets was often recommended.

PARTS—Better all-around quality was felt to be the chief need in connection with replacement radio parts of many varieties. Standardization was considered nearly as important. It was also felt that packaging might in many instances be more impres-

sive to the consumer and that list prices might more often be prominently shown on such packages.

Miscellaneous suggestions concerning replacement parts included: Clearer identification of condenser sizes. Plug-in electrolytics. Adjustable bearings on variable tuning condensers. Speakers with replaceable parts (and more clearance around voice-coils).

Quite a number of servicemen said there was a need for loops that might be installed in older sets lacking them, if some way of achieving satisfactory performance could be found and installation was not too difficult.

RECORDERS—A desire for better average quality was generally indicated when questions were asked about this equipment. There were also many dealers who thought operation could be further simplified

and an equal number who said that too much of this merchandise came through with inadequate operating instructions.

Not a few dealers felt that there should be more good "kits" on the market. Some thought there was plenty of room for improvement in modulation level indicators. Better motors were a common suggestion. And a couple of bright boys recommended that an operating light be included for night work.

RECORDING BLANKS—Great-est need in this branch of the business, dealers thought, was for still better blanks in the lower-priced brackets. This accounts for a rather imposing total number of requests that (a) blanks be made tougher, with thicker coatings, (b) smoother surfaces and (c) longer life.

There was considerable agitation for blank standardization. Some dealers thought manufacturers should be able to find a way to avoid annoying thread-tangle. Several suggested that blanks be made black rather than in colors, so that they would not show dirt so readily.

NEEDLES—Dealer replies indicated that there is considerable interest in real "quality cutters."

Questioned concerning playback types, most dealers said they could use longer life but thought manufacturers should guard against achieving this end in any way which might shorten disc life. One dealer (and we should really blush when we repeat this) said that what good needles needed more than anything else was more *advertising* . . . so his customers would believe him when he said the stuff he had in stock was tops!

While on the subject of recording, it was also noted that the trade has a feeling that new pickups might with profit be made more rugged.

INTER - COMMUNICATORS—Universal cry here is obviously for more natural tone. Greater simplicity of installation, more emphasis on "selective-silent" types, better looking cabinets and less hum follow in this order.

SOUND EQUIPMENT—More quality construction is clearly indicated in this field. Sound equipment, say dealers, should if possible also be made still more flexible. It should have better tone. Units should use standard input and output plugs.

Last, but not least, many subscribers felt that sound equipment manufacturers could do themselves and their business a great deal of good by establishing a standard output rating system.

TESTERS—This merchandise is not, strictly-speaking, the "re-sale" type directly within the scope of our survey. But a good deal of constructive comment on it came in "over the transom," and it would be a wicked waste to omit it.

Servicemen say that primarily they want their test equipment designed with minimizing of obsolescence in mind (several think ranges for television and FM should now be built-in just for "insurance"). They think it should be simpler and more rugged. They think it should be more accurate. And they say they would gladly pay reasonably higher prices for top quality.

These, of course, are comments of the perennial variety. Some of the following are not.

A sufficient number of servicemen to mean something to tester designers wants: Larger dial scales.

Sizes for standard rack-panel mounting. Schematics included within the case of every instrument. Some say they'd like to see design trend toward separate units. Several say that too many new voltmeters omit the 0-150 volt scale. And a couple maintain that some of the new stuff is too modernistic in appearance to be technically impressive.

Design for Selling

That, gentlemen, is the complete "works."

In some instances it is sketchy and in others, no doubt, more detailed than it needed to be.

Be that as it may, this data represents a difficult cooperative job of work on the part of *Radio Retailing's* retail readers to aid manufacturers with their current design and production problem.

It should be a definite help.

For the best way to "Design for Selling," we sincerely think, is to *give dealers what they say they can SELL and leave it to them to convince the consumer that he should BUY it.*





COMPACT

PEOPLE WHO BUY soon have scarred and battered records scattered all over the house unless dealers simultaneously sell accessories to keep them in

Record RACK and CABINET Makers

CABINETS

MODEL HEIGHT SHELVES RECORDS FRONT SEPARATORS

Ansley Radio Corp., 4377 Bronx Blvd., New York, N. Y.

RC1	30	2	240	open	2
RC2	32	2	240	doors	2

Chicago Novelty Furn. Co., 1750 N. Campbell Ave., Chicago, Ill.

1005	34		80	open	3
------	----	--	----	------	---

Continental Radio & Tele. Corp., 3800 Cortland St., Chicago, Ill. (Admiral)

101	25 $\frac{3}{8}$	2	8 albums	open	4
102	27 $\frac{3}{8}$		8 albums	doors	4

Magnavox Co., Fort Wayne, Ind.

7E				doors	
7G				doors	
7H				doors	

Schloss Bros., 801 East 135th St., New York, N. Y.

593	25	1		open	
525;431	25	1	120	open	3
428	27	1	120	door	3
586;578	31	2	240;250	open	
580;582	32 $\frac{1}{2}$	2	250	open; doors	0;3
587;579	45	3	360;375	open	
581	46 $\frac{1}{4}$	3	375	open	
622	31	2	250	doors	3
584	32 $\frac{1}{2}$	2	215	comb.	
429	32 $\frac{1}{4}$	2	240	doors	3
436	34 $\frac{3}{4}$	2	300	doors	3
585	32 $\frac{1}{2}$	2	200	comb.	rack

Tonk Mfg. Co., 1912 N. Magnolia Ave., Chicago, Ill.

7806;7802	35	2*	216†	doors	
7379;7804	35 $\frac{1}{2}$	2*	192†;216†	open	
6101;7378	27 $\frac{1}{2}$	1*	96†	open	
7803;5121	28	1;1*	96†;108†	doors	
5122	33	2*	216†	doors	
7620;7421	28	1	108†;108†	open;doors	
7810	22-50§	1-3§	144†‡	open	

Wabash Cabinet Co., Wabash, Ind.

10	26	1	6 albums	open	yes
20	36	2	16 albums	open	yes

* Grooved shelves. † Records in albums. § Optional sections. ‡ Per Section.

RACKS

Adler Mfg. Co., 2901 W. Chestnut St., Louisville, Ky.

Decca Records, Inc., 50 W. 57th St., New York, N. Y. (50 Records).

General Records, Inc., 1600 Broadway, New York, N. Y. (50 Records).

Muscraft Records, Inc., 10 West 47th St., New York, N. Y. (50, 50 Records)

Peerless Album Co. Inc., 38-44 W. 21st St., New York, N. Y. (50 Records).

RCA Mfg. Co., Camden, N. J. (40 Records).

Schloss Bros., 801 East 135th St., New York, N. Y. (50, 75, 100 Records).

RECORD-PLAYING machines will dominate the radio market this year and probably several to come. This prediction seems as safe as one that the sun will rise tomorrow in view of the tremendous increase in the sale of such equipment achieved last year (see "1940 Figures in the January number) and reports from dealers that consumer demand continues to pyramid, recorded elsewhere in this February issue.

Certain to be up near the head of the list are compact radio-phonographs and particularly those incorporating automatic changers. Already included in many lines, machines of the latter type will unquestionably be seen in even more later in the season when new models are introduced and, meanwhile, non-automatics should adequately "hold the fort."

Crisis In The Home

Combination compacts, not to mention wireless and direct-connected accessory record players, are already selling in such quantity that it is apparent storage of discs in homes will quickly develop into a minor domestic crisis.

"Where can we keep records so that they will be easy to find and safe from breakage" is a question now coming into common consumer use. It even applies to people who have large machines incorporating some storage space of their own but not enough to keep pace with rapidly increasing disc collections. The answer appears to be purchase of more albums, table and floor type "racks" and it is obvious that radio and record dealers can make a dollar or two on such accessory business, particularly at the outset.

Manufacturers "Hep"

Oldtime manufacturers of disc storage devices are quite aware of the mounting demand and are again turning out new models at a rapid rate. Furniture manufacturers inactive in the radio field for many years are reliably reported coming back into it. Considerable activity in the design of racks and cabinets is also noted among disc manufacturers. And several set makers are already building such accessories, realizing that they not only remove one more objection to the purchase of compact combinations but at the same time provide a handy place on which to place sets and, perhaps most important of all, permit the trade to make "two unit" package sales involving a more substantial gross.

Watch this rapidly developing "rack" business roll.

COMBINATIONS

Complicate Disc Storage Problem



GENERAL ELECTRIC L-678



ADMIRAL 70-K5 \$49.95



SONORA KNF-148 \$34.95



CROSLY 35AK \$24.95



PHILCO 601P \$29.95



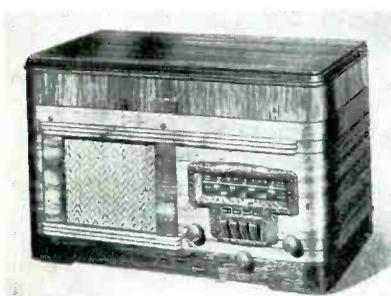
RCA VICTROLA V-101 \$39.95 F.O.B.



EMERSON 382 \$29.95



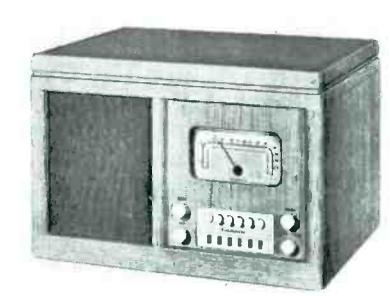
MOTOROLA 58FRC \$49.95



FARNSWORTH BK-69



STEWART-WARNER 5V9



MAGNAVOX 31F \$79.50



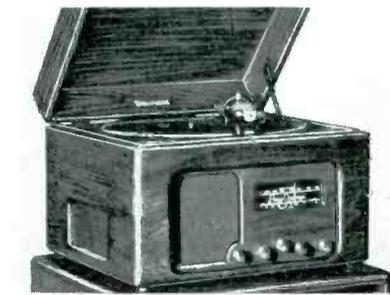
DeWALD 669 \$34.95



HOWARD 307-TP \$54.95



BELMONT 533D



ANSLEY D10-A \$84.50



AUTOMATIC 141 \$22.95

FADA PL67 \$49.95

PILOT TX42 \$99.50

MAJESTIC TP221-A \$34.95

AIR KING 4129 \$19.95



Suggested MONTHLY SALES Budget

	ALL MERCHANDISE		RADIOS ONLY	
	Net Sales	% Change from 1940	Net Sales	% Change from 1940
January ...	\$4,175	- 4.9	\$1,552	- 6.4
February ..	4,487	- 5.7	1,556	- 2
March	7,224	+13.2	1,842	+11.4
April	8,989	+21.3	1,618	- 2.4
May	8,947	+ 6.5	1,612	- 9.0
June	8,566	+ .4	1,468	- 7.3
July	7,316	+ 2.3	1,533	- .1
August	7,830	+ .6	2,231	+ 5.6
September .	8,316	+ 5.8	2,801	+29.6
October ...	9,179	+ 8.5	3,378	+22.7
November .	7,941	+ 6.4	2,789	+ 9.5
December ..	10,538	- .7	4,858	+ 8.7
Total	\$93,508	+ 4.7	\$27,238	+ 7.0

PLAN for 1941 Profit

By **ROBERT LEE COSHLAND**

with Sirota, Kraus & Gleason, C.P.A., New York

HERE IT IS,—a sales plan for 1941, based on the latest trends.

The monthly sales expectancy shown in the table at the top of this page is for the average retail radio store in the New York area. Your store may be smaller or larger than the average, but the table shows also the probable percentages of increase or decrease over 1940, and these apply regardless of size.

To understand how these figures were arrived at, let's review what happened last year. The chart at the bottom of the page shows for each month how 1940 sales compared with 1939.

Extension of Experience

The year 1940 started without material change, but in March there was a sharp decline both in radios and in total sales. Radios reversed this performance in April and continued strong for five months, but total sales remained below 1939 until August.

The principal explanation lay, in our opinion, in the exceptionally long and severe winter in the New York area. Some stores suffered as much as 70% declines in refrigerator business. Once lost, these sales could not be retrieved that season.

From August on, total sales showed only minor fluctuations to the year-end, but radios fell behind through the fall, and lost the gains of spring and summer.

The year as a whole was disappointing to many, in that it failed to produce a lasting follow-through of the strong year-end of 1939; for December of that year had yielded

total sales of 24% ahead of 1938, and radios 30% ahead. However, as was pointed out in our first 1940 budget article, a leveling-off point seemed to have been reached, and our sales plan was therefore set up more conservatively than the 1939 "boomlet" would have indicated. We planned total sales for 1940 to be 5% ahead of 1939, and radios 2½% ahead. Actually, total sales ended the year 2.2% behind, with radios 1.9% behind.

Optimism Justified

For the coming year, we budget radio sales to a 7% increase over 1940; that is, the 2% decline from 1939 is to be recovered, and a 5% additional increase obtained.

Defense spending, with larger payrolls, should result in expanding demand. Increases in cost of materials may occasion higher prices later in the year. And there are other favorable factors within the business itself.

The monthly distribution of 1941 radio sales as shown in the budget is made on the basis of the distribution of the last three years, with these modifications: The first months may be below their normal shares, in a carry-over from the

poor showing of the fall. The last months of 1941 should have corresponding improvements.

As for total sales, these are planned at an increase of 4.7% over 1939. This consists of the radio increase, which amounts to about 2% of total sales, plus a 1% increase from other merchandise, plus the recovery of \$1,600.00 refrigerator business (for the average store) lost last spring. This last named source of increase of course does not necessarily apply outside the New York area.

The monthly distribution of total sales, as with radios, is based on the past three years' experience, with the same modifications. The refrigerator recovery is allocated to March, April and May.

Modify to Measure

Keep records of your own performance and compare it with the budget.

If these plans are shown to be either too conservative or too optimistic for your business, modify them to suit your needs. But in any case, get the habit now of setting a goal, comparing results and adapting your operations promptly to changing conditions.

The LAST TWO YEARS Serve as Yardsticks

All Merchandise:

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1940	\$4,292	\$4,538	\$6,383	\$7,413	\$8,403	\$8,544	\$7,156	\$7,785	\$7,859	\$8,461	\$7,471	\$10,606	\$89,231
1939	\$4,297	\$4,544	\$7,218	\$8,246	\$8,949	\$8,755	\$7,173	\$7,356	\$7,871	\$8,441	\$8,002	\$10,429	\$91,281
Change %	+2.2%	+4.7%	-11.6%	-10.1%	-6.1%	-2.4%	-0.2%	+5.8%	-0.2%	+0.2%	-6.6%	+1.7%	-2.2%

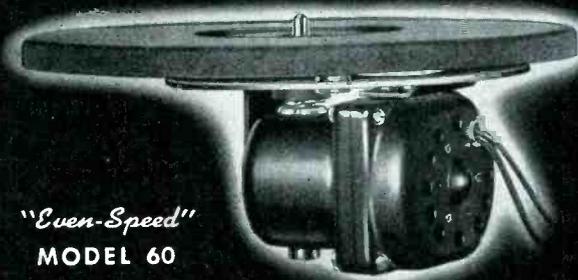
Radio only:

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1940	\$1,658	\$1,555	\$1,654	\$1,638	\$1,777	\$1,884	\$1,834	\$2,110	\$2,163	\$2,753	\$2,547	\$4,466	\$25,456
1939	\$1,626	\$1,631	\$1,997	\$1,421	\$1,863	\$1,885	\$1,864	\$1,960	\$2,642	\$2,852	\$2,755	\$4,940	\$25,936
Change %	+2.0%	-4.5%	-17.2%	+16.7%	+30.0%	+1.4%	+2.5%	+7.7%	-18.1%	-3.5%	-7.6%	-9.6%	-1.9%

The Choice of the Leaders



"Even-Speed"
MODEL 80



"Even-Speed"
MODEL 60

ALLIANCE
"Even-Speed"
PHONO-MOTORS

THERE'S AN "Even-Speed" MODEL FOR ALL COMMERCIAL FREQUENCIES AND VOLTAGES

SPECIFICATIONS:

MODEL 80. "Even-Speed" Model 80 is available for operation on 110 or 220 volt, 40, 50 or 60 cycle source at 16 watts input in 8", 9" or 10" turntable sizes (Model K for 110 or 220 volt, 25 cycle operation in 8" or 9" turntable sizes and is interchangeable in mounting with Model 80). Both are exceptionally quiet in operation—no gears—smooth, positive friction rim drive. Excellent regulation characteristics for uniformity of table speed. Amply proportioned bearings—large oil reserves. Forced ventilation for cool operation. Slip type fan precludes possibility of injury. Mounting plate maintains correct turntable height regardless of mounting board thickness.

MODEL 60, ALLIANCE'S FINEST PHONO-MOTOR. Available for operation on 110 or 220 volt, 50 or 60 cycle source at 14 watts input. Self-starting—maintains constant record speed. Designed for superior speed regulation under wide variations of voltage, load and temperature. Large bearings, ample oil reserves. Laminated bakelite helical cut gears for quiet operation, completely enclosed and protected. Forced ventilation for cool operation. Universal mounting plate maintaining correct turntable height with any thickness of mounting board. Available with 8", 9" or 10" turntable tops. Motor dimensions: Length 4 3/8"; width 3 1/8"; depth to mounting plate 3 1/4". Precision assembly for uniform production.

ATTENTION JOBBERS—Each motor and turntable unit is packed in a handy, individual display carton

IDEAL REPLACEMENT UNITS

The same dependability and performance that has made "Even-Speed" phono-motors the industry's first choice as original equipment is also making them the service man's first choice as replacement units.

The low cost of "Even-Speed" motors makes it more practical and more profitable to replace the entire motor and turntable unit, in case of trouble, than to attempt what may prove to be a difficult repair job. All Alliance phono-motors are easily and quickly installed, and fit practically all standard phonograph and combination models.

DEALERS AND SERVICE MEN

Ask your jobber or mail a postcard today for prices and complete information on the complete "Even-Speed" line of phono-motors. Address Dept. C.

ALLIANCE MFG. CO., ALLIANCE, OHIO

Export Address: 377-379 Broadway, New York, N. Y.
Cable Address: UNIONTEX, all codes used.



NO MOTORS BETTER BUILT OR BETTER ENGINEERED

Automobile ANTENNAS

Car

AUTO-

By

W. CARL DORF

NEARLY 4 million bright and shiny passenger cars were sold in 1940 pushing total registration to a new high at 27,300,000. Yet only a little more than 2 million automobile radios were sold in that year.

Only 8 million of all passenger cars now in use, roughly 30 per cent of the total, are radio equipped. Almost 20 million, 70 per cent of the cars on the road, have no sets.

These figures are printed for the edification of radio dealers who erroneously take it for granted that car dealers have the automobile radio market sewed up. Such is obviously not the case.

Both New to Buyers

While facts concerning the number of radios installed in brand-new cars by car dealers themselves are not easy to come by, it is known that a substantial number of machines slip through their hands each year without benefit of radio.

This "missed" business alone constitutes a substantial market for radio dealers, even if it is true that car dealers have "first whack." And the important thing to keep in mind is the fact that new cars are just part of the radio dealer's "oyster." There is a second "profit pearl" that radio dealers have, in turn, a decidedly better chance of finding.

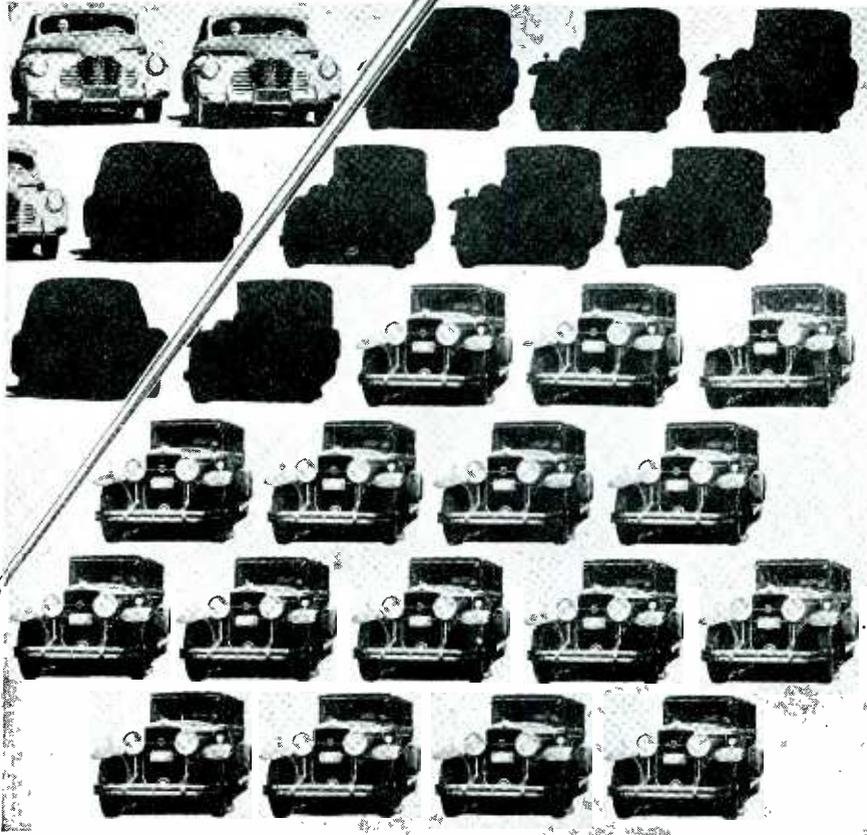
We refer to the so-called *used* car market.

According to best estimates, there were approximately 6 million used cars sold in 1940 (1½ used to 1 new) and automotive statisticians predict that this total will be topped in '41. Dealers who continue to pass up the automobile radio field overlooked the important fact that every time a man buys a car it is new to him,

Model	Antenna Location	Min-Max Length (Inches)	No. Sects.	List Price	Model	Antenna Location	Min-Max Length (Inches)	No. Sects.	List Price
Burton-Rogers Co., 755 Boylston St., Boston, Mass.					350H.C	H	50 "	3	
#570	Side C	27-72	3	2.75	366H.C	H	66 "	3	
#590	" "	39-96	3	3.25	460H.C	H	60 "	4	
#591	" "	36-100	4	3.95	248US	U	48 "	2	
#616	" "	27-72	3	2.75	350US	U	50 "	3	
#618	" "	39-96	3	3.25	366US	U	66 "	3	
#619	" "	36-100	4	3.95	460US	U	60 "	4	
#557	" "	18-57	4	2.25	248.SC				
#357	Roof	17-57	4	1.95	A.U.F	SCAUF	48 "	2	
#6E	C Edge	27-72	3	2.90	350.SC				
#8E	" "	38-96	3	3.25	A.U.F	SCAUF	50 "	3	
#40	H	26-50	2	1.45	366.SC				
#40B	Bracket	26-50	2	1.65	A.U.F	SCAUF	66 "	3	
Cons. Wire & Assoc. Corp., 512 S. Peoria St., Chicago, Ill.					396.SC				
1704	Side C	24-63	3	2.95	A.U.F	SCAUF	96 "	3	
1725	" "	37-92	3	3.75	460.SC				
1726	U	24-63	3	2.95	A.U.F	SCAUF	60 "	4	
1727	U	37-92	3	3.75	496.SC				
1708	U	26-50	2	1.25	A.U.F	SCAUF	96 "	4	
1707	H	26-50	2	1.25	4120.SC				
Fishwick Radio Co., 139 W. 4 St., Cincinnati, O.					A.U.F	SCAUF	120 "	4	
Effarsee	Underside	Jr.37	1	2.50	50P.PF	CC	50 "	3	
Effarsee	"	Sr.37	1	4.00	66P.PF	CC	66 "	3	
Twin Jr.	"	37	2	6.00	Radiant Corp., W. 62 St. & Barberton Ave., Cleveland, O.				
Galvin Mfg. Co., 4545 Augusta Blvd., Chicago, Ill. (Motorola)					A3PC	F, Side C	24-63	3	3.80
M-273B†	Front C	20-52	3		A3GM	U	24-63	3	3.95
M-234B	R A	25-60	3		A3UB	U	24-63	3	3.80
M-334B	" "	20-60	3		A5FC	F, Side C	1-60	5	4.50
M-434B	" "	18-40	3		A5GM	U	1-60	5	4.65
M-391B	Side C	24-60	3		A5UB	U	1-60	5	4.50
M-406B	" "	35-90	3		C-32	F, Side C	24-63	3	3.45
M-335B	" "	24-60	3		C-72	F, Side C	37-92	3	3.95
M-435	" "	24-60	3		C-82	F, Side C	29-101	4	4.75
M-344B	Front C	20-60	4		C-102	F, Side C	24-80	4	4.25
M-276B	F	5-47	3		C-9170	Side C	24-63	3	2.95
M-337B	C M	18-40	3		CB-1	Door U	24-44	2	2.25
M-338B	Front C	4-47	3		CB-2	Door U	24-63	3	3.25
M-340B	" "	4-40	2		CB-3	U	43-92	3	3.95
Insuline Cor. of Amer., 25 Park Pl., N. Y. C.					CC-4	C C & F	5	5	3.95
4540	C	23-49	2	2.95	CCW-1*	Side C Dis.	5-63	5	6.95
4541	C	23½-72	3	3.50	CD-32	F Side C	24-63	3	3.95
4570	F	3-50	3	4.45	CD-102	F Side C	24-80	4	4.95
4585	C-Dis.	3-50	2	3.75	CM-12	Side C M	29-59	3	4.95
4586	C-Dis.	3-60	3	4.25	CW-1*	Side C	24-63	3	5.95
4551	C	23-49	2	2.45	CW-2*	Side C	24-63	3	6.95
4566	C	20-65	3	2.95	CU-2	W	21-93	3	2.95
4555	C	23½-72	3	3.25	VW-2*	C C	21-53	3	6.95
4553	C	31½-96	3	3.75	Snyder, Inc., 813 Noble St., Philadelphia, Pa.				
4800	U	23-49	2	1.95	C3J		30-66	3	1.50
4801	U	20-60	3	2.95	C3L		30-66	3	1.95
4802	U	23½-72	3	3.35	C4L		36-96	4	2.60
4803	U	31½-96	3	3.75	C44L		36-110	4	3.50
J.F.D. Mfg. Co., 4111 Ft. Hamilton Pkwy, Brooklyn, N.Y.					M3L	Hood,A.H.	27-70	3	2.25
HG100	H	27-60	3	3.85	K3L	UV	27-66	3	1.95
UH100	U	27-60	3	3.85	B3M	UV	27-66	3	2.45
SC1000	Side C	27-60	3	3.50	United Motors Serv., Inc., Detroit, Mich.				
SC1000-84	" "	30-84	3	3.95	4191	U + H	23-52	2	1.95
SC1000-99	" "	35-99	3	4.30	4192	Side C	24-63	3	2.95
SC3000	Dis. Top	2-60	3	4.85	4193	Side C	35-92	3	3.75
SC4000	Semi-dis.	27-60	3	3.95	4194	Side C	24-63	3	3.50
SC5000	Dis. F	2-60	3	4.85	4195	Side C	24-80	4	4.95
SC6000	F	27-60	3	3.95	4197†	Center W	22-50	3	5.95
SC7000	Side C	27-60	3	3.95	4199†	Side C	24-63	3	5.95
SC9000	U	27-60	3	3.85	U. S. Metal Products Co., 128 Mott St., N.Y.C.				
SC10,000	Bumper	27-60	3	3.85	300	Center W	16-31	2	2.00
Noblitt Sparks Ind., Inc., Columbus, Ind. (Arvin)					Ward Products Corp., 1523 E. 45th St., Cleve. land, Ohio				
A27	Side C	28-66	2	2.60	E3-68	F, Side C	68	3	3.75
A28	Side C	38-93	3	3.30	E4-90	" "	90	4	4.50
A29	Side C	31-68	3	3.00	OB3-45	CCor F	45	3	4.25
A30	U.A.H.	30-48	2	1.75	OB3-62	" "	62	3	4.50
A32	CC	25-62	3	3.95	TD2-48	Upper & UAH	48	2	2.50
Philco Radio & Tele. Corp., Philadelphia, Pa.					TD3-68	Upper & UAH	68	3	3.35
91-0217	Side C	27-65	3	3.45	T2-48	Upper & UAH	48	2	2.25
91-0216	UAH	27-65	3	2.95	T3-68	Upper & UAH	68	3	3.00
91-0219	Side C	27-65	3	2.95	S3-66	F, Side C	66	3	3.75
91-0220	" "	26-88	4	4.25	5XXL	Side C	66	3	3.35
Philson Mfg. Co., 156 Chambers St., N.Y.C.					8XL	" "	93	3	3.95
250H.C	H	50 max	2		151L	" "	100	4	4.50
					B3-66	" "	66	3	2.85
					B3-93	" "	93	3	3.35
					C - Cowl	H - hinge			
					F - fender	W - windshield			
					U - underhood	A - alligator			
					CC - concealed cowl	M - mirror			
					Dis - disappearing	UV - universal			
					RA - rocket attachment	CM - center mount			
					* Mechanical wind-up.				
					† Crank-operated, inside car.				

Dealers *Don't* Have

RADIO Sewed Up



ADD the new car sales they miss to the used car sales they don't touch and you have a man-size market

farm it out if you are not. At any rate, you *sell* them.

Competition Less Keen

It seems to be the current consensus of opinion among auto radio dealers that there is now much less chiseling going on, in auto radios, than in any other radio line. They contend the dealer thus has a better chance to maintain list and obtain a real profit on his investment.

One dealer cited the example of the automotive accessory stores who, he said, cut prices on practically every product they merchandise, except auto radios. This is one article on which they demand and get full list. (Most auto sets sold in these stores are purchased on time, with carrying charges in some cases expanding up to 20%.)

Radio dealers, with "missed" new car business and used car sales to work on, *plus*, a tremendous reserve of people with cars that have never been sold the radio idea, have a worthwhile job to do.

YOUR MARKET—Each car pictured represents 1 million. Those above the diagonal division line illustrate probable 1941 new car sales while those below cover older machines that will also be on the road at the end of the year. Cars that are not "blacked out" represent passenger vehicles which will be without sets unless radio dealers sell them

whether it comes right out of a factory or from a used car lot.

He is wide open for a radio at the precise moment at which he buys a car, new or used.

No Longer Dirty

Heretofore some dealers have shied away from handling auto radios because of service and installation.

The answer to the latter objection, is to be found in the new sets, especially designed for quick and easy installation. New receivers are generally completely self-contained and designed to fit under the instrument panel of any car.

A profitable practice with dealers

who do not have the auto-radio service facilities is to farm out their auto installation and service work. In New York City, for example, there are several auto radio installers confining their entire business to this work. A number of retailers feed jobs to these concerns and charges are properly figured in with sale price. These dealers prefer this way of handling auto radio merchandising, as they are relieved of the service worries. To them an auto radio sale is now a "package sale" and is similar to selling a home radio or an electrical appliance.

So that solves the handling problem. You make your own auto-radio installations if you are set up for it,

QUESTION:

When Is An Old Car New?

ANSWER:

When Someone Buys It.

MORAL:

When a man buys a car, whether it is actually new or used, it's new to him . . . and he's wide-open for a radio

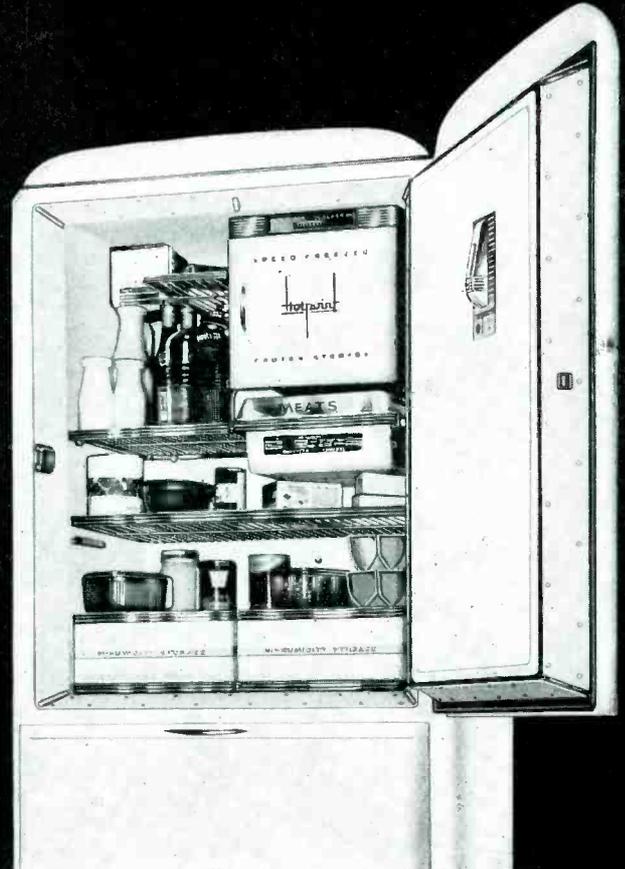
A Distinguished

By Every Yardstick—



PRICES
START AT
\$112⁹⁵

The DORIC DE LUXE boasts distinguished styling and beauty PLUS all the great Hotpoint convenience features. Built to last for years and years.



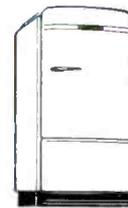
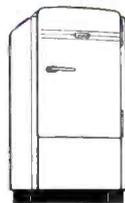
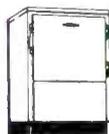
DORIC DE LUXE, the big new Hotpoint 7 cubic foot, full-family size refrigerator. New Butter Conditioner, Giant Bottle Zone, Hi-Humidity Compartment, Extra Bin for Dry Storage, plus many other great Hotpoint features.

See The New Models At Hotpoint Distributors Everywhere

Men'll cast their vote for that Giant Bottle Zone, too.

That new Butter Conditioner keeps either a chip or a pound smooth-spreading.

The extra bin for dry storage will win a neat housekeeper's heart. So will the Six-Way Cold Storage with MEASURED HUMIDITY.



SPECIAL
KITCHENETTE

SPECIAL
BUNGALOW

STANDARD
KITCHENETTE

STANDARD
NORMAN

STANDARD
DORIC

DE LUXE
NORMAN

Hotpoint ELECTRIC REFRIGERATORS

Lines of Refrigerators

A Great Refrigerator Buy

Pre-eminent in Style and Performance —and Loaded with Sales Features

CONSIDER why the great new Hotpoint line of refrigerators for '41 packs such potential profits for you. Consider *first* Hotpoint's eye-catching beauty—the line that's styled and built to last for years and years. Next, check into the many notable *plus* sales features that convince value-wise buyers that Hotpoint—*By every yardstick*—is the great refrigerator buy. Then find out how Hotpoint helps you cinch your profits by its amazing service-free performance. Three mighty good reasons why you'll want to know how, at once, you can be sure of "Your place in the sun in '41"—with Hotpoint!

Plus Sales Grow—and Grow!

Hotpoint's eye-compelling beauty brings buyers in . . . and the wealth of Hotpoint sales features sells them . . . Canny buyers appreciate the thrift of Hotpoint's Six-Way Cold Storage compartment with *Measured Humidity* . . . Hotpoint's Glass-Topped,

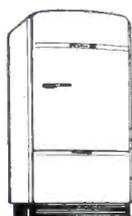


Talk crispier, tastier foods
and you talk a woman's language!

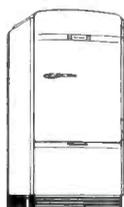
The HI-HUMIDITY compartment sure
helps close sales easier and faster.

Hi-Humidity compartment for keeping fruits and vegetables garden fresh . . . Hotpoint's Vacuum-Sealed Thriftmaster, Adjustable Height *Stainless Steel* Gliding Shelf, Pop-Ice Trays, Illuminated 16-Point "Radial Dial" Temperature Control and more than thirty other convenience features that spell *plus sales*. Get in touch with your Hotpoint distributor—today!

New Butter Conditioner is Big News: Hotpoint's new feature keeps a chip or a pound of butter smooth-spreading at all times. This appeals to men folks—is just another Hotpoint "plus" to make sales easier. Edison General Electric Appliance Co., Inc., 5680 West Taylor Street, Chicago, Illinois.



DE LUXE
DORIC



IMPERIAL
NORMAN



IMPERIAL
DORIC



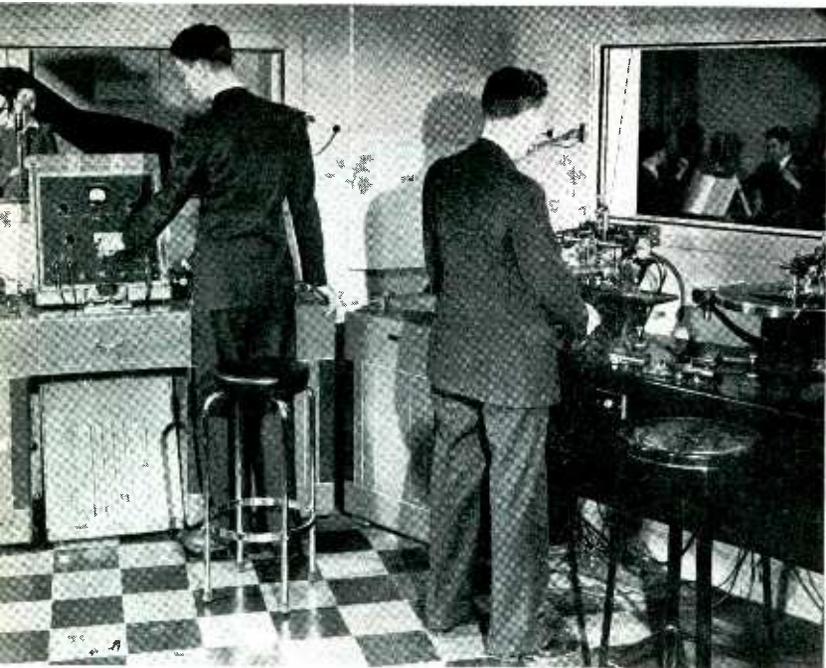
IMPERIAL
TUDOR



IMPERIAL
AMERICA

AND RANGES

WATER HEATERS • WASHERS AND IRONERS • CLOTHES
DRYERS • AUTOMATIC DISHWASHERS • ELECTRASINK



LATEST STUDIO — Has facilities for meeting all phases of recording

RECORDING Expands

THE RECORDING department of G. Schirmer, Inc., has, in the short space of 3 years, become a highly profitable part of that New York radio-music firm's business.

Schirmer's first recording studio was opened as an experiment in 1938. Set aside at that time was a curtained 8 by 12 room, equipped with a portable recorder and an upright piano. Initial expense for equipment was \$350.00.

Within a year, demands on this small studio were such that larger quarters and improved equipment had to be provided. The second studio measured 10 by 25 feet, was acoustically treated, accommodated 50 people. Operating figures for 1939 showed a 300 per cent gross sales increase over the previous 12 months.

The management, in reviewing its re-

ording operation originally launched as a side-line, discovered last year that the "tail was wagging the dog." So, in October Schirmer opened its present dual studios with an overall operating space of 1200 square feet.

Recording rates vary from \$1 (for one side of a 6-inch disc consuming one minute) to \$9 (for a double-faced recording taking 30 minutes).

Best present prospects are teachers, students, musicians. Many recordings are made of pupil's voices as a means of studying progress in public speaking. Music departments also present a constant need for recordings.

The recording fee should not be considered the only element of profit. A studio brings many new customers into the store, developing new prospects for home recorders, radios and equipment.

ORIGINAL STUDIO — With portable recorder and simple studio equipment



How to

SETTING UP envelope-sticker system.

Using automatic daily checks.

Computing turnover

By G. T. MOWBRAY

THE RELATION of balanced stocks to profit and loss is particularly close in record retailing.

Sales lost when records are not in stock are in direct ratio to the number of instances, the popularity of the individual items, and the element of time. Attempts to correct this condition by ordering best sellers "across the board" in quantity generally lead to additional losses through overstock.

The stock of each item, especially the fast movers, must be considered individually. But it is not possible, because of the time involved, to analyze each number daily with regard to the dozens of factors that may influence advancing or receding popularity. However, by close attention to such controlling influences it is not difficult to develop a "feel" of the current status and probable course of important numbers.

When puzzled, it is often helpful to check the performance of the artist's previous recordings, as indicated by the stock control record of previous sales.

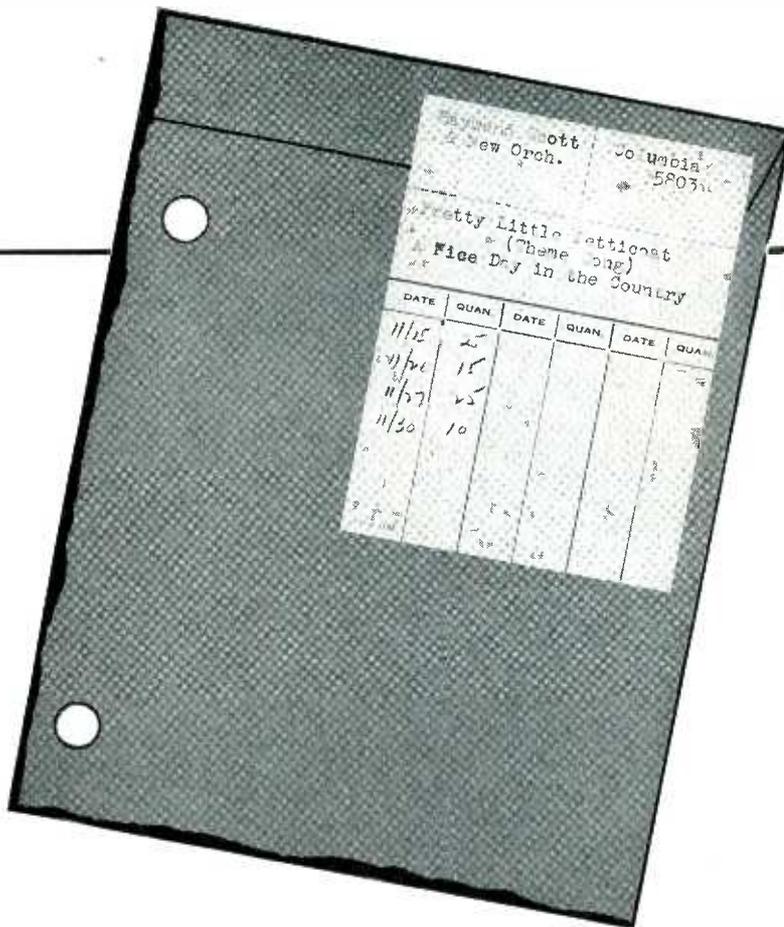
The Idea in Detail

The simplest system of stock control is the best. Complicated methods take time and often are neglected.

The method in most general use requires only a stock envelope for each separate number and a stock control sticker which is applied to the upper right-hand corner. This sticker (see illustration) has space for the record number, the titles, and the artist's name.

Orders are listed, as issued, in a

CONTROL *Record Stocks*



SIMPLEST METHOD BEST—Here's a sticker in place at the upper right of an envelope, illustrating how little paper work you have to do

column with headings for the date and quantity ordered, also date and quantity received. (If the stock consists of only one record of a number, it is kept in the stock envelope. If two or more, the first record is put in the stock envelope with additional stock immediately to the right.) Obviously, the total receipts, less stock-on-hand, indicates the quantity sold.

When the total of records sold, on hand, and on order, reaches the point of average sale for a specific artist the time has arrived for especially careful ordering and, once more, judgment is called into play.

A simple method of determining which records have been sold is to mark the record number on each cover when putting stock in the racks. When a sale is made, the numbered cover is removed and replaced with a plain one. The numbered covers, having been kept together, are recapped at the end of the day and form a basis for ordering stock that requires replacement,

eliminating the necessity of checking the numbers of which there have been no sales.

That provides a time-saving method for a daily check of the items that are moving, but it is equally important to know when movement has stopped, or slowed down to the danger point. A frequent check of all stock subject to obsolescence is the only means of discovering the development of surplus.

Maximum profits are dependent on ability to keep dead stock within the limits of manufacturers' return allowances, and the rate of turnover.

Some Points to Watch

Computation of turnover by a comparison of monthly sales with stock-on-hand in units or dollars may be deceptive. The books may show a perfect balance between these factors, still much of the stock may be moving slowly and much of it may be dead.

This is possible because a substantial part of the volume usually

comes from the sale of fifteen or twenty leading records and it is not unusual for such items to turn over eight to ten times a month in stores having a local source of supply. Obviously many of the other records can turn very slowly or not at all, and still permit what might appear to be a fine average rate.

All stock subject to eventual obsolescence must be kept in line with sales potential from the very beginning. However, a new dealer facing established competition, must have broad enough stocks of "standards" to compete successfully, and cannot expect a regular rate of turnover on this merchandise while the business is in a formative stage.

Cutting Shipping Costs

It is not practical to order fewer than ten records because below this level, transportation, insurance and service charges absorb too great a proportion of the profit.

The smallest order that can be shipped with reasonable expense depends on the distance from the source of supply. This should be determined and orders based on the maximum frequency possible with average economy. In this way ordering is geared to current sales and

(Continued on page 72)

RECORD RETAILING Tip

WHEN ORDERING discs from distributors list them according to label, in numerical sequence under each heading, and leave sufficient margin for check marks.

DELIVERY SPEED will in this way be increased. And checking will be simplified when the merchandise arrives.

TRADE EVILS

Spotlighted

**MORE LETTERS from dealers about
dirty discounts and cooperative advertising**

LATE LAST SEASON *Radio Retailing* published two articles lampooning the *Discount Racket*, followed these up with another about *Cooperative Advertising* abuses.

Letters from the trade poured in and the first of these were printed in the January issue. And they are still piling up.

Here are more, selected at random from this month's mailbag:

Deceptive Advertising

It seems to me that if you fellows really want to do something for the little business man like myself and thousands of others throughout the country you would do everything in your power to prevent such rotten tactics as are apparent in the ads I am sending you with this letter.

This same firm has been running these ads for the past two or three weeks and it is my supposition that it must have the consent of the manufacturer in doing so.

I own a shop of my own and carry a fair stock of sets but I can't compete with such tactics as these. You and I know that these are close-outs but the general public doesn't realize this fact.

The first question a customer asks me when I try to sell him is, "What is the down payment?"

When I tell him he comes right back with, "I can get it for nothing down and fifty cents a week."

Here in Dallas some of the jobbers won't even sell us a radio unless we have one of that particular model in stock. If I have a sale for a \$200 ——— combination for instance, I can't even buy it from the jobber for cash unless I have one on my floor. How many dealers are financially able to stock the complete ——— line?

It seems like a dirty deal to me. What do you fellows think? After all we dealer servicemen are the backbone of the radio industry.

Do the manufacturers know about these things? Do they approve of it?

Are they partial to the big department stores? Who is it contacts the customer in his home and tells him he has a darn good radio or a damn poor one?

I think they are using poor judgment in letting any department store use their trade name in connection with this price-cutting, throat-cutting scheme.

DALLAS, TEXAS JACK SLATON

Who Pays For Ads?

We are very much interested in your

cooperative advertising article on page 15 of the December issue. . . .

There is a chain-operated store here in Pontiac . . . This firm started as a radio store several years ago and have come to the point whereby they purchase watches for \$3.50 and sell them for \$35.00 and goodness knows what for diamonds . . . it's impossible for the legitimate dealer to compete on this basis as he cannot pass along the losses from one department to another that nets a thousand per cent profit.

I have been told on reliable authority that this firm does not actually pay one cent for their advertising, but that the manufacturer assumes the entire amount.

We get from the manufacturer a 5% allowance on a year's purchases and with this amount it would be impossible to run such ads as they do.

Personally I don't see how it is possible for a small business man to succeed these days, he can't borrow from the banks and take advantage of bulk purchases and discounts.

The banks can't loan money because the Federal government takes every cent of their surplus money and compels them to purchase government bonds.

PONTIAC, MICH. W. C. KLINE

More About Discounts

This is my first "letter to the Editor" that I have ever written but I feel quite strongly about one of your articles, "A Dealer Tilts At The Discount Racket."

I have had some strong opinions on this for several years and have had the pleasure of fighting against this racket whenever the opportunity arose. This is the greatest threat against the radio dealer today, as it cuts his profit down to where he can't give the customer the service that he should get with his new set. It will eventually cut the manufacturers throat for him if he doesn't come to the dealers' aid.

The biggest source of this trouble we have here is the service and post stores

at the Navy and Army posts. They sell standard make radios at 10% above cost, carry no stock and offer no service. Of course this is supposed to be to military personnel only but what's to prevent a friend in the service getting it for the customer? *Nothing!*

This applies not only on radios but everything, except some few items that are rigidly controlled by the manufacturer such as ——— watches. We have tried to stop these sets getting to the exchanges but if they can't get them locally they get them through some other post. The only way that this can be controlled is by the manufacturer.

We have often serviced these sets free of charge during the guarantee period, even though we were not responsible, simply to keep customer goodwill. The manufacturer should not expect us to carry all of his battle for him without help. Chiseling dealers and distributors should be cut off from the source of supply and kept off. Dealers should refuse to buy from a distributor who sells to these places. . . .

The dealer needs more discount to take care of the trade-in problem and he must give service on the sets he sells if he expects to prosper. . . . I think that the manufacturer can clean up the situation, using a "big stick" if necessary.

PENSACOLA, FLORIDA LEON S. LOEB

FIRST STEP?

Seventy-five radio and appliance dealers in Cincinnati have formed an association to combat industrial discount sales to employees and distributor "retail" sales

Dust off
inactive customer
lists

Deepfreeze

makes 'em LIVE prospects again!



Happy days are here again! Profitable days for home electrical appliance dealers with the vision to see and the spark to act. For DEEPFREEZE—home unit for “quick-freezing” and storing frozen-fresh foods—gives American families a new luxurious way of living, for less than they’ve been accustomed to spending.

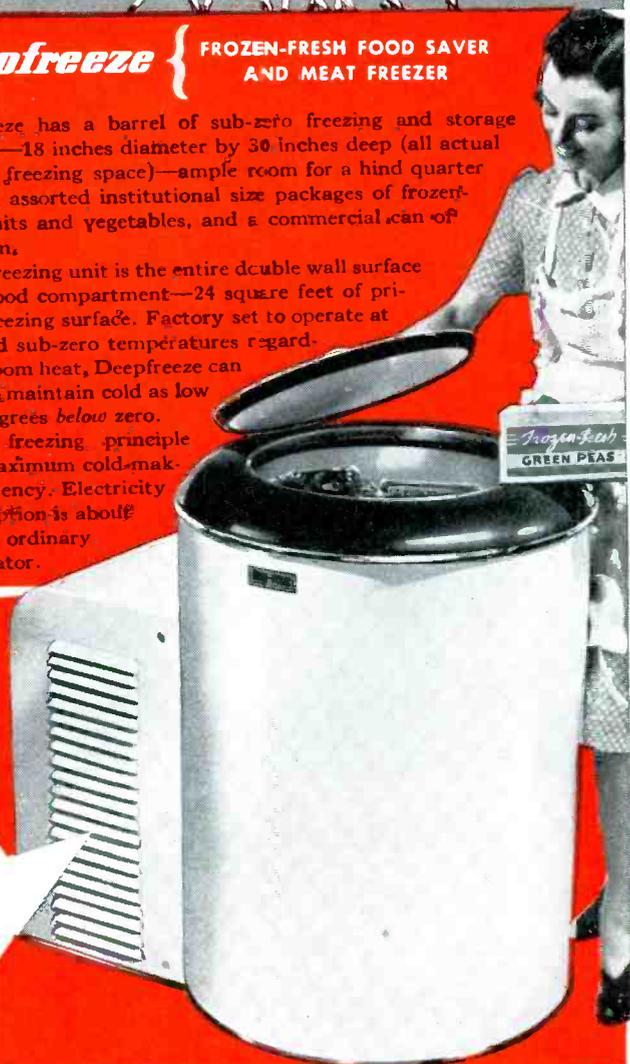
Deepfreeze creates a brand new major appliance market—opens a new opportunity for long profit sales and bankable cash profits. It appeals to every family desiring better tasting, more healthful foods and lower meat and grocery bills!

Deepfreeze { FROZEN-FRESH FOOD SAVER AND MEAT FREEZER

Deepfreeze has a barrel of sub-zero freezing and storage capacity—18 inches diameter by 30 inches deep (all actual primary freezing space)—ample room for a hind quarter of meat, assorted institutional size packages of frozen-fresh fruits and vegetables, and a commercial can of ice cream.

The freezing unit is the entire double wall surface of the food compartment—24 square feet of primary freezing surface. Factory set to operate at zero and sub-zero temperatures regardless of room heat, Deepfreeze can be set to maintain cold as low as 20 degrees below zero.

New freezing principle gives maximum cold-making efficiency. Electricity consumption is about same as ordinary refrigerator.



Cash in ON THIS RICH VIRGIN MARKET

No Trade-In Worries!
No Chain Store Competition!

Deepfreeze principles of construction and cold-making are exclusive and unique. No worthy competition exists to cut into profits or disturb price structure. Ask for your copy of our informative booklet: “Today’s Opportunity for Appliance Dealers,” that tells how you can sell your list of customers all over again.

Act Quickly— GET THIS BOOK NOW

Maybe your territory is still open. Do not delay in securing detailed information about this valuable franchise!

Deepfreeze Division Motor Products Corporation
2303 Davis Street, Dept. 40-RT, North Chicago, Illinois
Please send booklet: “Today’s Opportunity for Appliance dealers.”

Firm Name _____

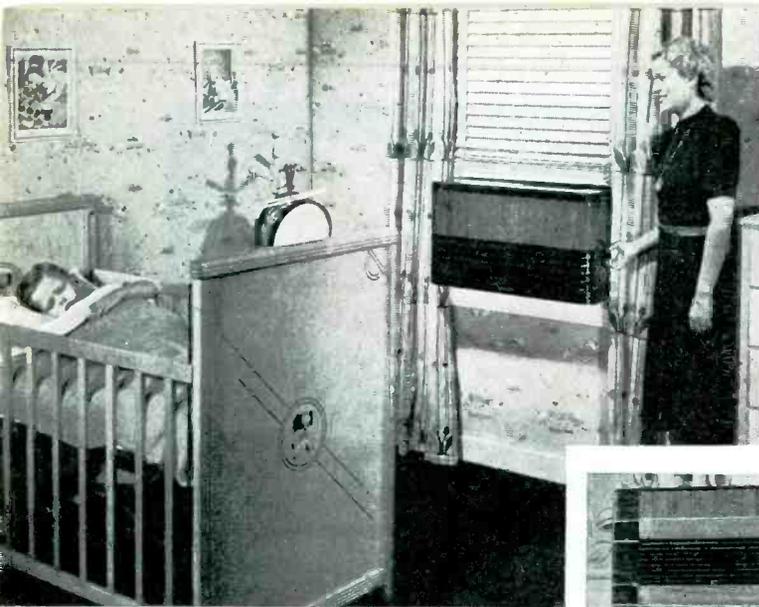
Street _____

Town _____

State _____

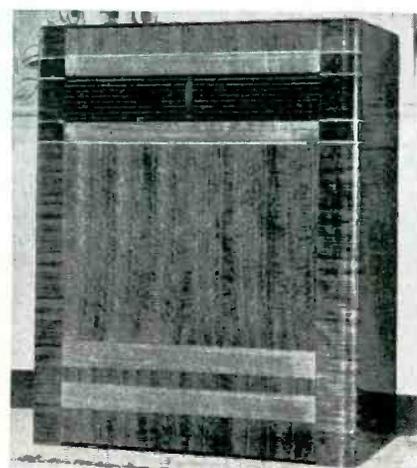


FORCE



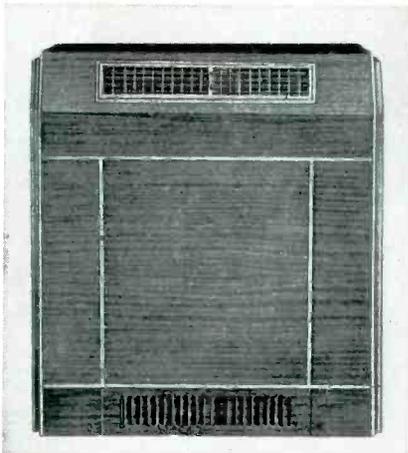
PHILCO-YORK — Heavy-duty model 91 (below) is designed to completely air-condition large living rooms, business offices and professional waiting rooms. Humidity removal capacity $1\frac{3}{4}$ quarts of water per hour. No plumbing required. Dimensions $39\frac{1}{2}$ by 31 by $15\frac{15}{16}$ inches

WESTINGHOUSE—Mobilair model WB 06-R (above) window mounting, "reverse cycle" air conditioner, cools or heats at the turn of a dial. Filters and circulates 200 cubic feet of air per minute. Cooling effect 6000 Btu, heating capacity up to 9200 Btu. Dimensions $15\frac{1}{8}$ by $27\frac{3}{4}$ by $26\frac{1}{4}$ inches



6 New

AIR-CONDITIONERS



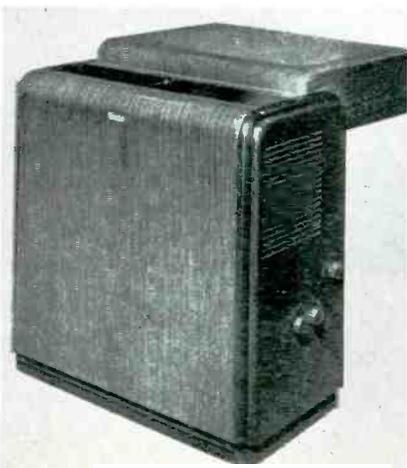
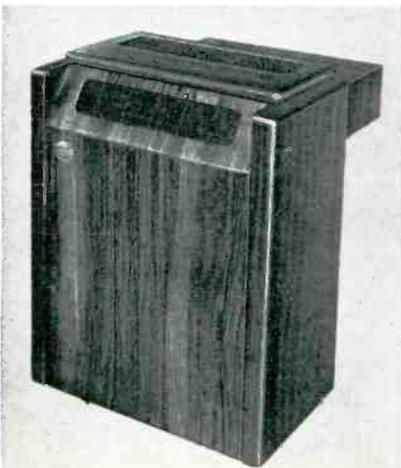
AIRTEMP—Self-contained room model FC-60 for floor mounting. Cools, dehumidifies, filters and circulates the air. Insulated for sound absorption. Uses two-cylinder radial compressor. Btu Hr. capacity 5200. Measures $31\frac{1}{2}$ by 35 by $18\frac{3}{4}$ inches

KAUFFMAN—This room cooler available in 3 sizes and capacities. Features noiseless operation (all moving parts mounted on rubber vibration dampeners), easy installation (no drain connections) and economical operation



GENERAL ELECTRIC—Type FB-50 has gross Btu capacity of 6600. Room air circulation 200 c.f.m. Measures $29\frac{1}{2}$ by $39\frac{5}{8}$ by $18\frac{1}{16}$ inches. It is equipped with a modern control panel of dashboard style with indicating pilot light

CARRIER—"Weathermaker" type 50G air-conditioner provides for year-round ventilation, plus air warming if desired. Completely portable requiring only a plug-in connection to the supply line. Capacity to 8150 Btu per hour. Measures $32 \times 31 \times 16\frac{1}{2}$ in.



THERE ARE TWO WAYS to handle refrigerator prospects. One is to make them or break them. The other is to play around with them all summer. The first way is right.

And you're getting that, mind you, from a guy who used to be notorious for playing around with them! It used to break my heart to miss out on a box prospect if I got so much as a smile from the lady. Honestly, I have played around with some of them until they thought I was a member of the family. "Never say die Oden" they used to call me.

True, I have worn some of them down on the ninth or tenth call—but the point is that it wasn't worth the effort. The time could have been spent to better advantage calling on fresh prospects.

Shoot the Works

Except in cases where there is a legitimate cause for delay, one call—where you see everybody concerned, and where you shoot the works—is enough to sell a box. If you don't sell it on that call, the chances are you never will.

Believe it or not, I actually used to *save* prospects. I'd always have a few on hand, very good ones (as a sort of measure of security!), with which I took my time about *forcing* the issue.

Then one day I realized why I was holding back. It was simply because, knowing they were good, I was afraid to call on them for fear that I *might* miss out on them!

That is why I can tell you, with such assurance, that the thing to do is *see* them. Fail on them, if you

For SALESMEN

No reader has yet accused Caswell Oden of suggesting "Pollyanna" methods. He is, in fact, sometimes considered "hard-boiled" . . . but his suggestions work.

'EM and Forget 'Em

By

CASWELL ODEN

must, but *see* them. Then, after you have seen them, after you have done your best, forget them and think about the fresh ones.

Don't Play Around

This playing around with prospects, incidentally, is what the man with a restricted territory has to guard against.

He knows half the people in his territory by name, if it is small, and always has a lot of irons in the fire; and, true, some of the irons are always turning into sales. But, broadly speaking and forgetting special cases, he spends so much time thinking about, worrying about, nursing these prospects, these irons—that he'd be better off seeing, selling, failing on and forgetting, a certain number of prospects each day.

Not only should we see people, a lot of them, but we should force the issue with them, every one of them. And this forcing the issue applies, also, to the floor man who, having failed to sell on the floor, is told by the prospect that he will be back, or think it over—but doesn't wish to be bothered at home. He *should* be bothered at home, if we know where that is.

I say that *not* so much because we shouldn't give a hoot what they say (although we shouldn't)—but because they don't *mean* what they say. Why is this true? I haven't the slightest idea.

Few People Object

Of course, we should be tactful. We shouldn't *deliberately* disregard the request. But, force the issue we must. We just "happened to be in

That's because Oden, whose latest article written specifically for salesmen appears here, learned the facts of life "the hard way" . . . still earns his living selling.



REFRIGERATOR PROSPECTS are sometimes so good you are tempted to keep calling back. Maybe you'll make a sale in the end but the same number of calls on fresh prospects will usually produce more business

the neighborhood," and thought we'd drop in to see what he'd decided to do about the box.

If you haven't been following up these don't-bother-me-at-home walk-ins, you'll be amazed to discover how many of them don't even *remember* what they told you—or, if they do remember, don't mention it. Maybe this is because *they* realize that, since they bothered you in the store, you have a perfect right to bother them at home.

Of course, there are a few who remember, and remind you. But the

worst they usually give you is, "Oh, so it's you!" with anything from mild chagrin to genial reproach. "I thought I told you I'd let you know."

"I know you did, Mr. Brown. But there are a couple of things here I forgot to mention. Do you mind if I come in."

Now, I ask you, how can Mr. Brown get sore? You wouldn't have disregarded his request, ordinarily, but you "forgot" something. Naturally, you have to come around and tell him about that too. (What did you forget? Heaven knows, unless it was the carrying charges! You figure that out).

Anyway, after you are in the house, you can try to close again. But whether you succeed or not is beside the point. The point is that you have *seen* Mr. Brown, you have *forced* the issue.

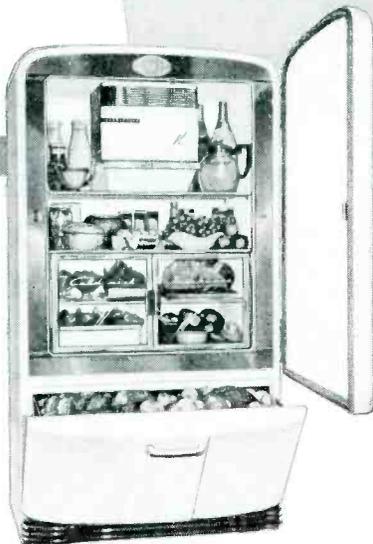
When you walk out, *you are ready for your next call.*

WESTERN

Send the following message, subject to the terms on back hereof,

ELECTRIC APPLIANCE RETAILERS, U. S. A.

WITH CARLOAD ORDERS FROM RETAILERS
OF A YEAR AGO . . . THE SECOND
PROGRAM IS ALREADY A PROVED



What Kelvinator's
long-range Program of
Planned Distribution
and Manufacturing
means to the Retailer of
Refrigerators and Ranges



THE long-range Kelvinator program, which this year enters its second period, according to schedule, could only have been created by a "retail-minded" organization.

That fact is at one and the same time Kelvinator's most valuable possession and the Kelvinator franchise holders' assurance of continuing and expanding profits.

One by one Kelvinator has faced the problems of refrigerator and range retailers—haphazard

step-up pricing—too many retailers—high prices—complacent engineering and product planning—too many models. And, one by one, Kelvinator has sought solutions.

Fortunately for Kelvinator, this "attitude of Mind" is perhaps the one thing in business that cannot be copied.

It helps explain the fact that Kelvinator for nineteen forty-one is, any way you look at it—"the hot line—and the hot franchise".

UNIQUE

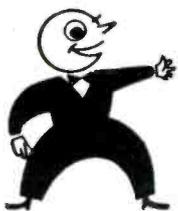
which are hereby agreed to

AILERS MORE THAN DOUBLE THOSE
STEP IN KELVINATOR'S LONG-RANGE
SUCCESS . . .

Check These Kelvinator Franchise Advantages Against Any Other

- 1 EXCLUSIVE EXTRAS . . .** No other refrigerator offers the exclusive new Magic Shelf—the Stainless Steel Cold-Ban—the Glass-enclosed Cold-mist Freshener cooled by coils within the walls of the refrigerator. And the 1941 Kelvinator Ranges offer new, exclusive features at the lowest prices in history.
- 2 STEP-UP PLAN . . .** A logical step-up plan based on the actual retail value of each added feature. The higher priced models, in both refrigerators and ranges, are easy to sell.
- 3 NEW LOW PRICES . . .** Last year Kelvinator's new price policy revolutionized the industry. This year, step number two in our long-range program reduces refrigerator and range prices even farther, and greater values have been built into every model in the line.
- 4 HIGH UNIT SALES . . .** Last year the average of 80 per cent of all Kelvinator retailers' sales was \$160—which we believe sets an industry record. With this year's amazing step-up plan Kelvinator retailers will again sell an overwhelmingly big per cent of higher-priced refrigerators and ranges.
- 5 SIZE . . .** One of Kelvinator's most important extras is size. Six cubic foot refrigerators are now six and three-quarter cubic feet—and eights are eight and three-quarter cubic feet—thanks to Kelvinator's new cabinet construction. And all ranges have big, over-size ovens.
- 6 SELECTIVE MARKETS . . .** Kelvinator's 1940 policies, carried forward into 1941, have earned for Kelvinator the reputation of putting into actual practice—"a market for every dealer—a dealer for every market".
- 7 FEWER MODELS . . .** By concentrating on the models people really want, Kelvinator has reduced its refrigerator line to eight models—its range line to three—and thus reduced the retailer's investment to a minimum and simplified his selling problem.
- 8 SERVICE-FREE . . .** The Polar-sphere Sealed Unit has set a record for reliable performance. Of the hundreds of thousands of Kelvinator refrigerators sold last year, less than one-half of one per cent were returned to the factory for service.
- 9 REPLACEMENT SALES . . .** The new and radically different 1941 Kelvinator Moist-Master with its glass shelves and Cold-mist Freshener, offers the most powerful replacement incentive in years. And every 1941 Kelvinator is a brand new model. Not one is a relabeled carry-over from 1940.
- 10 ADVERTISING AND PROMOTION . . .** The biggest campaign in Kelvinator's history is already under way with four-color magazine advertising—key city newspaper and transcribed radio spot announcements—new style billboard posters and complete cooperative advertising materials. Selling and product literature is printed in full-colors.
- 11 STOCKING . . .** Kelvinator's Redisco Plan for 1941 provides the most flexible and liberal method of stocking refrigerators and ranges you have ever been offered.
- 12 PLANNED DISTRIBUTION AND MANUFACTURING . . .** A long-range program developed by a "retail-minded" organization to help retailers build an increasingly profitable business.

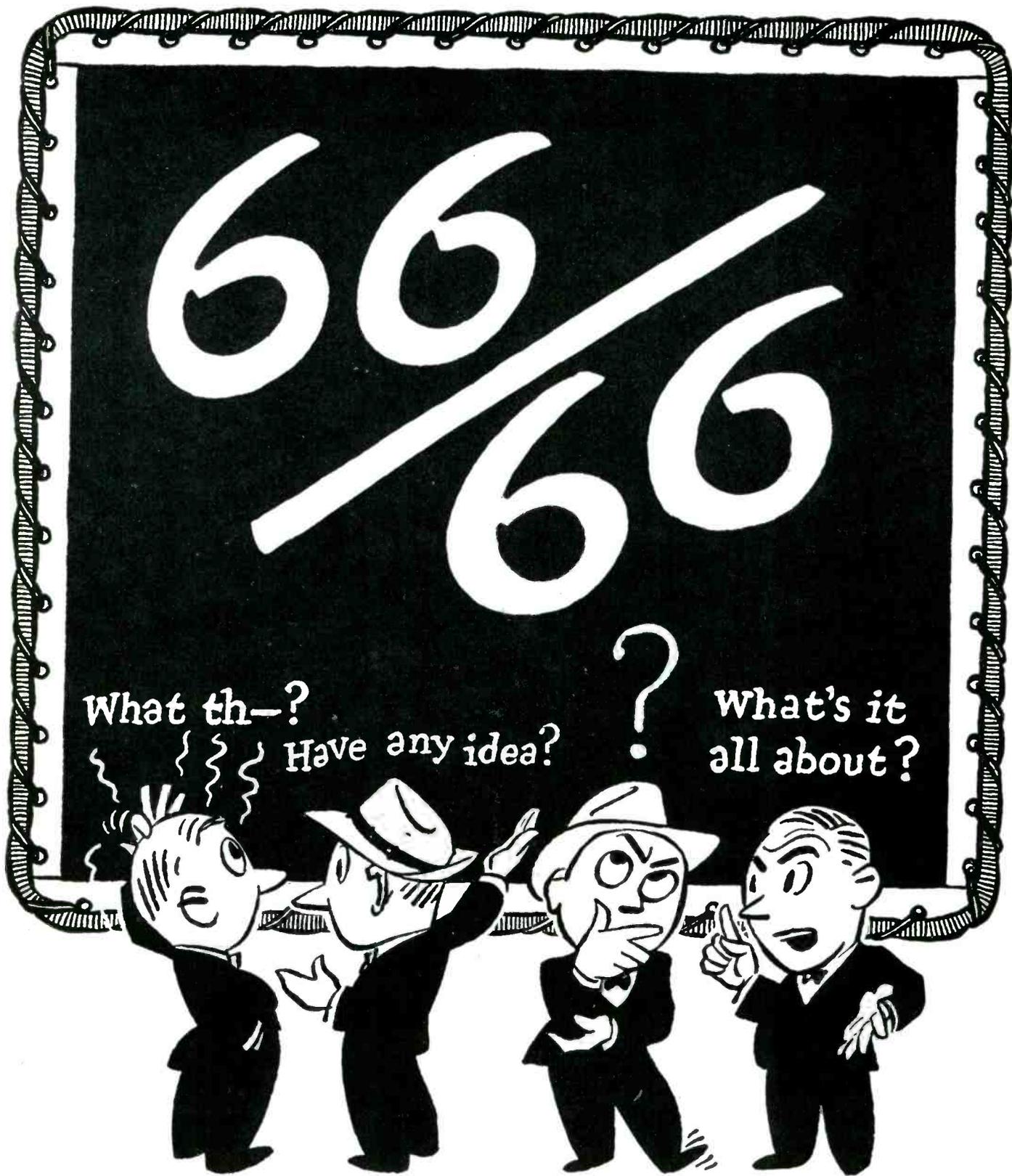
Kelvinator Division, NASH-KELVINATOR CORPORATION, Detroit, Michigan



Get
More

Get

KELVINATOR



Algebra—? No! Numerology—? No! And not a "Numbers" Game! But it is a sure-fire new money-making BUSINESS Formula!

Your RCA Tube Distributor will have the answer soon

CONTACT *Pickups* for Cash

CONTACT PICKUP and amplification of individual musical instruments is developing into a sizeable business, one that radio and music and sound dealers may with profit cultivate.

First, let's consider the band situation.

In some modern dance bands the "strings" are quite likely to be a secondary consideration in the demand for volume. Yet the stringed instruments offer definite possibilities for novelty effects which increase an orchestra's reputation for versatility.

The instrumentalist who can step up the relatively soft-voiced output of his strings to the higher volume level of some of the other instruments becomes potentially a more important part of the ensemble, with benefits to himself and the band as a whole. He is therefore a logical prospect for the sale of either a separate pick-up which can work through one channel of the main amplifier (if one is used—there being mixed at a relatively higher level comparable with the normal levels of the other instruments) or for a complete pick-up and individual amplifier combination entirely independent of the main amplifier system.

For soloist applications, this latter equipment serves equally well, giving any instrument ample output to fill even a large hall when required. Under such conditions the inclusion of a foot-pedal operated volume control provides extremely wide dynamic control without the technique limitations imposed when it is necessary to play an instrument continuously at the limit of its unaided output.

Not Just Theory

All this is not just theorizing. Thousands of musicians have already equipped themselves with individual pick-ups and amplifiers—and more than one orchestra and band has been made up entirely of such individually amplified instruments. Equipment sales for this purpose consist of amplifiers, microphones or pick-ups, foot-operated volume controls and loudspeakers.

One of the most important devices for this service is the contact type

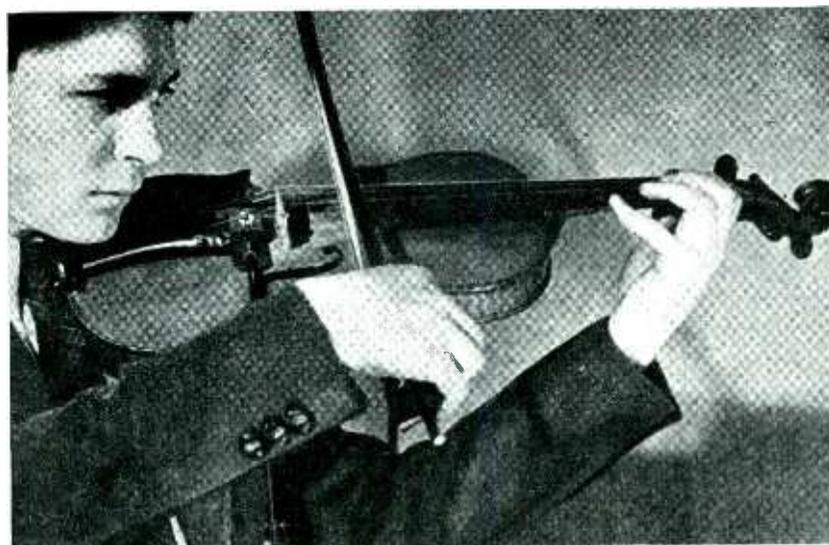
By

S. GORDON TAYLOR

microphone. Attached to the body or sounding board of a stringed instrument, it will pick up only the output of that instrument, free from the influence of others nearby or undesirable acoustic conditions of the surroundings. Such a pick-up arrangement is not subject to acoustic feedback. The loudspeaker can therefore be placed close to the instrument so that, to the audience, the music comes naturally from its source rather than from the ceiling or sidewalls as is the case with the usual arrangement where speakers are placed remote from the sound



▲
PIANO—In the Grille of the Hotel New Yorker, a tiny contact pickup is mounted *inside* the piano. That knob, just above the keyboard, adjusts volume



▼
FIDDLE—One contact pickup, for the violin, is mounted just behind the instrument's bridge, its output power regulated by foot-pedal control

source in order to avoid feedback.

These pick-ups, such as the Amperite "Kontak" unit shown mounted on a violin in one of the accompanying illustrations, have the added advantage that they can be instantly attached to any existing piano, guitar, banjo, violin, etc., without in any way damaging or defacing the instrument.

Extra Business

Even where an orchestra or band may already have regular sound equipment it often represents a good prospect for one or more of these contact pick-ups. Fed into one channel of the main amplifier, the leader can emphasize a stringed instrument at will by altering the mixing set-up at the control panel, without the necessity for physical shifting of either the regular microphones or the instrumentalist.

Large orchestras and "Name bands" are excellent sales prospects for this accessory equipment. Musicians and leaders are, as a rule, unversed in the more technical aspects of sound equipment and its detailed applications. They welcome the assistance and advice of a well qualified sound man and the entré thus gained facilitates sales of additional equipment to both the leader and individual musicians.

New 1941 Advanced Design **PHILCO** **REFRIGERATOR**

--the Sensation of the Industry!

OUTSTANDING ATTRACTION AT FURNITURE MART!

The display of new Philco Refrigerators at the Furniture Mart in Chicago is the high-spot of the show! The eye-catching beauty and easily demonstrated advantages of the new Philco make it a sensational standout wherever it is exhibited!

MOST SALEABLE FEATURES EVER OFFERED!

Only Philco offers you the Conservador... plus separate compartments for Dry Cold, Moist Cold and Frozen Foods... the amazing new Philco Super Power System that features SUPER-FINISH... the numerous other services that bring new modern benefits to the housewife... all saleable features she can instantly see and appreciate!

CONVENTION ORDERS DOUBLE LAST YEAR'S!

Yes, at the recent National Convention in Chicago, orders for the new 1941 Philco Refrigerator *more than doubled those of last year's convention!* This amazing new Philco, with its new beauty, new, exclusive services, new dependability and economy will sell itself on sight to your customers, too!

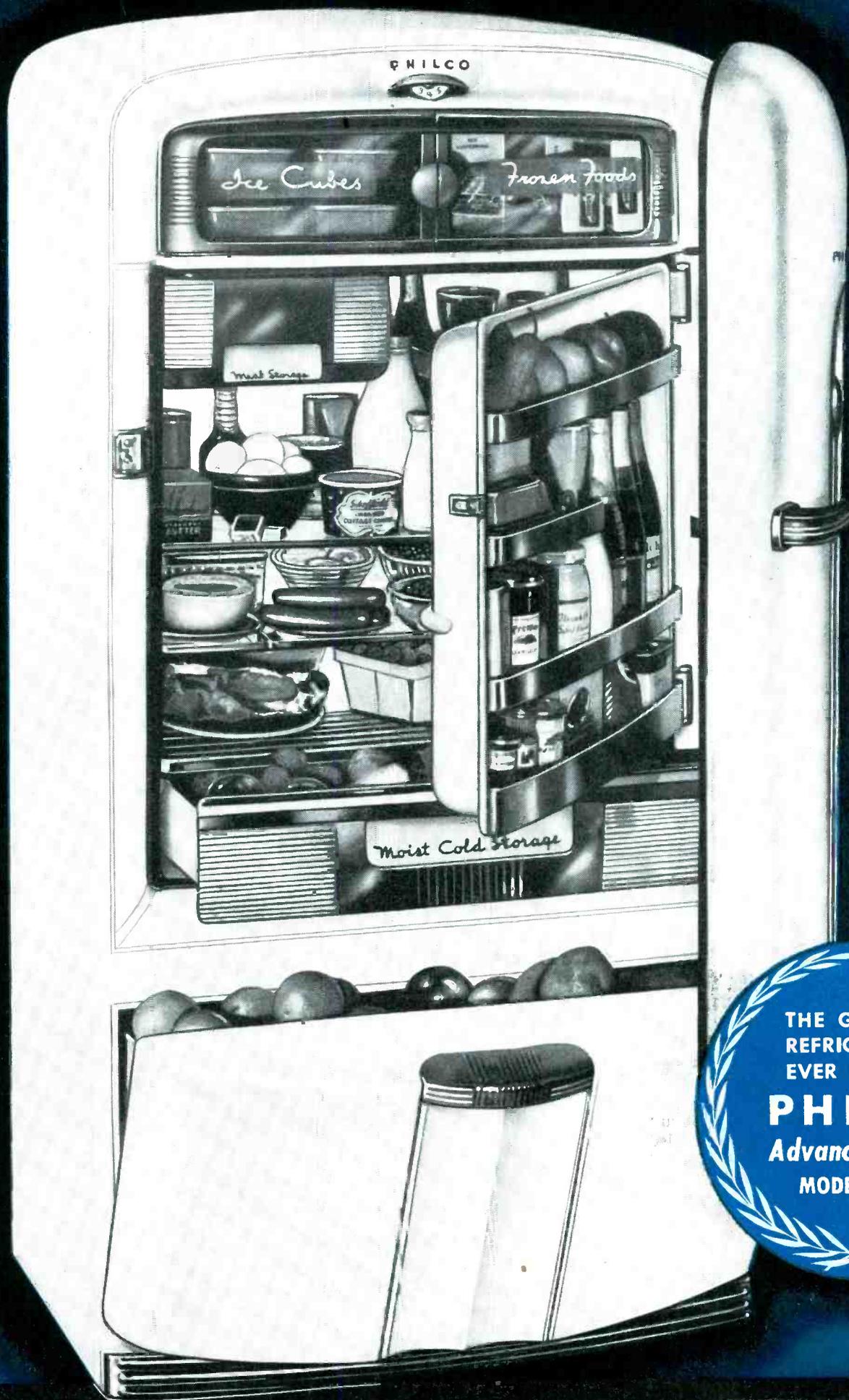
SMASH HIT AT DEALER MEETINGS!

During the past few weeks dealers all over the country have met and marvelled at this new creation of Philco engineering genius. The amazing number of orders placed by dealers at these meetings is real proof of their enthusiasm over the 1941 Advanced Design Philco Refrigerator! It's a Refrigerator that will *make more money for you* because its exclusive, visible sales features give you a better chance to use your talents as a salesman!

See Your Philco Distributor

Don't wait! See your Philco Distributor or call him now. Get set up for the biggest refrigerator year you've ever had... with PHILCO!

PHILCO ALL YEAR 'ROUND . . . the



THE GREATEST
REFRIGERATOR
EVER BUILT . . .

PHILCO
Advanced Design
MODEL MAH-7

Most Valuable Franchise in the Appliance Field!



Selling **INDUSTRIAL** *Accounts*

By HAROLD F. JENKINS

Fred C. Harrison Co., Elmira, N. Y.

MANY PARTS DISTRIBUTORS either overlook or deliberately shun industrial accounts. Actually, the amount of business that can be obtained both in factory equipment such as call systems, amplifiers, photo-electric installations, and in the sale of small parts such as resistors, condensers, and other items used in the manufactured products, is very lucrative.

Our company has worked out a system somewhat at variance with the usual practice in selling such accounts.

In Through Purchasing Agent

Having tried the standard practice of making a call on the purchasing agent at regular intervals, we found that our salesman had to cool his heels in the waiting line for hours before obtaining an interview.

Other salesmen from distant points were making their scheduled calls. Some of these men planned on a day or two spent at the plant to obtain orders. Many had travelled hundreds of miles, while our man was more or less local. We felt that these other sales people, after larger orders than we could expect to obtain in our particular field, and having travelled greater distances, really had the preference in time spent with the purchasing agent.

Too, our experience in these early days showed us that a factory

purchasing agent is a very busy man. Outstanding was the knowledge that, if we could give the concern a better service, with a minimum of the purchasing agent's time, we could obtain greater business as a result.

So, our present plan is a simple one, but very effective. In contacting a new industrial account, whether in our own city, or nearby towns, we first telephone the plant purchasing agent, requesting an interview at some time to be specified by him. We casually mention that we would like about an hour for this talk, and are willing to come at any time convenient to him.

Sees Chief Electrician

Upon keeping this appointment, we first explain what lines we have to offer. Then, we hit the keynote, by explaining that our service is different and designed to be of greater help to him with less time required on his part.

Why is it different? First, we will not "pester him" with scheduled calls. Could he call in the chief electrician for a few minutes? He does this. Briefly, we give the electrician a resume of what we have to

sell. A catalog of all our lines, in an attractive loose leaf binder is offered. We state that, as new items are released, additional inserts will be mailed.

Employs Local Serviceman

No scheduled calls? Absolutely not. Instead, we offer a real technical service. We have engaged the best serviceman in that particular city. A phone call to our company, night or day, will bring our salesman *and* this expert, to iron out any difficulties in production, or equipment installation. We will work hand in hand with the company's electrical or production department, giving them immediate service, estimates, etc. when needed, instead of wasting time in needless calls. Ordinary items can be ordered from us by mail or phone as needed.

Nothing startling in our plan, but it appeals to the purchasing department because of time saving. The chief electrician is for it because, oftentimes, problems are encountered where he would like consultation with an expert more familiar with high frequency, and other problems with which he is not familiar.

In carrying out this plan, we strive to outdo ourselves in giving prompt service, whether it be an order sent in, or a request to come to the factory for estimates, and technical advice. Goodwill and confidence is built up to such an extent that we often receive orders for small parts that the company could actually obtain direct from a manufacturer at the same cost that we,

(Continued on page 72)

COOPERATIVE Scheme

THERE'S A LOT of parts business for the radio jobber in the average factory.

The author's method of getting it is particularly interesting because he's found a way to cut local servicemen in on the profits

Get in on the **GOLD RUSH!**

RCA Victor GOLD SEAL PROMOTION

Is Your Golden Opportunity
to Make More Money **NOW!**



Practically the entire 1941 line of RCA Victor Radios and RCA Victrolas is included in this special campaign which enables you to offer your customers special values for limited time only. Act now! Get full details and sales-making promotional material from your RCA Victor distributor today!

Here are 2
of the many
GOLD SEAL SPECIALS
you'll be able to offer
at highly attractive
prices that mean
BIG VOLUME



RCA VICTROLA MODEL V-300

From the distinguished beauty of its cabinet down to the tiniest part in its chassis, this instrument is real quality. Among its scores of outstanding sales features are Exclusive RCA Victor Tone Guard . . . Automatic Record Changer for 10" or 12" records . . . Record Storage Space in cabinet . . . 10 RCA Victor Preferred Type Tubes plus Magic Eye . . . American and improved Foreign Radio Reception on four wave bands . . . Overseas Dial . . . Electric Tuning for eight stations . . . 20 watts output . . . 15-inch Super-sensitive Electrodynamic Speaker . . . 2 built-in Antennas, one for domestic, one for foreign programs. And at its special Gold Seal Promotion price you'll do a bang up business.

In Canada, RCA Victor Co., Ltd., Montreal
. . . Trademarks "Magic Eye," "RCA Victor," and "Victrola" Reg. U. S. Pat. Off. by RCA Manufacturing Co., Inc.

March 29
Wavelength-
Changing Time Is
TUBE - SELLING
TIME!
RCA Victor
Preferred Type
Radio Tubes



RCA VICTROLA MODEL V-205

Thousands have been sold—and thousands more will be sold as a result of this Gold Seal Promotion. So, be in on the Gold Rush from the very beginning. This instrument has the sales features that mean more business for you. They include RCA Victor Tone Guard . . . Gentle-Action, Automatic Record Changer for 10" or 12" records . . . 9 RCA Victor Preferred Type Tubes . . . American and Foreign Radio Reception on 3 wave bands . . . Electric Tuning for 6 stations, and many others.



RCA Victor

RCA MANUFACTURING COMPANY, INC., CAMDEN, N. J.
A SERVICE OF THE RADIO CORPORATION OF AMERICA

Seen at the BOAT SHOW

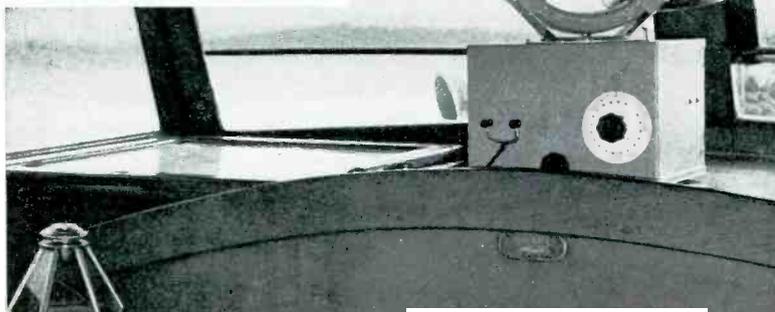
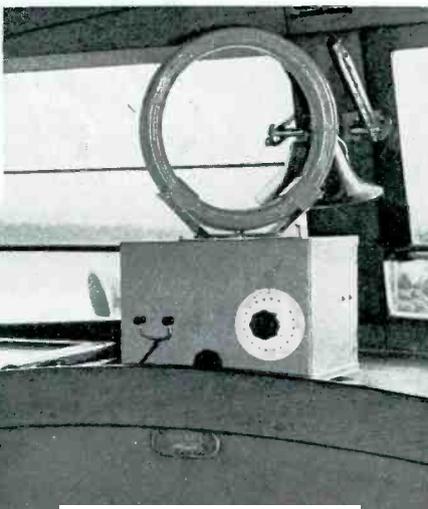


TYPICAL marine receiver covering coastal telephone lanes

TYPICAL ship-to-shore radio telephone



TYPICAL radio direction finder



MARINE radio equipment played a major role in this year's annual Motor Boat Show, held Jan. 10-18, at Grand Central Palace, New York. New radio instruments, adapted to an increasing number of marine services, were displayed by nearly a dozen different concerns.

Ansley displayed a direction finder for easy reading and 200 mile range. Cape Cod Instrument Co. showed a new line of 4 direct reading radio compasses, tuning range 275 to 325 kc. Ray Jefferson, Inc., featured 6 radio telephones, power 8 to 100 watts. Jefferson-Travis Radio Mfg. Corp. exhibited 4 ship-to-shore communication instruments for both pleasure and commercial vessels. The Grady Instrument Company had something brand new in a marine inter-communicator called the "Utili-Fone." Hallcrafters presented 3 radio telephones, power 12 to 50 watts, a radio compass, a marine set and a portable unit with marine band coverage. Hudson Engineering Company showed 5 ship-to-shore phone units and several accessories, including a remote control model. New York Marine Radio Co. was represented with a number of radio telephones, operating from 6, 12, 32 volt d.c. or 110 volt a.c. or d.c. Karns-White Corp. exhibited a portable direction-finder, and 7 marine radio receivers, including 3 portable units. Western Electric displayed a radio compass, 3 ship-to-shore phones and a new selective calling mechanism.

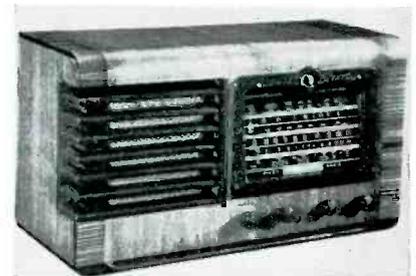
New



PHILCO 296X CONSOLE model, a 9-tube set with 8 pushbuttons. Built to receive standard broadcasts, American and foreign shortwave, state and city police calls, aircraft, ship amateur stations. The walnut designed cabinet measures 35½ high, 35 wide, and 13¾ inches deep. Retail price \$99.50. Philco Radio & Telev. Corp., Philadelphia, Pa.

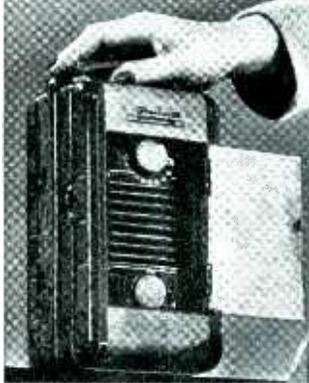


RCA VHR-307 CONSOLE COMBINATION, a deluxe instrument, is available either in walnut or mahogany, incorporating radio, automatic phonograph, and home recording features. This 12-tube radio tunes 4 bands, including a special 31-meter spread band for ease of foreign tuning. Has a 15-inch speaker. RCA Mfg. Co., Camden, N. J.

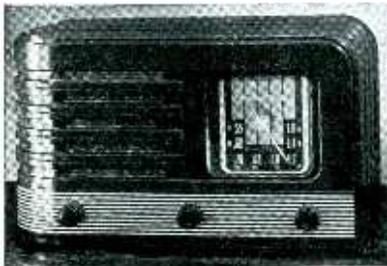


PILOT T-133 TABLE type, "all-purpose" receiver, operating from 110 volts ac, 220 volts ac, 110 volts dc, 220 volts dc, 6 volts or 32 volts dc which can be obtained by merely rotating the voltage selector switch on the rear of the chassis. Has 9 tubes, 8-inch speaker, and 3-gang condenser. List price \$89.50. Pilot Radio Corp., 37-06 Thirty-Sixth St., L. I. City, N. Y.

Products . . .



FARNSWORTH CT-59 PORTABLE camera-type radio, "Caryette," is an ac-dc and battery model to list at \$19.95, f.o.b. Ft. Wayne. Measures 8¼ high, 4½ wide and 4 inches deep. The translucent plastic case ornamented with contrasting overlay of leatherette. Equipped with convenient handle. Has 5 tubes. Farnsworth Tele. & Radio Corp., 3700 Pontiac St., Ft. Wayne, Indiana.

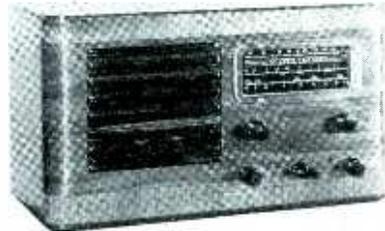


STROMBERG-CARLSON 600-H PLASTIC RADIO, a new addition to this company's line, is available in a choice of ivory finish or a rich brown color with horizontal white stripes. It offers ac-dc operation on the standard broadcast range. Features 5 tuned circuits, 5½-inch speaker. In brown finish, eastern list price, \$24.95; in ivory finish, \$26.95. Stromberg-Carlson Tel. Mfg. Co., 100 Carlson Road, Rochester, N. Y.

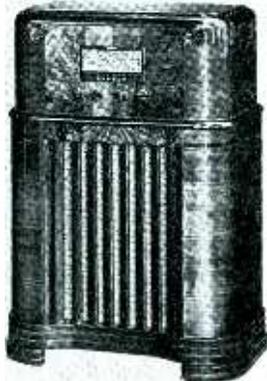


ADMIRAL 102 RECORD CABINET, a deluxe style, has room for eight record albums and is designed to harmonize with Admiral's table-type radio combinations. Comes complete with one 12-inch and four 10-inch albums. Continental Radio and Tele. Corp., 3800 Cortland St., Chicago, Ill.

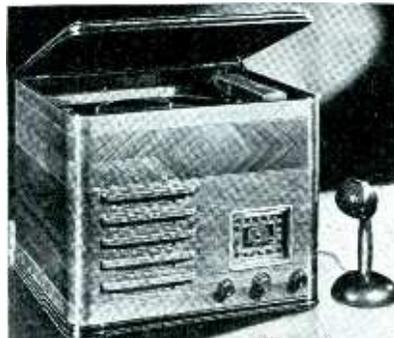
SETCHELL CARLSON FOUR BAND receiver consisting of Long wave (185 to 405 kc, 1600 to 750 meters), broadcast (540 to 1550 kc, 545 to 200 meters), Short wave (3.7 to 9.5 mc, 80 to 31 meters) ultra short wave (9 to 26 mc, 31 to 12 meters). Model 413 has 6 tubes, 6-inch speaker. List price \$44.50. Also available in model 413RD which includes DorAfone circuit (but external speaker) permitting two-way conversations. List price \$49.95. Setchell Carlson, Inc., 2233 University Ave., St. Paul, Minn.



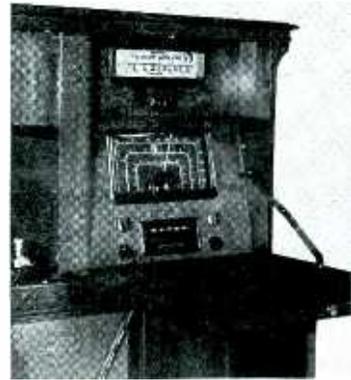
HOWARD 718-C CONSOLE radio housed in an attractive modernistic walnut cabinet, with built-in walnut center panel and trim. This 12-tube receiver covers 3 bands, and has 6 pushbuttons and 12-inch speaker. List price \$79.95. Howard Radio Co., 1735 Belmont Ave., Chicago, Ill.



CROSLY 3386 TABLE COMBINATION incorporates a radio, phonograph and recorder. This 5 tube ac superheterodyne has 3 bands, and 8-inch speaker. Phonograph plays all records up to 12-inch. Recorder is finished with ten round-point play back needles, and 6 small blank records for recordings. Complete with small band type crystal microphone. The Crosley Corp., 3401 Colerain Ave., Cincinnati, Ohio.



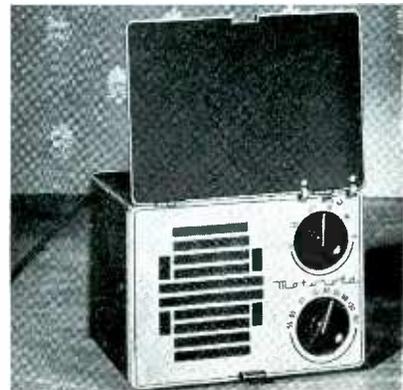
MOTOROLA 3A5 PERSONAL PORTABLE radio, "Playboy," operates on ac-dc or battery. Weight 6 lbs. Employs 5 tubes (including rectifier). Tuning range covers 550 to 1600 kc. Line cord can be tucked away inside case when not in use. Set turns on when front cover is opened. Maroon finished metal with chrome trim measures 6¼ long, 4¾ high, 5¼ inches deep. Also available in Model A-1, battery operated only, list price \$19.95. Galvin Mfg. Co., 4545 Augusta Blvd., Chicago, Ill.

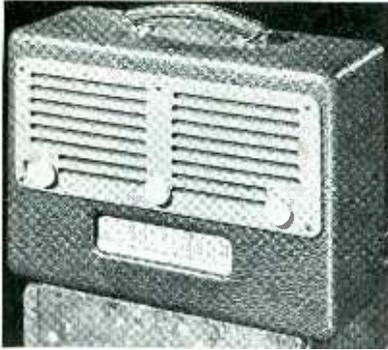


MAGNAVOX FM RECEIVER is a separate 11-tube chassis with its own tuning indicator. A shelf or pocket in the cabinet is provided for the installation of this FM chassis. With these instruments the FM chassis may be installed at the factory during assembly of the instrument, or it may be installed by the dealer at a later date. For instruments which do not have space provided for the FM chassis, a record cabinet of Georgian design has been created to hold chassis

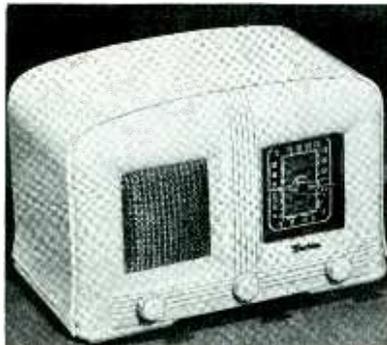


MAGNAVOX RECORD CABINET, model 7G, is the companion piece to the Regency Console combination. Available in genuine mahogany or genuine American walnut and it sells for \$65.00. Magnavox Co., Ft. Wayne, Ind.





SONORA LR-147 PORTABLE Triple - Play radio that operates on batteries, ac or dc. This 5-tube superhet has the built-in "Sonorascope" antenna. Slide rule dial. Tunes standard broadcasts. Housed in attractive open-face brown finished case with walnut overlay grille. List price \$24.95. Sonora Radio & Tele. Corp., 2626 W. Washington Blvd., Chicago, Ill.



ELECTROMATIC TABLE TYPE radio model is especially designed for world-wide coverage which is obtained by spread of the short wave band from 12 to 49 meters. Housed in an ivory plastic, model 26, has 6 tubes, and covers two bands. Electromatic Distributors, Inc., 88 University Pl., New York, N. Y.



MITCHELL LAMP-RADIO combination, new "Lumitone" table-type, is of cream colored bakelite with a gold base in which the radio dial is mounted. Shade is of celanese taffeta with gold piping trim. The radio has 5 tubes and full size electro dynamic speaker. Complete band coverage. List price \$22.95. Mitchell Mfg. Co., 1550 Dayton St., Chicago, Ill.

WILCOX-GAY RECORDIO DISC, "Red Label," is made in 3 sizes: 6 1/2-inch, 8-inch, and 10-inch. These discs are supplied with free albums, convenient for filling home recording records. The Recordio discs with albums are sold at the following prices: 6 1/2-inch, 6 for \$1.00; 8-inch, 6 for \$1.50; 10-inch, 6 for \$2.00. Wilcox-Gay Corp., Charlotte, Mich.

RCA TWO SPEAKERS announced by this company are designed primarily for sound reproduction over large areas. Larger of the two horns, MI-6303, is a 5 1/2 ft. baffle, folded back to a length of 31 inches. The bell diameter is 28 1/2 inches, frequency response 150 to 7000 cycles. MI-6302, illustrated, is a 3 1/2 ft. baffle compressed into 19 inches. Bell diameter is 21 1/2 inches, frequency response 200 to 7000 cycles. RCA Mfg. Co., Camden, N. J.



UNIVERSAL MICROPHONE, model CU-1, for private airplane and yacht installations has a bakelite molded plastic finish of a black phenolic type which gives it moisture resistance, and lightness in weight. Features single button carbon; moisture-proof cord, 3 1/2 ft. long; motor noise damped out by anti-noise construction; press-to-talk switch connects microphone and relay circuit at same instant; complete with "push-in" mounting bracket. Universal Microphone Co., Ltd., 424 Warren Lake, Ingiewood, Calif.



UNIVERSITY LABS. REFLEX SPEAKER, Model 2Y5 "Baby Bull" has a bell diameter of 24 inches, overall length 27 inches. Impedance 8 or 30 ohms, 50 watt continuous. Complete, including Model 2YH horn, two PAH driver units, dust cover, and a Universal "U" bracket, list price \$145.00. University Labs., 195 Chrysler St., New York, N. Y.



ERWOOD PORTABLE SOUND SYSTEM includes a 10-inch speaker, one desk type crystal microphone and a 5-tube amplifier. The amplifier has an output of 8 watts. Provision is made for attachment of a record playing mechanism for record reproduction. Contained in a carrying case of tweed finish. Measures 14 wide, 11 deep, 12 1/2 inches high. List price \$49.50, less tubes. Erwood Sound Equipment Co., 223 West Erie St., Chicago, Ill.

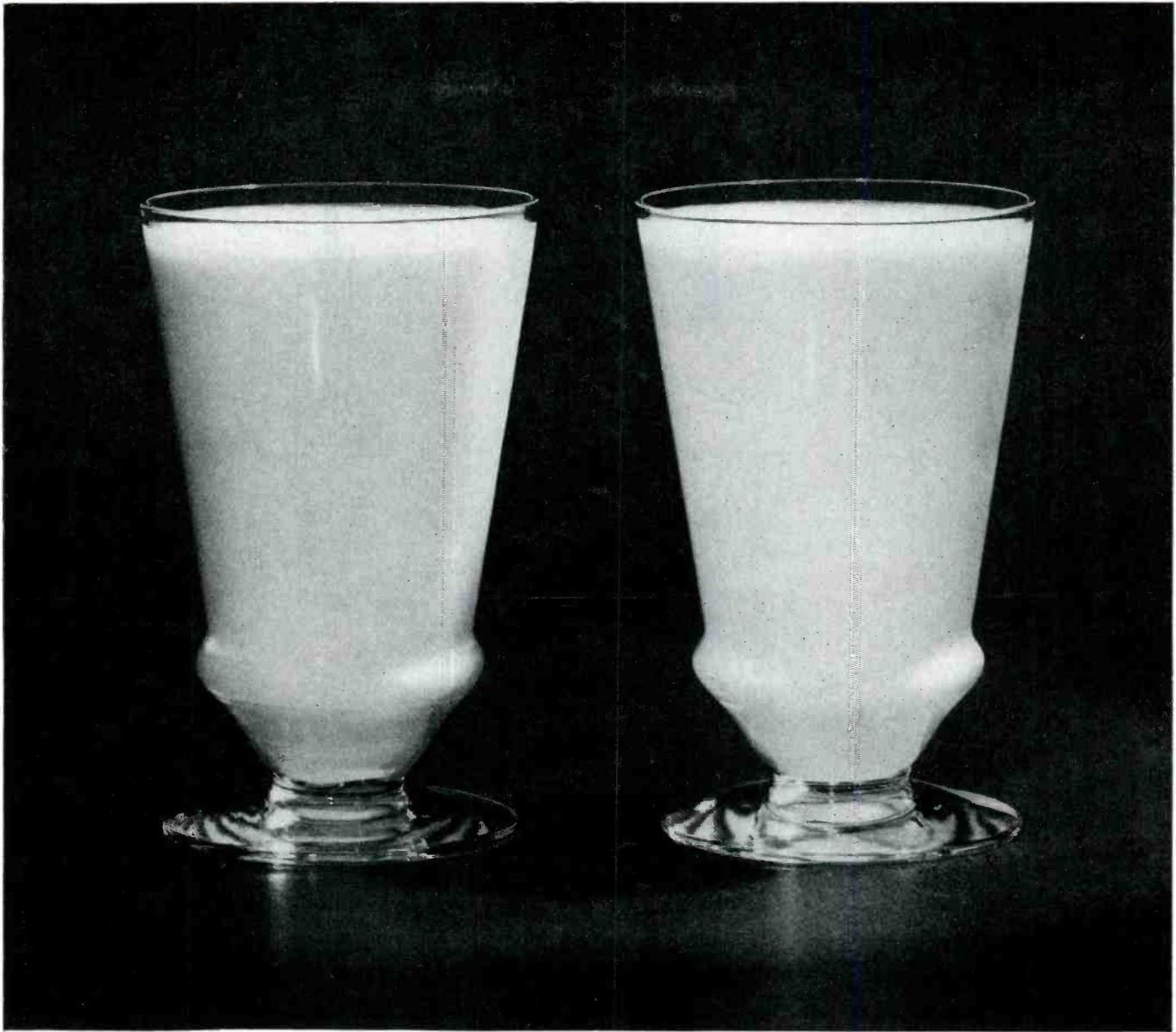


THORDARSON AMPLIFIER, model T-30W18, with power output of 18 watts is enclosed in steel cabinet. Output impedance 2, 4, 6, 8, 250, or 500 ohms. Frequency response within 1 db., plus or minus, from 30 c.p.s. to 15,000 c.p.s. with deliberate bass boost of 3 db. below 100 c.p.s. Contains 7 tubes. List price \$125.00. Also available in Model T-31W18, with-out phono motor and pick-up, list price \$114.00. Both operate on 6 or 115 volts. Thordarson Electric Mfg. Co., 500 W. Huron St., Chicago, Ill.



SHURE MICROPHONE, "Uniplux" Cardioid crystal cuts down room noise pick-up. Model 7305 has built-in r.f. filter which protects against burnouts. Output level—33 db. below 1 volt for 10 bar speech signal. Swivel head. Satin chrome finish. Diameter 3 1/8 inch. Depth 3 3/8 inch. Complete with 7 ft. super-shielded cable. Available in Model 7305H at \$32.50 list; also in Model 7305, complete with desk mount, at \$35.50 list. Shure Bros., Microphone Headquarters, 225 W. Huron St., Chicago, Ill.

ACTONE NEEDLES, cutting and playback, made by Bagshaw, are introduced by Actone. These shadowgraphed needles are individually magnified 200 times for point imperfections. H. W. Acton Co., Inc., 370 Seventh Ave., New York, N. Y.



THEY LOOK ALIKE... BUT

THE COMMERCIAL VALUE of one of these glasses of milk has been increased a hundred-fold by the Pasteurization Process . . . a fact neither you nor we could ever guess simply by looking at both.

Similarly Sylvania's engineering genius, constant research, patient attention to detail, and uniform quality give Sylvania Tubes a

greater value to both you and us than the profit we make on their sale.

For, while a Sylvania Tube *looks* much like any other, the famous quality and dependability of these tubes reflect credit on those who recommend them . . . and, in so doing, help you to build up your greatest asset . . . customer good-will!

S Y L V A N I A

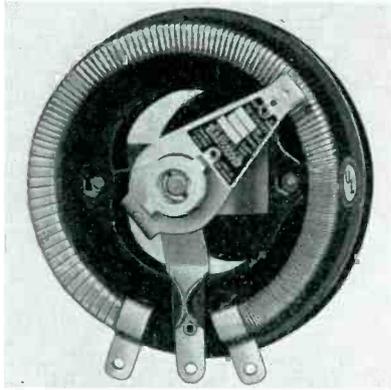
SET-TESTED RADIO TUBES



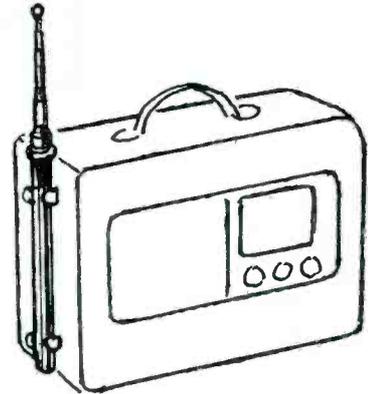
Also makers of Hygrade Lamp Bulbs, Hygrade Fluorescent

Lamps and Miralume Fluorescent Light Fixtures

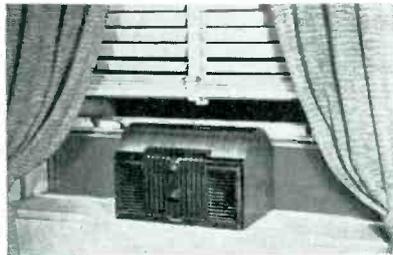
OHMITE FIELD RHEOSTATS are tapered or uniformly wound, as required, designed to provide control for separately or self-excited generators. They are available in a series of ten wattage sizes, from 25 to 1000 watts. There is an Ohmite Field Rheostat suitable for every size generator from the smallest to units of several kilowatts. Ohmite Mfg. Co., 4835 Flournoy St., Chicago, Ill.



PHILSON TELESCOPE AERIAL for portable radio set tends to eliminate the directional effect of loop. Can be mounted inside or outside of cabinet. Contains 5 sections; 14-inch telescoped; 50-inch when extended. Philson Mfg. Co., Inc., 156 Chambers St., New York, N. Y.



PHILCO ROOM VENTILATOR housed in a walnut cabinet which measures 11x16x14 inches. Weighs 26 lbs. Features a hinged door on the back of the ventilator which provides a seal between the room and outside and insures protection during inclement weather. Priced at \$39.50. Philco Radio & Telev. Corp., Philadelphia, Pa.



AEROVOX PLUG-IN CONDENSERS are provided with a specially constructed octal base which fits into the standard octal socket. Now available in the 525 v. surge 450 v. D.C.W. rating, and in 10 to 80 mfd. single-section, 10-10 and 20-20 double-section, 10-10-10 triple-section, and the 10x10x450 plus 20x25 combination. Aerovox Corp., New Bedford, Mass.

VERTROD HOUSE ANTENNA claimed by this company to eliminate most of the man made static which has previously defied the best efforts of engineers, employs entirely new principle. Line interference is effectually prevented from reaching aerial. Supplied in convenient compact package, Vertrod can be mounted wherever 4 inches of space are available. Vertrod Mfg. Co., 132 Nassau St., New York, N. Y.

AMPERITE AUTOMATIC RELAY automatically changes the battery sets to ac-dc operation. All that is necessary is to plug the regular cord into an ac-dc line and turn on the set switch. The relay consists of two single pole contacts which are placed in the minus A and minus B battery lead. As soon as the ac or dc is passed through the set the relay automatically starts its operation. Amperite Co., 561 Broadway, New York, N. Y.

PINCOR CONVERTERS

AK with filter

BK with filter

YR less filter

"Satisfied" SAY THOUSANDS OF CONVERTER USERS

Where uninterrupted operation of such A.C. electrical equipment as gaseous signs, power amplifiers, motors, radios, musical instruments, etc. depend upon your converters, play safe by using Pincor Rotary Converters. They give thousands of hours of trouble-free service, even under the most adverse conditions.

Available with or without filter for converting 6, 12, 32, 115, 230 or special voltages D.C. to 110 or 220 volts A.C. 40 to 5000 KVA. Quiet, smooth, light weight and compact. Send for NEW complete catalog today.

PIONEER GEN-E-MOTOR CORPORATION
CHICAGO, ILLINOIS
EXPORT ADDRESS: 25 WARREN ST., N. Y., N. Y.
CABLE: SIMONTRICE, NEW YORK

LET THIS **Fidelitone** SALESMAN work for you!

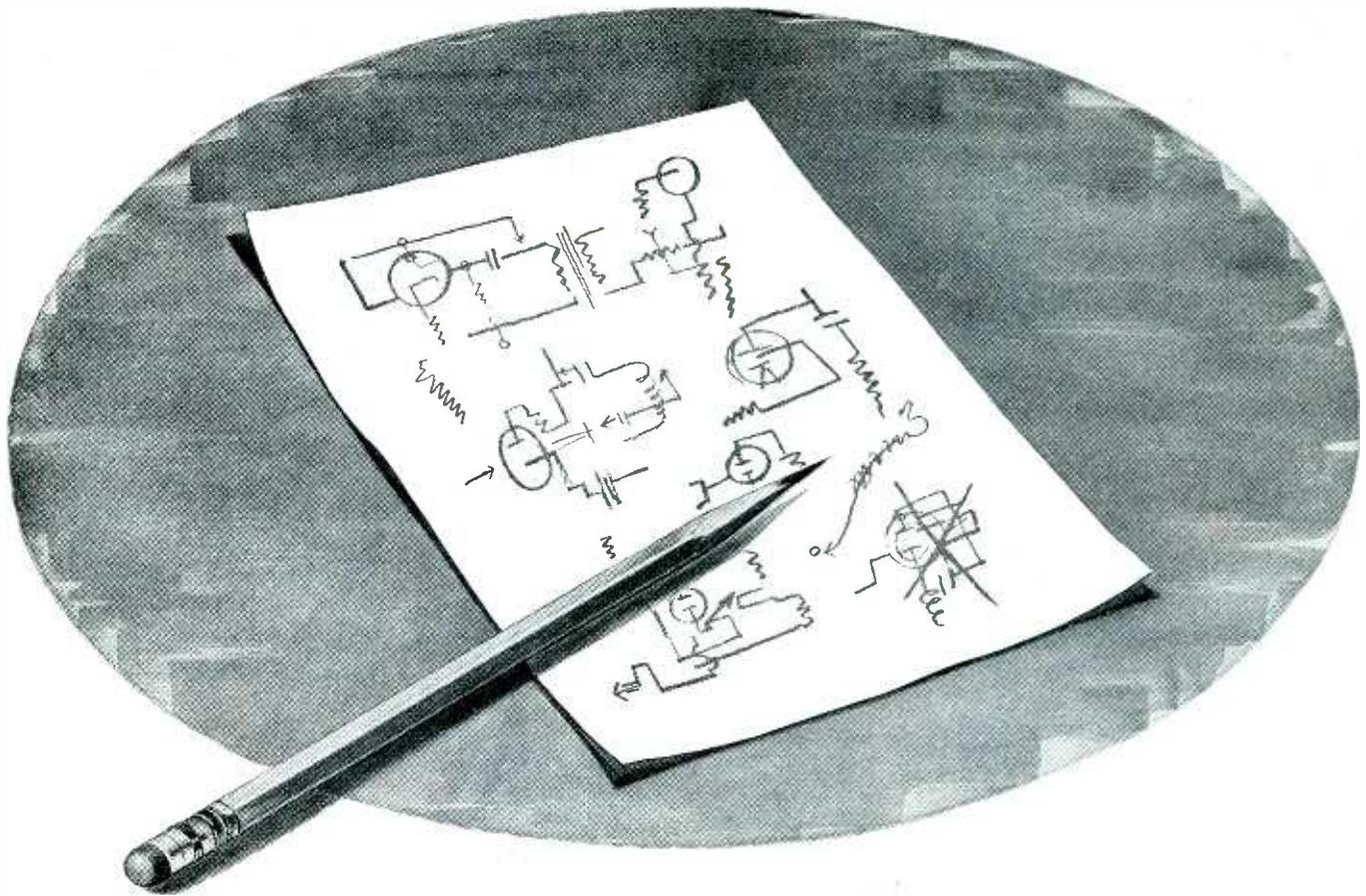
Nationally Advertised 50¢

Fidelitone FLOATING POINT
6 MONTHS SERVICE FROM EACH NEEDLE
PHONOGRAPH NEEDLE

Filters Record Scratch THROUGH FLOATING POINT

● Put this FIDELITONE Floating Point Counter Salesman to work for you NOW! . . . Increase your phonograph needle profits with FIDELITONE Floating Point Needles . . . Order a display today from your distributor or write the makers.

PERMO PRODUCTS CORP.
Manufacturing Metallurgists
415 RAVENSWOOD AVENUE, CHICAGO, U. S. A.



"DOODLES" THAT MAY AFFECT MILLIONS OF LIVES!

Here, insignificant on his scratch pad, are the "doodles" of a radio engineer . . . "Doodles" that may well be the foundation of a highly significant development when RCA Research and team work have finished with them

"Doodling" is a habit of thinkers. And that is why the scratch pads of radio engineers are often a pattern of "doodles." These men are ever thinking, probing, studying in their ceaseless efforts to uncover new radio devices and services.

To this end, RCA Research plays an important part. The scores of outstanding developments that have first seen the light of day in the RCA Laboratories are concrete proof of the progress research makes possible.

In conducting research, RCA engineers and scientists have at their disposal the greatest experience in electronics



and sound. RCA is the only organization that makes and does everything in radio. Broadcasting problems frequently find solution in the experience of the National Broadcasting Company . . . Communications problems are more easily solved with the assistance of R. C. A. Communications, Inc. . . . The answers to manufacturing problems may be secured through consultation with men at the RCA Manufacturing Company . . . Problems encountered in marine radio development are overcome with the help of the Radiomarine Corporation of America. In short, the aid of the entire organization is extended to those in the RCA Laboratories who look to the future.

So with "doodles" as a start, followed by intensive research and team work, the magic of radio plays an important role in the lives of millions.

RADIO CORPORATION OF AMERICA

RADIO CITY, NEW YORK

The Services of RCA—

RCA MANUFACTURING COMPANY, INC. • RADIOMARINE CORPORATION OF AMERICA • RCA LABORATORIES
NATIONAL BROADCASTING COMPANY, INC. • R. C. A. COMMUNICATIONS, INC. • RCA INSTITUTES, INC.

New PHILCO ROOM VENTILATOR

*Opens Up Big
All Year Round
Business for You!*



Only \$39.50
LIST PRICE

Philco brings you a new source of year 'round profits . . . a Room Ventilator priced lower than ever offered before! Based on an entirely new engineering principle that gives it all the efficiency of units costing twice as much!

- Brings in Fresh, Clean, Filtered Air . . . 475 Cubic Feet Per Minute.
- Shuts out Noise, Dirt, Dust.
- Exhausts Stale, Stuffy Room Air . . . 110 Cubic Feet Per Minute.
- Recirculates Room Air . . . 185 Cubic Feet Per Minute.

Think of the market this amazing new low-priced Philco product opens for you! Every office, home, apartment is a prospect. Large volume . . . steady profits. No saturation . . . no trade-in allowances. *And it's easy-to-handle package merchandise.* Weighs only 26 lbs. Installation is quick, easy . . . a 30-minute, one-man job. Don't wait . . . get in early and cash in big! Mail the coupon today for full information.

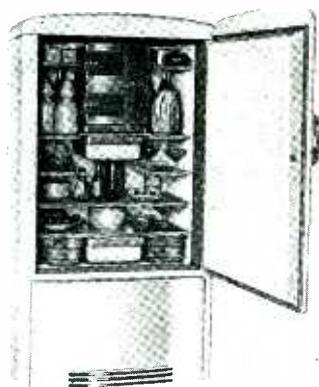
**Price Slightly Higher Denver and West*

Philco Radio and Television Corporation
Dept. No. 548, Philadelphia, Pa.

Please send me full details of your dealer franchise proposition on the new Philco Room Ventilator, together with Discounts and your Special Wholesale Credit Terms and descriptive literature.

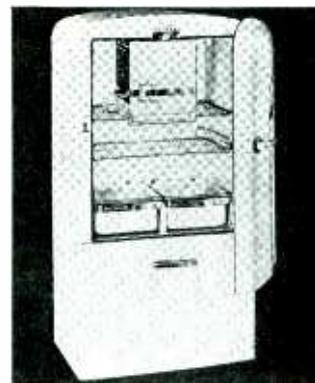
Name _____
Street _____
County _____
City _____ State _____

New REFRIGERATORS



GALE 6C884 REFRIGERATOR, the deluxe "Commodore 8," is an 8.75 cu.ft. model measuring 62 $\frac{3}{8}$ high, 31 $\frac{1}{8}$ wide, and 28 inches deep. Features twin freezers; a sliding porcelain meat drawer; glass covered vegetable crisper; twin wire baskets; and vegetable bin. Gale Products, Galesburg, Ill.

PHILCO MS 6 REFRIGERATOR features a wide, oversize freezing unit (evaporator); glass-covered meat storage compartment for storing uncooked meats at high humidity near freezing; two extra-large, glass covered porcelain sliding crispers, arranged for stacking. Has non-refrigerated divided reserve storage bin. Philco Radio & Tele. Corp., Philadelphia, Pa.



FRIGIDAIRE L-8 REFRIGERATOR has a freezer in the center position, a re-styled and larger hydrator, a meat tender with increased capacity, and a utility storage compartment. Also equipped with improved quickcube ice trays, stainless steel hydrator glides, and a recessed centrally located interior light. Contains the rotary sealed Meter-Miser cold making mechanism. Frigidaire Div., General Motors Sales Corp., Dayton, Ohio.

G-E REFRIGERATOR, features the butter-conditioner which keep 1 lb. of butter just soft enough for spreading. Contains dry storage bin; cold storage tray with cover for uncooked meat; two vegetable and fruit drawers with glass tops. General Electric Co., Bridgeport, Conn.



LEONARD REFRIGERATOR with the "Presto Shelf" enables the homemaker to make five different interior shelf arrangements. With this new feature she can make room for such bulky articles as a large turkey or a watermelon. Enough space can even be arranged for a bouquet of flowers, which can be kept fresh in the food compartment until needed. Leonard Div., Nash-Kelvinator Corp., Detroit, Mich.

HOTPOINT REFRIGERATOR features the butter conditioner where butter may be kept fresh, and at ideal consistency for spreading, by adjustment of a small knob. It is located in the left-hand corner of the cabinet. Edison General Electric Appliance Co., Inc., 5600 W. Taylor St., Chicago, Ill.



GETTING SET

for the

BIGGEST CAMPAIGN

in RADIO HISTORY



A simple radio servicing job in 10,000,000 homes all at once, will enable 40,000 radio men to sell extra sets, new tubes, parts and equipment.

● On March 29, when Re-allocation gives clear channels to a greater number of broadcasters and otherwise eliminates interference between stations, the radio industry will be launched upon the greatest sales drive it has ever known.

Dial positions on 50,100,000 sets will be changed, and push buttons on 10,000,000 receivers must be re-set—a job that will tax the capacity of dealers and servicemen but, at the same time, bring them an unprecedented opportunity to ENTER THE HOME AND SELL.

In all of radio there is hardly a product that cannot benefit from the great frequency shift. Additional radio sets, phonographs, records, new tubes, parts replacements, antenna equipment, noise filters and many other products will have the com-

bined sales effort of more than 40,000 dealers and servicemen.

Promotion to expedite the big change-over has been pledged by manufacturers, broadcasters, radio trade associations, public utilities, local radio groups and others.

How each manufacturer will benefit from the campaign depends largely upon the character of his distribution and his use of trade promotion having a definite suggestion-value to the dealer and serviceman.

A space campaign in RADIO & Television RETAILING, beginning in the March issue, would serve three main purposes: (1) Immediate volume. (2) Unlimited prospects for future closing. (3) Additional year-round distribution.

To Manufacturers of RADIOS, PHONOGRAPHS, etc.

Never before have you had such a concentrated mass market to sell, all at once, and by invitation! Every set owner who orders push button service knows that he is exposing himself to sales effort. Every dealer and serviceman is receptive to lines with a quick sales appeal. They should be urged to

- plan a comprehensive local drive.
- draft every qualified employee.
- carry a compact on every call.
- sell repairs as well as re-set buttons.
- emphasize limitations of old sets.
- sell up, i.e., arrange appointment for demonstration of a combination.

To Manufacturers of TUBES, PARTS, and Equipment

Re-allocation gives you the biggest break in the history of radio. The push button job is only the starter. Tell the dealers and servicemen WHY your products should be used. Advise them to get good prices. Caution them against substandard merchandise. Also:

- sell complete tube replacements.
- sell antennas for loop sets that are jack-equipped.
- sell noise filters for better reception.
- check power supplies, filters, speakers, etc., for need of replacement.
- loan new sets during repairs whenever possible. Will help you make sales.
- keep card records for future servicing and selling.

To Manufacturers of SERVICING EQUIPMENT

Ten million push button sets, and only 40,000 servicemen and dealers to do the job! Average, 250 jobs per man. A quarter of this would be big business. They all want to know how they can best handle the big volume in a short period. Impress upon them:

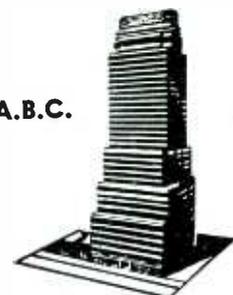
- the necessity for accuracy as well as speed.
- how to conserve time for selling.
- types of equipment they should take with them.
- types of equipment needed in the shop.
- the importance of portable equipment—tube checkers, signal generators, multimeters, etc.

Use RADIO & Television RETAILING to tell dealers WHY and HOW they should merchandise your product. March closing date, March 6.

RADIO and Television
330 West 42nd Street
NEW YORK
RETAILING

A.B.C.

A.B.P.



A MCGRAW-HILL PUBLICATION

The RADIO MONTH

STATION FREQUENCY SHIFTS will definitely be made at 3 a.m., E.S.T., Sunday, March 29. Latin American hold-outs giving rise to a rumor that the date might be postponed have swung into line. At the witching hour we'll be peacefully pounding our ear while operating staffs of 777 stations scabble around for new crystals et. al. Then, after sun-up, 10,000,000 people with pushbuttons will be searching for little signals that aren't there . . . unless servicemen get in some licks beforehand, checking first with the slick city-by-city assignment chart printed in *Radio Retailing's* October issue. (Our March number will give more "how to do it" dope).

PAY-AS-YOU-PLAY provision of the civil decree voluntarily filed with the Government by BMI would be a nice net gain for broadcasters, inasmuch as the major reason for radio's wrangle with ASCAP is the latter's insistence that stations pay a flat fee per year regardless of how often they actually use the Society's music. BMI appears to be sitting pretty at the moment because the Government withholds its suit against that organization in view of the decree, while keeping the pressure on ASCAP. But all bets are off if ASCAP fails to file a similar decree, which it has not done to date.

TELEVISION MEN MEET again with the FCC March 20 to discuss standards proposed January 27. Commercialization has been prematurely predicted too many times for us to stick our neck all the way out but it does seem possible that it might come before Fall and probable that the sound channel will utilize FM.

SPEAKING OF FM, the most significant thing that has happened to it in the past month has been the granting of permission to relay programs from studio to station and, in some instances, from station to station via ultra-high frequency radio itself. Tonal range may thus be kept broader than telephone lines sometimes permit. And saving in tolls, while ostensibly secondary, is still important.

RUMORS ABOUT THE FBI urging the FCC to crack down on wireless record players and other low-powered radio control devices which might be used for communications by Fifth Columnists are herewith scotched. We have it straight from the feedbox that, while regulations governing such apparatus are still tem-

porary in character and have been subject to change from the very beginning, no such step is at present even contemplated.

A RECORD MAN who was in the business in the old days tells us that the average phonograph dealer used to sell \$25 worth of discs with every machine over \$150, wonders why radio stores haven't yet gotten wise to the virtue of this stunt that used to be considered routine.

HOME RECORDINGS generally have sound-tracks that ordinary commercial-style needles tear out too quickly. Playback needles are made to preserve the track and a good many consumer complaints concerning lack of home-recording disc life are, investigation discloses, due to the use of wrong needles. Something, somewhere, is obviously wrong with our playback needle selling.

FROM ENGLAND comes word that set manufacturers are designing less critical circuits for civilian radios to permit the use of parts with greater value tolerance. Our informant says this simplifies parts production and eases up on the supply problem. American national defense planners, please copy.

STATISTICAL NOTE: Edison Electric Institute says radios consumed 1,880,000,000 kw. hours of electricity in 1939, a load exceeded only by domestic lighting, ranges and refrigerators (if you don't count the light people used staying up nights listening to their sets!) Based on 3 hours per day use of average set drawing 75 watts.

TUBE PRICES upped about five cents for the average "bottle" during the month, rising raw material costs being given as the reason. No squawks from the trade that we've heard about. On the contrary.

CONSOLE SALES fell so flat on their face in 1940 that most manufacturers are properly "leery" about producing a scad of such straight radios this year. There is, in fact, some danger that the pendulum will swing too far in the other direction, forcing the people who want such sets to go a little hungry. There may be fewer of them, but there are such people.



NOW WITH CROSLY—J. H. Rasmussen, just appointed manager of the radio division of The Crosley Corp. Formerly assistant sales manager of the Zenith Radio Corp.

FCC Tele Hearing March 20

To formally consider standards suggested January 27 by NTSC

WASHINGTON—The Federal Communications Commission will hold a formal hearing on Thursday, March 20, to consider the various engineering standards that were suggested in the NTSC report submitted on Jan. 27, and also, to determine when television broadcasting shall be placed upon a commercial basis.

As a prelude to the Jan. 27 Washington conference, members of the Commission visited New York on Jan. 24-25, where they witnessed various demonstrations of late television developments. At the Allen B. DuMont Laboratories, Inc., they viewed a demonstration of DuMont 625 line, 15 frame television. The Radio Corp. of America demonstrated its latest home receiver, featuring pictures 13½ by 18 inches on a translucent screen and at the New Yorker theatre, a showing of RCA theatre television was held on a screen 15 by 20 feet. At the Bell Telephone Labs., pictures went over coaxial cable and at the Columbia Broadcasting System headquarters the Commission inspected CBS's demonstration of color television.

Allen B. DuMont Labs., reports that its demonstration of 625 line, 15 frame pictures will be available for showings on Wednesday and Friday afternoons, 3 to 5 PM, until March 20. This is being done, they say, because the pictures as demonstrated on Jan. 24, were not representative of what can be obtained with transmissions on these standards.

At the conclusion of the meeting on Jan. 27, Chairman Baker of NTSC formally presented the 22 standards as recommended by the committee along with the individual panel reports, making a total of 2200 pages.

The highlights of the suggested standards are as follows: That a full test of color on the Group A channels be

On the Newsfront

permitted and encouraged . . . That the width of the standard television broadcast channel shall be six mc . . . It shall be standard to locate the picture carrier 4.5 mc. per second lower in frequency . . . That the standard number of scanning lines per frame period in monochrome shall be 441, interlaced two to one . . . The standard frame frequency shall be 30 per second and the standard field frequency shall be 60 per second in monochrome . . . The standard aspect ratio of the transmitted television picture shall be 4 units horizontally to 3 units vertically . . . It shall be standard, during the active scanning intervals to scan the scene from left to right horizontally and from top to bottom vertically, at uniform velocities.

That it shall be standard to use frequency modulation for the television sound transmission.

And it shall be standard in television broadcasting to radiate horizontally polarized waves.

RMA Convention Plans

Paul V. Galvin in charge of program

WASHINGTON—The program for the seventeenth annual RMA convention to be held at Chicago, June 10-13, will again be in charge of Director Paul V. Galvin, chairman of the Association's Set Division.

Galvin was appointed chairman of the June Convention Committee by the RMA Board of Directors at its recent Chicago meeting. He will also handle arrangements for the annual industry banquet.

Reservations for the parts show already are one-third larger than at this time a year ago, according to Ken Hathaway, show manager for the RMA and Sales Managers Clubs, joint sponsors of the Parts Trade Show.

RSA Elects Officers

WILKES BARRE—The Radio Servicemen's Association of Luzerne Co., Wilkes Barre, Pa., elected the following officers to conduct its affairs and business for 1941: president, Edward Buckman; vice president, Austin Renville; treasurer, John Kennedy; secretary, Sam Keithline; board of directors, C. Foster Hick, Spencer Eddy, Ed. Nowicki, Ed. Tishler, Pat Manville and Dan Davis. Honorary member, Tony Yennis.

After the election of officers, the membership was treated to a party by Spencer Eddy of City Radio and Frank Russel of Kenrad Tube Corporation.

Latest FM News

Four more station grants. Short-haul relay links proposed and new call letters assigned

WASHINGTON—Four more commercial frequency-modulation stations were authorized the first part of January, by the Federal Communications Commission, bringing to a total of 29 the number of FM broadcasters thus far approved. Some 55 applications still await official action.

The new stations granted construction permits are as follows:

Columbia Broadcasting System, Chicago, Ill., 46.7 megacycles, coverage 10,800 sq. miles, pop. 4,500,000.

WJJD, Inc., Chicago, Ill., 44.7 mc., 10,800 sq. miles, pop. 4,500,000.

Westinghouse Radio Stations, Inc., Pittsburgh, Pa., 47.5 mc., 8400 sq. miles, pop. 2,100,000.

W87NY, Columbia Broadcasting System, New York City, 48.7 mc., 8500 sq. miles, pop. 12,000,000.

On Jan. 15, the FCC, in response to several applications and a number of inquiries regarding radio relay links between studio and transmitter (instead of telephone lines), paved the way for short-haul relay service by using FM on frequencies above 330 megacycles. Suitable rules and definite channel assignments will be drawn up shortly to establish such service on an experimental basis. No applications, however, will be con-



DEMONSTRATES — Philco's ass't manager, James M. Skinner, Jr. (left) and sales promotion mgr, O. F. Achtenhagen (right), are pictured here demonstrating the features of model AR75 auto radio to Paul Rosenthal of the Meisel Stores, on his recent visit to Philco plant

sidered until such rules are adopted.

These link stations will be required to utilize highly directive antennas for the one-direction transmission, so that many stations throughout the nation can use the same channel without interference.

The Commission recently announced the assignment of call letters for 26 of the new commercial FM stations.

NAB Convention May 12-15

WASHINGTON—The annual convention of the National Association of Broadcasters will be held May 12-15 in the new Jefferson Hotel in St. Louis. The date of the convention was advanced to avoid conflicts with the vacation season and the start of the seasonal broadcast year. In connection with the convention and for the first time, NAB will conduct exhibits of broadcasting equipment and other station apparatus, with exhibits restricted to active and associate NAB members, including manufacturers of station apparatus and supplies.



7 STAR SALESMEN—Henry C. Bonfig, RCA-Victor commercial vice-president, holds the attention of these seven star salesmen from Chicago, during their recent visit to the Company's Camden headquarters. From the left, front row: E. Richardson, C. Hindringer, E. Blimke and L. Pollock. Rear row: H. Schwarz, H. Chapman and R. Harrer

Tube Tester

TRIPLETT

Model 1621



Combining simplicity of operation with absolute flexibility, Triplet's new lever switching permits individual control for each tube element—yet test procedure is simple and quick. The switch setting will permit tests of 45 commonly used different type tubes without change of position of the levers. Many tubes require only two lever switch settings—more than half, only three settings.

Model 1621 also features four additional "quick change" non-obsolete features, including the above switching section. RED • DOT Lifetime Guaranteed Instrument panel may be returned for replacement or repairs, in case of accidental damage. . . . Speed Roll Chart complete with mechanism can be replaced in the case of new factory releases, by removing only four screws from front of panel. . . . New socket panel to meet future radical tube changes which present spare socket cannot accommodate will be available at nominal charge upon return of old panel. . . . Switching section with power supply also can be replaced should unanticipated changes make it necessary.

MODEL 1621 Portable Tube Tester. Dealer Net Price. . . . **\$34.84**

Model 1620 Counter Type Tube Tester . . . similar to 1621 but containing RED • DOT Lifetime Guaranteed 7" instrument with long 6" Direct Reading GOOD-BAD Scale in colors. . . . Dealer Net Price **\$37.84**

Wide Range

SIGNAL GENERATOR

TRIPLETT
Model 1632



DEALER NET PRICE \$79.84

Model 1632—Continuous coverage . . . 100 Kc to 120 Mc. All frequencies fundamentals . . . Metered Output to multiplier and attenuator . . . Heterodyne Detector incorporated . . . Output Available at End of Coaxial Cable . . . Provision for External Modulation . . . Voltage Regulator Tube . . . Low Resistance Copper Shielding . . . Positive Vernier Dial Tuning Control . . . Accuracy and Stability beyond anything before demanded in the test field . . . Dealer Net Price. **\$79.84**

Write for Catalog—Section 202, Harmon Ave.

TRIPLETT ELECTRICAL INSTRUMENT CO.
Bluffton, Ohio



RICHARD L. WHITE—Newly elected president of Landers, Frary & Clark

Landers, Frary & Clark Name New Officers

NEW BRITAIN—At a directors meeting on Jan. 9 Landers, Frary & Clark, elected Arthur E. Allen, (former vice president of the Westinghouse Electric & Mfg. Co.), chairman of the board. At the same time Richard L. White, treasurer of the company was elected president, and Bret C. Neece, vice president and general sales manager was elected a director.

Arthur E. Allen, is well known for his long and successful service with Westinghouse, rising in various positions until he became a vice president of the company, where he remained until he resigned to retire in 1938.

Richard L. White, the new president is one of the outstanding younger figures in the household appliance manufacturing field. White's wide range of experience covers nearly every phase of manufacturing in the production of household merchandise.

Bret C. Neece, became vice president in 1938 and was made general sales manager in 1939. He is widely known throughout the appliance industry.

C-D On Noise Elimination

SOUTH PLAINFIELD—The Cornell Dubilier Electric Corp. announces that the results of its noise elimination investigation, conducted by its laboratory, has been summarized in a series of articles. The initial article appeared in the September issue of the "C-D Capacitor", monthly house organ of this company.

For those who are interested, a request to this company, will bring, without charge, the past and future issues in which these articles are appearing.

Segel Represents Turner

GARDNER—Henry P. Segel Company, 235 Pine Street, Gardner, Mass., manufacturers representative for the Turner line of microphones and accessories is now maintaining a complete stock of this equipment. This will make for immediate delivery for New England retailers.

RMA Aiding Defense

Draft survey for data on radio productive capacity

WASHINGTON—The Radio Manufacturers Association is intensively studying productive capacity of the radio industry, will make otherwise confidential data available to government officials concerned with national defense as quickly as it can be gathered. Information obtained by the Association will, says executive secretary Bond Geddes, be particularly helpful in connection with the sub-contracting program.

Questionnaires mailed manufacturers are designed to reveal (a) Interest in government contracts, officials to be contacted in reference to defense work, defense contracts at present on hand (b) Number of buildings, floor space in use and other available floor space (c) Skilled and unskilled employee normal average number and maximum potential (d) Normal daily production and estimated maximum 8-hour day production.

FCC Extends Int. Station Power Requirements

WASHINGTON—The Federal Communications Commission has extended to July 1, 1941, the time in which international broadcast stations in this country must operate on power of at least 50 kilowatts. This is the minimum power deemed necessary by the Commission to render satisfactory international service.

This extension has been granted in view of the fact that 11 of these stations have construction permits authorizing installation of new equipment but plead that time has not permitted completion.

All international stations will be expected to conform to the minimum power requirement during this period, as no further extension of time is contemplated.

Radio Club of Am. Names Callahan President

NEW YORK—The Radio Club of America, a national organization (founded 1909), with headquarters at 11 W. 42nd Street, New York City, has just elected the following officers for the current year: John L. Callahan, president; Paul Ware, vice president; Lincoln Walsh, corresponding secretary; H. M. Lewis, recording secretary and Joseph J. Stantley, treasurer.

Philco N. Y. Meeting

L. E. Gubb presents 1941 refrigerators to 800 New York dealers

NEW YORK—On January 20, over 800 metropolitan New York dealers, attended the New York Philco Distributors, Inc., dinner-meeting at the Waldorf-Astoria, at which time L. E. Gubb, executive vice president, presented the 1941 Philco refrigerators and a new window ventilator.

Thomas A. Kennally, general sales manager, discussed the merchandising plans and T. A. O'Loughlin, vice presi-

dent of Philco Distributors, Inc., outlined the advertising program. John C. Messer, secretary of the Retail Dry Goods Ass'n of New York addressed the gathering on trade diversion. Frank Donnelly was chairman of the meeting.

WITH PHILCO AT CHICAGO



TOPS—James T. Buckley, left, president of Philco Corporation; Larry E. Gubb, executive vice-president, and Stuart Falk, manager of Eastern division



ARRIVAL—J. H. Carmine, left, assistant general sales manager and Thomas A. Kennally, general sales manager



TAGGED—E. B. Loveman, left, advertising manager and Sayre M. Ramsdell, director of public relations



FOR MODERN REPLACEMENTS

Here's new business . . . good business . . . easy to get. These pickups have so many advantages . . . so many fine selling points . . . that only "low pressure" selling is necessary to convince a customer of the wisdom of modernizing phonograph equipment with Astatic's new Low Pressure Crystal Pickup. With only one-ounce stylus pressure on the record, scarcely more than one-third the conventional weight, records will last a lifetime. Built-in, permanent sapphire stylus eliminates the necessity of ever changing needles, and reproduction is greatly improved with the elimination of surface noise and distortion.

There's new business to be had! Every lover of recorded music, especially those possessing symphonic, operatic and other prized recordings is a potential customer. Department stores demonstrating records, schools desirous of prolonging the life of educational recordings, and many others, are all prospects for Low Pressure Pickup business.

Astatic Crystal Products Licensed Under Brush Development Co. Patents

Write for special literature. All Pickups are wired for quick and easy installation.

In Canada: Canadian Astatic, Ltd., Toronto, Ont.



ASTATIC MICROPHONE LABORATORY, Inc. YOUNGSTOWN, OHIO

can Union at Atlantic City, N. J., on February 27 and in New York, N. Y., on February 28 and March 1.

Special broadcasting, color television and other programs are planned for the

Vibrator Manual Now! Brings you a wealth of technical information. It's **FREE!** Write The Turner Co., 915 17th St., SE., Cedar Rapids, Iowa.



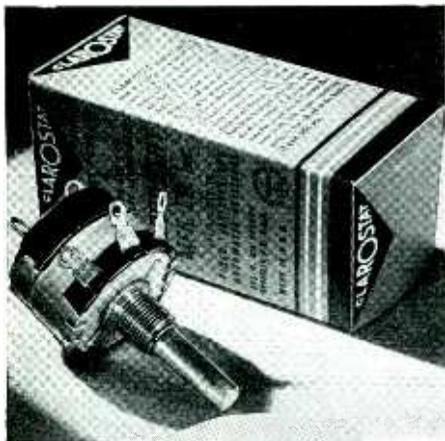
**Sell
Sunco Tubes**



Latin-American Radio Ads

RMA & Government form cooperative plan to advertise in 19 countries

WASHINGTON—The Radio Manufacturers Association announced



**Backed
by
EXPERIENCE**

★ Clarostat Series M (Composition-Element) Control is as fine a job as can be made today. Small enough to fit in tight spots yet large enough to stand up under hard service. Its perfected resistance coating on moisture-proof base; special alloy contact arm; perfected shaft lubricant; sturdy mechanical design without tricks; accurate resistance values, tapers, taps—these features adequately reflect 20 years of specialization and refinement. What's more . . .

Clarostat controls — composition-element and wire-wound alike—are backed by the outstanding application experience. You can't go wrong when you bank on Clarostat controls used according to Clarostat data.



Ask for Your Copy . . .

★ Latest edition of the Clarostat Service Manual is yours for the asking. Your jobber has your copy. There is also the Clarostat Plug-In Resistor Manual at 15c per copy. Get this indispensable literature locally, or write direct to

CLAROSTAT MFG. CO., Inc.
Dept. RR-2
285-7 N. 6th St. Brooklyn, N. Y.



ALL STAR WINNERS—John Stern (center) of Radio Electric Service Co., Philadelphia, is shown here receiving from Sam Macdonald, first place award as winner in recent Shure "All-Star Football Game." At extreme left, Jim Faries, and on right Gene Rothman and Morris Green. At another presentation, Macdonald also awarded loving cup and second place to George D. Barbey Co., Reading, Pa. Third place went to the Tydings Company. Winners also received cash awards

Dealer Helps

FOLDER—Astatic Microphone Laboratory, Inc. has just brought out a new folder describing its low-pressure crystal pickup with built-in, permanent sapphire stylus. For your copy address request to Astatic, Youngstown, Ohio.

LARGE DISPLAY BOARD—This new Continental Radio and Television Corp., D66 display board is especially designed to display its new Admiral automatic record changers and any four of the compact bakelite sets. Measures 6 by 8 feet high. Side center panels adjustable. Finished in washable wall paper and furnished complete with two pin-up lamps.



BOOKLET—RCA has a new instruction booklet, which is packed with each Personal receiver, entitled "Intimate Facts about a Personal Friend". This is a handy sales manual for dealers and their salesmen.

CATALOG—Girard-Hopkins, Oakland, Calif. offers catalog No. 64 listing its complete line of condensers and resistors.

BROCHURE—Sonora has just released an attractive manual under the title of "Listen, America," in which they present the complete line of 1941 receivers. The covers are painted in 4 colors.



We can offer a substantial connection to established, rated sound men. Our line is Chime Carillons, Automatic Reproducers, and Musical Tower Recordings. We advertise in a lengthy list of the leading church papers, and also conduct direct mail campaigns. We receive inquiries from substantial individuals of means, and active organizations interested in using our products for memorial, institutional and other purposes. These inquiries we turn over to our nearest representative. The representative earns a substantial profit.

SELLING SUNCO PRODUCTS

We not only provide real leads as received, and help follow-up, but supply equipment superlative in quality and workmanship, and capable of performance equaling that of carillons costing ten times more.

EXCLUSIVE RECORDINGS

The Sunco Chime Carillon has exclusive patented features; for instance, micro-tuning to 1/5000 of 1%! Played from electric keyboard, by hand, or record—automatically and time-controlled, if desired. For recorded programs, we have an extensive repertoire of sacred and semi-sacred music for musical towers—unexcelled by anything of the kind. We have a really substantial connection to offer, and if you are definitely interested and preferably rated in Dun & Bradstreet, write us. Also ask for our list of recordings.

SUNDT ENGINEERING COMPANY

4791 Ravenswood Avenue Chicago, Illinois

Now! WATCH YOUR WALCO NEEDLE PROFITS SOAR

WALCO GENUINE SAPPHIRE NEEDLES ARE NOW STANDARD EQUIPMENT IN THE NEWEST MODEL PHONOGRAPHS. ADOPTION BY NATIONAL MANUFACTURERS CREATES A VAST NEW REPLACEMENT MARKET FOR YOU.

New Low Price

former list price ~~1.50~~ Now \$1.00

Since becoming an integral part of the new, "big name" phonographs, WALCO SAPPHIRES are now produced in such tremendous volume that this new low price is possible. NOW, the leader of long-playing needles COSTS NO MORE!



Brand new "dressed-up" WALCO package—mounted 12 to a self-selling counter dispenser card—designed to quadruple needle sales.

Be prepared for soaring demand created by the new, popular price, and the prestige of "big name" advertising. Get behind WALCO.

WRITE OR WIRE TODAY for new stock plus free consumer literature.

ELECTROVOX COMPANY

424 MADISON AVENUE, NEW YORK CITY

WALCO
Sapphire Needles

TUBE CHART—The new RCA receiving tube characteristics chart No. 1275B covers 309 types and is arranged in numerical-alphabetical order. An extremely handy reference for servicemen and dealers. Readers can obtain a copy by writing to the Commercial Engineering Section, RCA Manufacturing Co., Inc., Harrison, N. J.

SPEAKER CATALOG—Cinaudagraph Speakers, Inc., Stamford, Conn. releases an 8-page catalog containing specifications and data on its full line of reproducers. Free copies are available on request. Mention *Radio Retailing*.

VOLUME CONTROL FOLDER—International Resistance Company has just come out with a new folder on the IRC replacement volume control standardization, complete with details on the Master Radiotrician's cabinet and type D Universal tap-in shaft controls.

SALES AIDS—RCA Victor's display kit for the Personal radio contains a colorful assortment of displays, gift boxes and other promotional items, as shown in the illustration. Theme of promotion, "A personal radio is the ideal going away gift for Uncle Sam's recruits."



MANUAL—The Turner Company announces a new 16-page vibrator manual, free to readers of *Radio Retailing*. Contains considerable instructive data, and a large replacement vibrator list.

CAPACITOR CATALOG—Cornell Dublier Electric Corp. have just released its new catalog No. 185A. Features compact listing for the busy serviceman or engineer.

Distribution News

ADMIRAL—Appoints the following firms to its ranks of distributors: A. S. Hatcher Company, Macon, Ga.; C. E. Hamlin Co., 225 North Jackson, Jackson, Mich.; and Walding, Kinnan & Marvin Co., Toledo, Ohio.

GIBSON—Announces the appointments of the following distributors to handle its line of "Freez'r Shelf" refrigerators and electric ranges: F. O. Carpenter & Son, Columbus, Ohio; I. Feldman Co., Providence, R. I.; Fargo Glass & Paint Co., Fargo, N. D.; Radio Accessories, Omaha, Neb.; Glasgow-Allison Co., Charlotte, N. C.; Graybar Electric Co.,

Atlanta, Ga.; McWilliams Hdwe & Furniture Co., Inc., Longview, Tex.; and The Otis Hidden Co., Louisville, Ky.

SOLAR—Harry A. Lasure, 2216 West Eleventh St., Los Angeles, Calif., has just received the appointment as Solar's district manager for the state of California.

RAYTHEON—B. W. Glassman with headquarters at 343 Manufacturers Exchange Building, Kansas City, Mo., is the new Raytheon representative for the states of Missouri, Iowa and Nebraska. He succeeds C. E. Moore who resigned Dec. 1st.

TURNER—Herb Erickson, 14 Biltmore Avenue, Asheville, N. C., is the

new Turner vibrator representative for Alabama, Florida, Georgia, North Carolina, South Carolina and Tennessee.

EMERSON—The concern of Shadbolt and Boyd, of Milwaukee, Wis., has just been added to the roster of Emerson distributors and will cover Wisconsin and upper Michigan territory. Vice-President A. C. Schleiger heads this operation.

RADIO CITY PRODUCTS—Milton Reiner, R.C.P. president, announces the appointment of Ralph Gregory as representative for the states of Mississippi and Tennessee. Also the appointment of Richard A. Hyde who takes over the Mountain states area, including Utah, Colorado, New Mexico and Arizona.

FOR COMPLETE DYNAMIC Signal Analysis

**Use Model 560-A
Vedolyzer With
Model 561
Combination Signal
Generator**

THE MODEL 561 is radio's most complete signal generator — a combination of four essential instruments which every well equipped serviceman should have. It provides (1) A.F. oscillator, 15 to 15,000 cycles. (2) R.F. oscillator. Variable amplitude or frequency modulated. (3) Carrier and modulation monitor. Vacuum tube circuit. A.F. and R.F. oscillators may be used separately or the variable audio oscillator used to modulate the R.F. Percentage of modulation read directly on meter. (4) Frequency modulator. Double image, positive self-synchronizing.

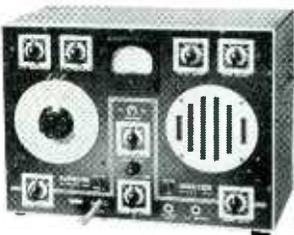
THE MODEL 560-A is a basically different dynamic test instrument using a high frequency 3" scope; 4 stage, wide range, high gain, television, video, vertical amplifiers; multi-range, multi-function, push button controlled, vacuum tube AC, DC ohm and megohm meter; super-sensitive R.F. meter; broadcast, I.F. and oscillator variable tuning section; push button controlled multi-probe input circuit. The Model 560-A Vedolyzer used with the 561 Signal Generator is radio's finest and most complete signal tracing set-up.



**Or Use Model 562
Audolyzer With
Model 561
Combination Signal
Generator**

THE MODEL 562 is the simplest and most logical signal tracing and dynamic tester available. Servicemen everywhere are recommending its use because it will start "paying off" an hour after it reaches your shop. It is not necessary to "take out" a few days and learn to operate your new instrument ONE HOUR with the AUDOLYZER, a test oscillator, and a receiver, and you can tear into those repair jobs you have pushed aside to REST for a while. The AUDOLYZER contains a five inch dynamic speaker for its primary indicating device; a meter to monitor R.F., I.F., A.F., A.V.C., A.F.C., and DC voltages; a two stage tuned amplifier to check frequencies from 95 KC to 14.5 MC; a vernier and step attenuator to control signal level reaching speakers; a vacuum-tube voltmeter to check DC volts from 0 to 1000 volts in seven ranges; an ohmmeter to check resistance from .1 ohm to 20 megohms in 5 ranges; a single probe to be used in any type circuit; dual probes for intermittents.



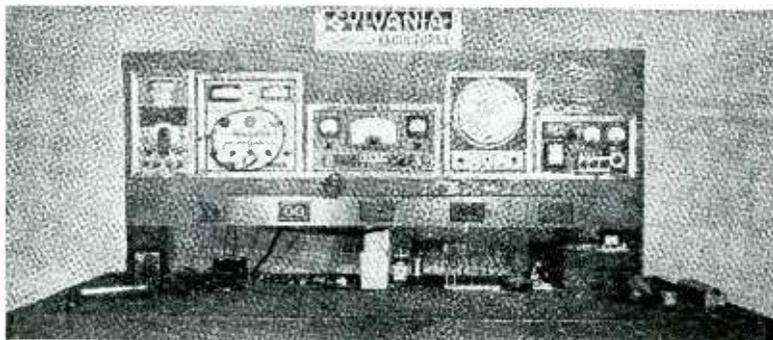
**CHOOSE EITHER
COMBINATION —
YOU CAN'T
GO WRONG!**

SUPREME

MODEL 571 SIGNAL GENERATOR

THE MODEL 571 is the most economical R.F. Signal Generator for those who have a limited amount to invest and yet desire the features and quality incorporated in the higher priced units. It is capable of providing six types of signals with high stability and accuracy. Other features found only in the expensive generators are double shielding, ladder type attenuator, repeating scales, two modulation levels, illuminated dial, speedy and simple operation which makes an ideal economical set-up for dynamic signal tracing and analysis when used with the Model 562 Audolyzer.

**SUPREME INSTRUMENTS CORP.
GREENWOOD, MISS., U. S. A.**



DRAMATIC BILLS—With a photo of a bench on the back of his billheads, George Martin of Newberry, S. C. reminds customers of his shop and equipment

SHOP Photos



NO TIME FOR LUNCH—Shown before on these pages, Ideal Radio of Buffalo, N. Y. has added equipment, now looks like this to the customer



SHOP ON WHEELS—With a repair bench in his trailer, Sam Young, Jr. travels in Missouri, fixes ailing radios wherever he goes

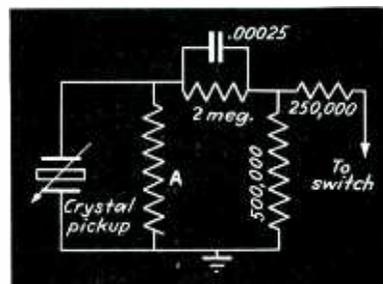
Phono Rumble

Increasing the resistance of a load across a crystal pickup will increase the low frequency response on record reproduction.

However too high a value of resistance may allow rumble from the motor mechanical parts to be amplified. Microphonic noises due to the cabinet resonating with sounds from the speaker may also be reproduced.

If a customer should desire increased low frequency response on records in Wilcox-Gay dual speed models the resistor shown at A in the diagram can be changed to one of two megohms. This value will afford record reproduction at full volume at a safe margin below the borderline of microphonism.

Models with serial numbers under 621520 contain a resistor of 500,000 ohms in this position. All chassis used in dual speed models with serial numbers higher than this now incorporate the two megohm resistor.



Cathode Loaded Driver

We are accustomed to seeing vacuum tubes operated with the load in the plate circuit but the load can also be located in the cathode circuit of the tube to advantage.

A model with this feature is the Pilot model T-133, the audio circuit of which is shown in the diagram. The plate of the 7C7 driver tube is directly connected to the positive B line and the cathode circuit contains the primary winding of the driver transformer.

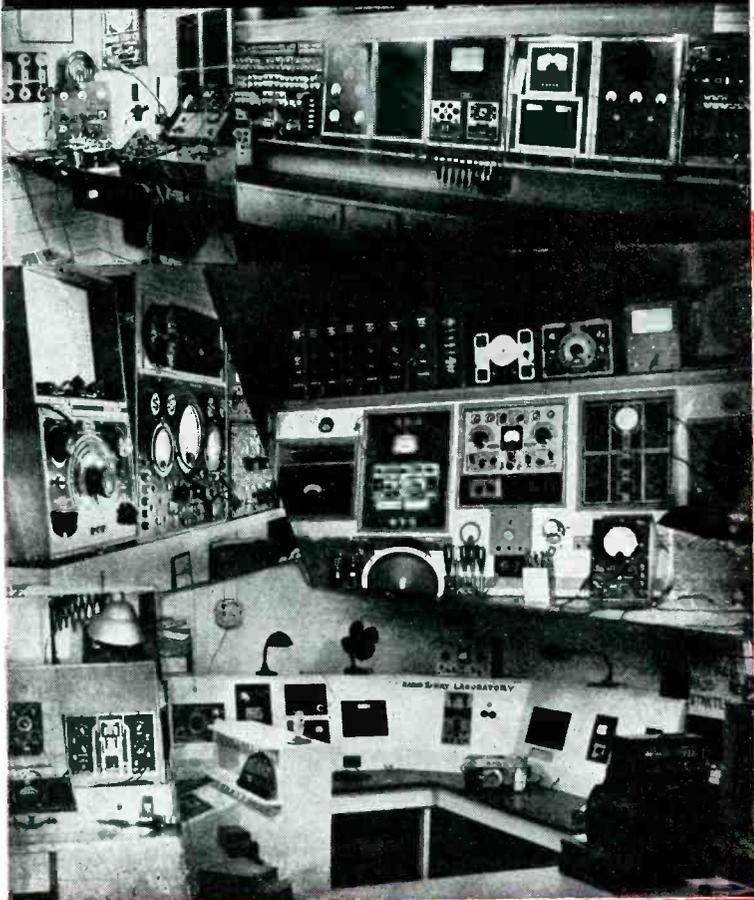
The cathode of course is unbypassed and the output of the tube appears on the transformer primary. The dc resistance of this winding is 1100 ohms and this provides bias voltage for the tube. The inductance of the winding is about 28 henries.

The ratio of the primary to one half of the secondary is 1 to 1 and its dc

NATIONAL

UNION

Celebrates



*A Decade Devoted
to Helping Radio
Service Dealers
obtain
any piece of test
or shop equipment
on any N. U. Deal*

*The Best Equipped Shop in Town
ALWAYS Gets the Business*

*We regard every letter received
from the Radio Service Industry
as our personal mail.

MAKE MORE MONEY IN RADIO SERVICE

Use N. U.

TUBES



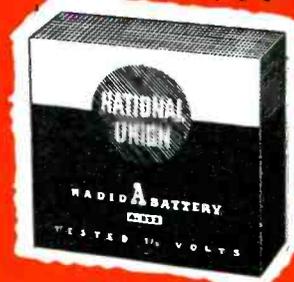
SOUND XTRA TUBES



CONDENSERS



BATTERIES



© 1941 N.U.R. Corp.

ASK YOUR N. U. DISTRIBUTOR OR WRITE* TO

NATIONAL UNION RADIO CORP.

57 STATE STREET
NEWARK, N. J.

10th Anniversary

Over 50,000 pieces of test equipment given away

A CROSS SECTION OF NATIONAL UNION'S Honor Roll of Service Dealers

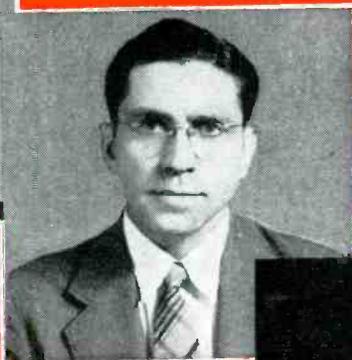
RALPH H. BOLICK, Bellis Gal. & Elec., Housh, Mo.—Have had 20 equipment agreements during the past 7 years. I like to do business with N. U. for I find N. U. products and promotion help outstandingly.

20 Contracts



41 Contracts

LOUIS E. CORNER, Radio Serv. Manager, Piper & Taft, Seattle, Wash.—After using thousands of N. U. tubes during the past seven years we find that we have had fewer replacements than on any other make. Most of our equipment has been covered by the N. U. warranty.



15 Contracts



E. J. MAGINOT, Boston, Mass. In my opinion, and in the opinion of many other service engineers with whom I am associated, N. U. enjoys a prestige which needs no apology. Modern radio sets demand modern testing equipment. N. U. supplies it liberally.



14 Contracts

J. G. COONEY, Cooney Radio Co., St. Louis, Mo.—Thanks to N. U. Equipment Deals my shop is one of the most completely equipped testing laboratories in the city. I find N. U. products are the quality products in the industry and continually recommend them to other dealers.



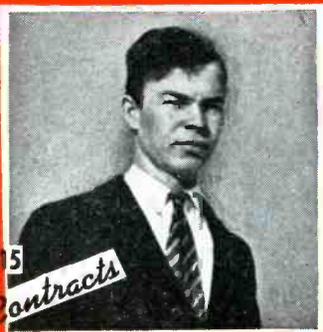
CLARENCE F. ESTEL, The First Shop, Lima, Ohio—I believe N. U. equipment deals are the biggest contribution any manufacturer has ever offered to the radio service profession. In spite of most honest competition I call at full list price because I can offer more for the money.

15 Contracts



23 Contracts

J. E. STAGE, Langston Radio Sales & Service Co., Langston, Wash.—Think your Free Equipment Plan great—Have signed 23 N. U. Equipment Deals—Have been using N. U. program 9 years. N. U. tubes all check alike—rarely have to make replacements.



15 Contracts

VERNON H. HOOK, Barre, Vermont—N. U. has something in Free Equipment Deals that no other manufacturer can offer—One of the largest items of expense to the dealer is up-to-date test equipment—What way could be easier than selling N. U. products?



29 Contracts

MATHEW J. REBLOWITZ, Juvon Radio Shop, Milwaukee, Wisconsin—I find in checking my records I signed 29 contracts. There is no better way for a serviceman to painstakingly acquire good service equipment. In my 10-years of exclusive dealing with N. U. their products have always been satisfactory.

NATIONAL UNION, the Choice of Leading Technicians



**MODEL 450
"TEST MASTER"**

Here the Model 300 is broadened to cover set testing. In addition to the tube tests of the No. 300 it has, as a set tester, 8 A.C. voltage ranges; 5 resistance ranges; 5 milliamp ranges; 5 Decibel ranges. Your net price..... **\$3975**

MODEL 300 TUBE TESTER

Here is a typical Simpson value. Tests locals, single ended tubes, bantams, midgets, miniature, ballast tube, gaseous rectifiers, Christmas bulbs, etc. Filament voltage from .5 to 120 V. Has three-way switching, neon short check, "good" and "bad" scale; percentage scale; tube charts in cover. Your net price..... **\$2650**

Who builds the best testers?

AFTER all, there can only be one *best* in any field. Who makes it? Who makes the best automobile—or screwdriver—or anything you need?

People are asking that question with more intensity today than they ever asked it before . . . and they *should*. Twenty years ago, when every manufacturer worked with practically the same materials and methods that everyone else in his field used, the best thing in any field was almost necessarily the highest priced thing available. But in recent years people have had their eyes opened.

Today, materials and methods and ideas are changing so rapidly that the manufacturer who held the lead *last* year may very easily *lose* it *this* year. You have seen makes of high priced automobiles pass into oblivion, not because they were not conscientiously built but because someone saw a "smart way" to make nine hundred dollar's worth of machinery do tricks that three thousand dollar's worth had failed to accomplish!

In the light of examples like that, we invite you to ask the question, "who builds the best testers?" In

seeking the answer forget manufacturers' names entirely and weigh basic worth against basic worth—idea against idea—workmanship against workmanship—record against record—straight through the list of radio testing equipment.

In such a comparison, we feel confident that you will find in Simpson Testers another one of those examples of smarter coordination of materials, methods and ideas that is re-shaping the trend of an industry.

Why? Because we came into the field with unsurpassed experience, but with a totally *fresh* viewpoint. That combination of advantages inspired the finer Simpson basic meter with bridge-type construction and soft iron pole pieces . . . the Roto-Ranger idea . . . the three-way switching idea . . . the "replaceable unit" idea . . . the countless other ideas that jolted testing equipment out of the rut into which it had fallen.

Three examples of this—but only three of the many—are illustrated here. Consider the *extra value* that these instruments represent and you have the answer to that vital question: "Who makes the best?"



**MODEL 400
TUBE TESTER**

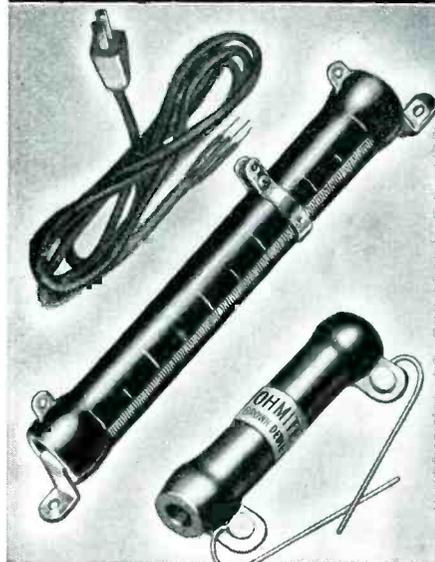
A useful and impressive instrument. "Unit design" guards against obsolescence. Note visual guide tied in with new, Simpson speed-roll chart. Has three-way switching. Your name engraved free on panel at net price of..... **\$3600**

SIMPSON ELECTRIC COMPANY
5216-18 Kinzie Street, Chicago, Illinois

Simpson

INSTRUMENTS THAT STAY ACCURATE

For the Best of Service
OHMITE
RESISTANCE UNITS

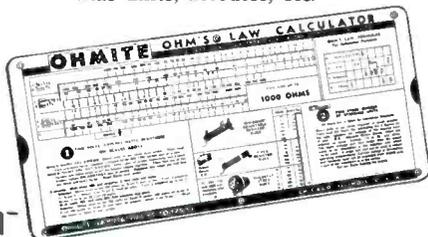


Servicemen and Engineers everywhere have standardized on Ohmite Resistance Units for dependable, trouble-free performance. See Your Jobber for:

Cordohms—replace internal voltage dropping resistor in AC-DC radio sets. Also Tapped Cords for pilot lights.

Dividohm Resistors—Easily adjusted to resistance you want.

Brown Devils—10 and 20 watt resistors for voltage dropping, bias units, bleeders, etc.



New OHMITE Ohm's Law Calculator

Solves any Ohm's Law problem with one setting of the slide! No slide rule knowledge required. All direct readings. Only 10¢ to cover handling cost. At your jobber or send coupon.

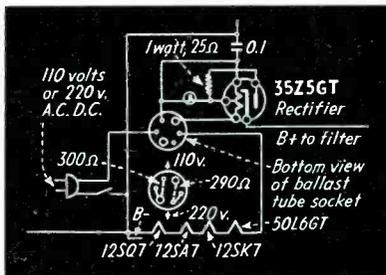
Ohmite Manufacturing Company
4872 Flournoy Street, Chicago, U.S.A.
10¢ in coin enclosed. Send Ohm's Law Calculator.

Name
Address
City State
Occupation
Radio Ret.—Feb.

OHMITE
RHEOSTATS RESISTORS TAP SWITCHES

marked 220 V on one side and 110 V on the opposite side.

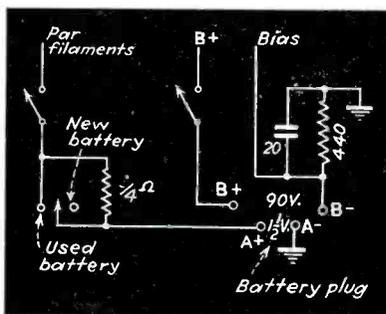
To operate the radio on a 220 volt line the ballast is inserted in the socket with that marking facing toward the rear of the chassis.



As shown in the diagram this position connects the 300 ohm and the 290 ohm resistor sections of the ballast in series with each side of the power input circuit of the receiver for operation at the higher line voltage.

When it is desired to operate the receiver on 110 volt lines the ballast can be removed from the socket, turned around to show the 110 volt marking to the rear of the chassis, and reinserted.

The jumper connections shown are now connected to the terminals that formerly held the resistor sections and the line voltage operates the receiver without a ballast resistor. The two resistor sections are now open-circuited to the bottom pins of the socket in the diagram.



Battery Saver

Battery-saver circuits have been used by several manufacturers in portable receivers. Most of these have been resistors connected in the negative B line to increase the bias to the power tube and thus lessen the current drain on the B batteries.

A switch or plug usually shorts these resistors to lower the bias when it is desired to obtain greater volume for the set.

In the Farnsworth models BT-41 and BC-45 an A battery saver is incorporated. Inserted in the filament line to the tubes is a $\frac{1}{4}$ ohm resistor to drop the voltage to the tubes. When the A batteries are new this resistor remains in the circuit.

As the battery ages and its voltage starts to drop the resistor can be shorted out as shown in the diagram.

BRACH Antennae

Automobile
Home — All types
F-M Systems
Television
Police • Marine
Multiple Systems
Complete Kits
Accessories

Made by World's Oldest and Largest
Manufacturers of Radio Aerial Systems

L. S. BRACH MFG. CORP.
55 DICKERSON STREET
NEWARK, N. J.

Simplest

WAY TO REPLACE
BALLASTS

- 4 STANDARD TYPES of Amperite Regulators replace over 200 types of AC-DC Ballast Tubes now in use.
- Not to be confused with ordinary dropping resistors. Amperite actually regulates.
- Amperite Regulators are equipped with a patented Automatic Starting Resistor which prevents initial surge and saves pilot lights.
- Amperite AC-DC Regulators; List \$1.00. Amperite Replacements for 2V Battery Set ballasts List \$1.25

WRITE FOR REPLACEMENT CHART "S"

AMPERITE ©. 561 Broadway, N. Y. C.

AMPERITE

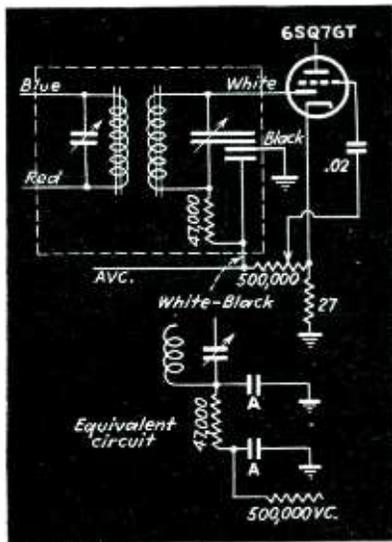
R-F Bypasses In I-F

The schematic diagrams of the new Motorola auto radio models show an interesting trimmer condenser in the last i-f transformer.

The equivalent circuit, shown at the bottom of the diagram, shows that what are apparently extensions to the trimmer condenser of the diode transformer are in radio terms the r-f bypass condensers commonly shown at the points marked A.

Since these r-f filters are contained in the transformer shield only the audio signal and the avc voltage developed by the diode appear on the leads that extend through the shield. Also included in the shield is the 47M ohm resistor that forms a portion of the filter circuit.

For ready reference the colors of the various leads are shown in the schematic. It will be noted that white is the diode plate lead and black the



common ground connection of the r-f filter condensers. Audio and avc voltages are taken off through the white-black lead.

Not shown in this diagram, a resistor will be found in the tube heater circuits in these models. The hot battery lead supplies the vibrator power supply and a low ohmage resistor is connected ahead of the tube heaters in the filament supply lead. This series resistor helps keep the heater voltage at a safe value to prevent damage to the tube filaments.

Factory Changes

Several of the straight a.c. Emerson models contain a loop or link circuit in the negative return of the power supply.

This consists of a single loop of wire that is placed on the underside of the chassis near the power transformer. The coil so formed allows the small amount of a.c. current flowing in it to buck against the leakage

lines of the transformer. Proper adjustment of this link will allow operation of the receiver with minimum hum.

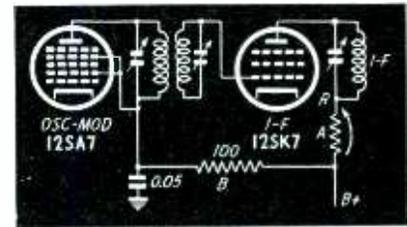
Replacement of parts in servicing these sets may change the position of the loop and adjustment may then be necessary. Later models of these sets do not employ this link circuit.

The factory suggests a change in the i-f stage of Farnsworth models BT-52, 53, 54, 55 and 56.

Early production of these models contain a 100 ohm resistor at point A in the diagram, the primary circuit of the second i-f transformer.

Better results may be expected if

the resistor is removed from this circuit and connected at point B. In this latter position the resistor more effectively decouples the two stages and helps prevent interaction of the tube circuits through the common power supply.



SERVICING by SIGNAL SUBSTITUTION

As Simple As

A alert service engineers everywhere, acclaim this new simplified method of dynamic receiver analysis...

B ecause "S-S-S" requires NOTHING COMPLEX TO LEARN... is UNIVERSAL... NON-OBSOLESCENT... and above all...

C ost is low... Performance high... "S-S-S" employs ONLY BASIC TEST EQUIPMENT... NO EXTRAS TO PURCHASE.

Every necessary facility for modern servicing (AM & FM) can be provided by a proper selection of ONLY 2 BASIC TEST INSTRUMENTS. The Signal Generator (such as PRECISION Series E-200)... The Tube Tester and the multi-range meter (such as PRECISION combinations Series 920 or 954).



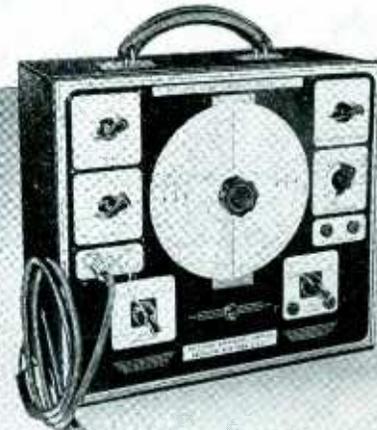
★ Series 954 Combination Dynamic Mutual Conductance Type Tube Tester and 20,000 ohms per VOLT Multi-Range AC-DC Set Tester

A complete service laboratory answering the demand for a compact unit with every facility for accurate, reliable solutions of all tube test and measurement problems (A.M., F.M. and Television). A single master rotary range selector permits simple, rapid measurements in troublesome stages, quickly localized through "Servicing by Signal Substitution."

954 MCP—in open face portable metal case (illustrated for Series E-200). Complete with battery and extra high voltage test leads **\$61.95**

954 P—(illustrated above) Hardwood case. Complete **\$65.95**

954 PM—Standard panel mount. Complete **\$65.95**



★ Series E-200

Modern Laboratory Type Multi-Band Signal Generator

Not only an unsurpassed Signal Generator for purposes of receiver alignment, but SPECIFICALLY DESIGNED as the key to "Servicing by Signal Substitution"... Nevertheless priced within the easy reach of every progressive radio service engineer.

E-200—(illustrated)—in heavy gauge metal cabinet, complete with tubes, coaxial output cable and FREE copy of "Servicing by Signal Substitution" **\$35.95**

E-200PM—in standard panel mount, complete **\$39.95**

FREE A 120 page text book "Servicing by Signal Substitution" describes this simplified approach to receiver adjustment problems. Furnished FREE with every PRECISION Series E-200. Also available at leading distributors or directly from factory at 35c — Write for it today!

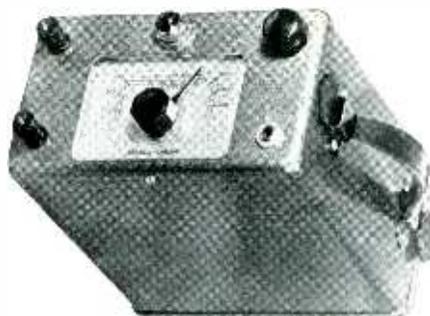
More than 40 models in the New PRECISION 1941 LINE... 21 Dynamic Mutual Conductance Type Tube Tester and Set Tester models ranging in price from as low as \$29.95... 16 Multi-Range Tester models from as low as \$14.95... Signal Generators from \$35.95... See them at your local distributor... Ask or write for the PRECISION TEST EQUIPMENT 1941 CATALOG.

PRECISION TEST EQUIPMENT

Standard of Accuracy SEE THEM AT YOUR JOBBER
PRECISION APPARATUS COMPANY • 647 KENT AVENUE • BROOKLYN, N. Y.
Export Division: 458 Broadway, New York City, U. S. A. Cable Address: Morhanex

AVIATION RECEIVER Model-501

Beams-Weather Reports-Traffic Control-Some Broadcast
Tuning Range—195KC to 605KC



List Price
Complete with
Batteries and phones

\$34.95

WEIGHT—Complete with batteries—6½ lbs.

SIZE 4" x 6" x 8"

ALSO FEATURING—Super-het circuit—three gang tuning condenser—R. F. stage for sensitivity, selectivity and image rejection—Uses: 3 standard No. 2 flash light cells (life 70hrs.)—1 standard 45 volt No. 482 Minimax "B" (life 200hrs.).

Illuminated dial and pilot indicator—Completely shielded for noise free reception—Ideal for portable use—Compact for dash installation.

DISTRIBUTORS—Dealers—Write for information.

2233 University Ave.

SETCHELL CARLSON, INC.

St. Paul, Minnesota

NEW YORK SALES

Ben Joseph
258 Broadway
New York City

Michael Wolfe
1530 East Genesee St.
Syracuse, New York

EXPORT SALES

Harry J. Scheel
The Merchandise Mart
Chicago, Ill.

CALIFORNIA SALES

E. J. Watkins
580 Market St.
San Francisco, Cal.

M. D. Ealy
1425 South Flower
Los Angeles, Cal.

A. C. CURRENT ANYWHERE!



In CARS
On FARMS
In D. C.
DISTRICTS

with **ATR D.C.-A.C.**
INVERTERS

Available in capacities from 15 watts to 500 watts in more than 75 different types for every possible need—Radio, Phonographs, Television, Electrical Appliances, etc.

A T R Inverters have a proven background for performance, reliability, and high quality. Insist upon A T R Inverters—a quality product at a low price.

JUST OFF THE PRESS

ATR
1941
CATALOG

Write for Your
Free Copy Today

AMERICAN TELEVISION & RADIO CO.
ST. PAUL, MINNESOTA.

If he sells

RADIO

and other

modern home equipment,

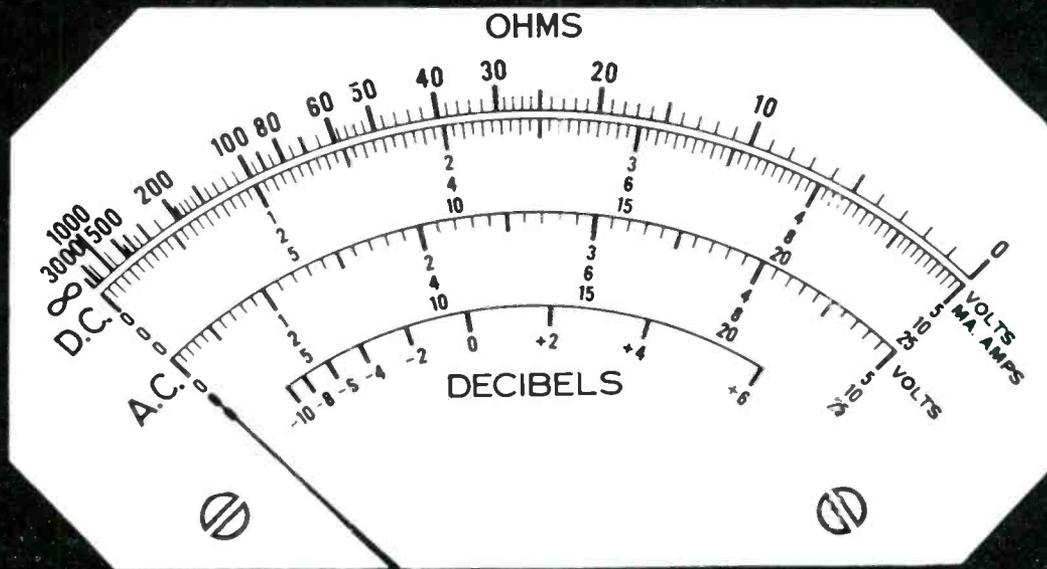
he's the

LIVEST DEALER IN TOWN!

And **RADIO RETAILING** is
his preferred trade paper

How Modern TEST INSTRUMENTS

Save You Money



THEY PERMIT MORE ACCURATE ESTIMATES

The customer can be told within closer limits how much the work will cost

THEY REDUCE REPAIR TIME

Finding the exact trouble is half the job so a labor saving may be passed along to the customer

THEY SHOW UP WEAK PARTS

Replacements may frequently be installed before complete failure occurs, avoiding more costly breakdown

THEY CHECK THE FINISHED JOB

The repaired receiver's sensitivity, selectivity and tone can be brought back to the original factory standard

RADIO and Television
RETAILING

Good TOOLS Are the Hallmark of Good **RADIO SERVICEMEN**

240
 PAGES, LISTING
9,891
 RECEIVER MODELS, MADE BY
224
 SET MANUFACTURERS

In this New



No longer is it necessary to wonder what replacement I-F Transformer to use in any superhet! Just refer to this first complete I-F TRANSFORMER REPLACEMENT MANUAL and you'll have the answer in a jiffy!

Every superhet ever made, on which data could be obtained, is listed by manufacturer and model number; original part numbers on the transformers, original I-F peak frequency AND the number of the Meissner Transformer recommended for replacement—are all given in handy tabular form 210 pages of them! Special connections or service notes are given when necessary.

AND MORE—

Fourteen pages of solid information give the most complete data ever published on the various types of I-F Transformers, their peculiarities of construction, problems met with in servicing and replacing them, elimination of undesirable oscillation and regeneration, and a thorough discussion of all kinds of service problems concerning the I-F Channel. Together with other pages of useful tables and data, this book contains 240 pages in all! It is truly a MANUAL of indispensable information for the serviceman—a tool no modern worker can afford to be without!

Get your copy from your Jobber at once—or send 25c directly to the address below. Your Manual will be mailed to you immediately, postpaid.

Write Today for Free General Catalog

Address Dept. R-2



How the DISCRIMINATOR Operates

ALL about FM detectors and their operation

By JOHN M. BORST

FM SIGNALS can be detected by first converting them to amplitude-modulated signals by means of a "slope filter" and then detecting them in a normal manner.

This conversion should of course take place after the signal has passed through the selecting circuits and the limiter otherwise the benefits of frequency modulation would not be realized.

The simplest slope filter is nothing but an oscillatory circuit which is slightly out of tune with the carrier of the incoming signal. The circuit must be carefully adjusted so that the carrier frequency falls at the middle of the resonance curve's slope as at A in Figure 1. One might with equal results employ the other side of the resonance curve.

When now the frequency varies between C and D in Figure 1, the r.f. current would vary between the values P and Q. The voltage drop across the coil in the circuit is proportional to the r.f. current and so the detector is supplied with an amplitude modulated signal. The frequency modulation has not disappeared, the signal now carries both types of modulation.

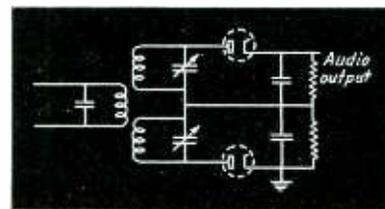
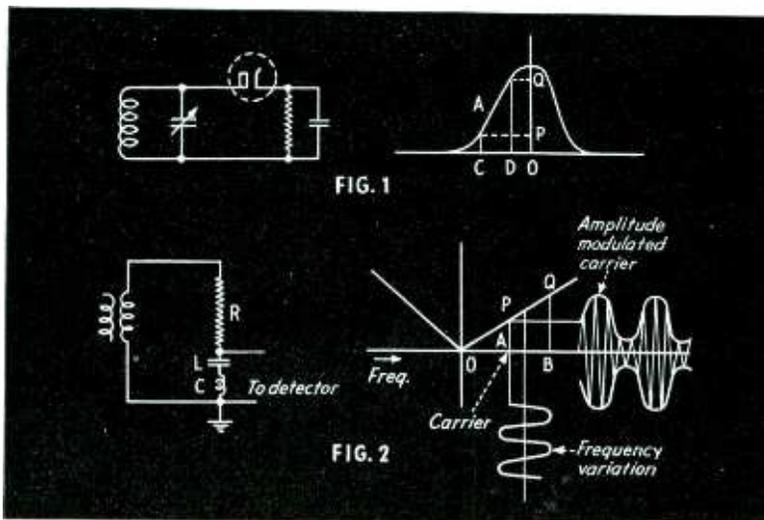


FIG. 3 — Secondaries resonate near peak frequency swings

In order to have the least possible distortion, the part of the characteristic utilized must be a straight line. Therefore, in Figure 1, one cannot let the frequency deviate more than from C to D which means that the amplitude can only vary from OP to OQ. Thus, the frequency deviation cannot be translated into 100 percent amplitude modulation with this type of detector.

Constant Current

An improvement in this direction was made by Armstrong in his early receivers. The detector employed is illustrated in Figure 2. The modulated signal is applied to a series arrangement of a resistor, an inductance



FIGS. 1 and 2—Simple FM detectors and their action

and a condenser as illustrated.

The resistor is so high in value that the current flowing in the circuit is practically constant since the impedance variation of L and C with frequency is only a small part of the total impedance in the circuit. L and C are adjusted to resonate to one extreme end of the frequency swing. That is, it may be either the highest or the lowest frequency ever reached by the signal.

The variation of the impedance presented by the LC combination is shown in Figure 2. At the resonant frequency the impedance is zero and it increases approximately linearly when the frequency is varied. Since the current is kept constant, the voltage drop across LC varies as the impedance so the characteristic of Figure 2 also shows the relation between voltage drop across LC and the frequency.

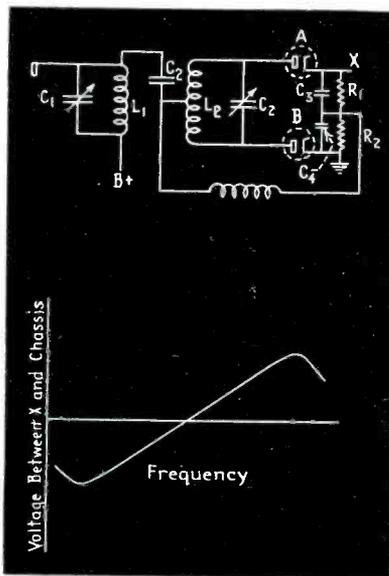


FIG. 4—Popular discriminator in use

An unmodulated carrier would have a frequency indicated at A and the voltage drop across LC would then have the magnitude AP. When the frequency varies between O and B, the amplitude will vary between zero and BQ. This represents 100 percent modulation.

Armstrong used two of these units in push-pull so as to eliminate some of the possible distortion due to non-linearity of the characteristic.

Two Frequencies

A third system is shown in Figure 3. The last i.f. transformer, the one following the limiter, has three windings. The two secondaries are separately adjusted to resonate at the upper and lower frequency or rather somewhat beyond the upper and lower frequency ever reached by the signal. Each secondary is connected to its own detector and each works somewhat like the detector shown in Figure 1.

The diode loads are so connected

that one obtains the difference between the voltage drops across them, which is equivalent to connecting them in push-pull. When the carrier is unmodulated, the two detectors receive equal signals and the difference is zero. During modulation, the frequency shifts first in one direction causing it to approach the resonant frequency of one circuit while moving away from the resonant frequency of the other circuit. Thus the rectified currents in the diode circuits now are no longer equal.

When the frequency swings in the other direction the conditions are reversed. The diode which first obtained the largest signal now receives

the smallest and the difference between the rectified voltages is now of opposite polarity. In this manner a frequency-modulated signal is translated into an audio signal.

One Frequency

The most frequently used "discriminator" employs but two tuned circuits which are tuned alike to the carrier of the incoming signal. This one as well as the circuit just described was borrowed from afc technique. This type seems little understood by servicemen therefore a more complete explanation is given here.

The detector consists of two tuned

To Simplify Resistor Replacements...

***Only \$6.00 list for two each of these 5 universal sizes.**

Use Adjustable 10-Watt resistors for the Hard-to-Stock Sizes!

CLIMATE-PROOFED
IRC Power Wire Wound Resistors are made in a complete range from 5 to 200 watts—all standard types having the famous IRC "Climate-Proofed" Cement Coating to guard against the most common cause of power resistor failure.

Sure you try to stock frequently used resistor values in half, one and two watt sizes, but it's difficult to have them all on hand at all times, and it's tough to hold up a job while you wait for the one you need. Stock a couple each of the IRC type ABA adjustable ten watters, 500 - 1000 - 2500 - 5000 - 10,000 ohms,* each of them adjustable by moving the slider for any resistance value up to the maximum.

These five units will handle any wattage requirements up to 10 watts and any resistance value from 50 ohms to 10,000 ohms. Use the low range units for high wattage-low resistance requirements because in all cases the wattage rating is based upon the full length of the resistor.

IRC Type ABA 10-watt Adjustable Resistors are made in all popular ranges from one ohm to ten thousand ohms and list at 60c each.

POWER WIRE WOUND RESISTORS

INTERNATIONAL RESISTANCE CO., 401 N. Broad St., Philadelphia, Pa.

Its British!

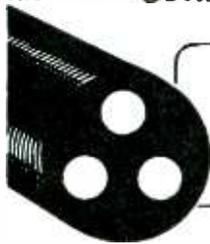


**THREE CORE
SOLDER**
from England

Air-Raids? Yes! But just the same we are busy manufacturing our Ersin Multicore Solder for the leading British Radio, Electrical, Lamp and Aircraft Manufacturers. These firms have abandoned the usual single cored Rosin or Acid cored solder as obsolete. They save time and money and obtain greater efficiency by using Ersin Multicore Solder.

Multicore Solder Wire is made in 13 gauges from .128 inches to .028 inches. It contains three independent cores of ERSIN flux. Multicore construction gives more even flux distribution with apparent lower melting point and ensures flux continuity. Ersin flux is guaranteed non-corrosive (approved by British Air Ministry and General Post Office), gives much quicker fluxing action than rosin and avoids "high resistance" joints.

**ERSIN
MULTICORE**
THE FINEST *Solder* IN THE WORLD



FILLED WITH
NON-CORROSIVE
ERSIN FLUX

We invite responsible American Radio, Telephone and Electrical Apparatus Manufacturers to write, cable or telephone to us for full details and free samples. Please state alloy and gauge used. Immediate despatch. Prices quoted on 1-15 ton lots delivered New York.

MULTICORE SOLDERS LIMITED
BUSH HOUSE, LONDON, W.C. 2, ENGLAND

Cables: Dustickon, Bush, London
Telephone: England, London, Temple Bar 5583/4

Limited range of samples obtainable from
M. H. Kelsey, 6604 Buckingham Place, Cincinnati,
Ohio, U.S.A.

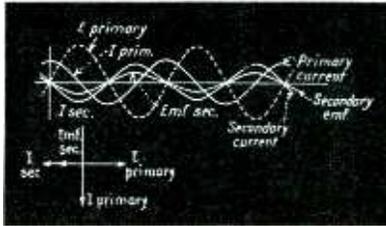


FIG. 5—Phase relations in the circuits

circuits, the secondary being center-tapped (see Figure 4). Two diodes are so connected to the secondary, that the voltage applied to diode A is equal to the voltage drop across the primary plus the voltage drop across the upper half of the secondary. The voltage applied to diode B is equal to the voltage drop across the primary plus the voltage drop across the lower half of the secondary.

Tracing the circuit for each diode, first diode A, start from B + which is kept at a constant (zero) r.f. potential, pass through the primary, the coupling condenser C², the upper half of the secondary, the diode A, through C³ and C⁴ to chassis and back to B + through the power supply filter.

The circuit of diode B comprises the primary coil, the coupling condenser C², the lower half of the secondary, which is connected in opposite polarity compared to the upper half, and diode B. The d.c. circuits of both diodes are completed through their loads and through the choke back to the center-tap of the secondary.

Phase Relations

The diode loads are again so connected that the output at X is equal to the difference of the voltage drops across R¹ and R². It remains now to show why the output varies directly as the frequency.

Consider first the case when the

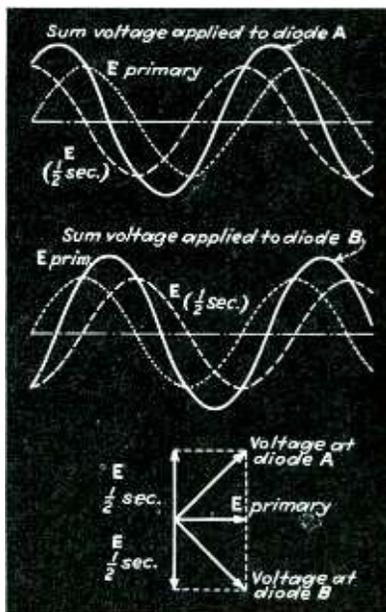


FIG. 6—Signal frequency equal to resonant frequency of circuits



"Make mine an
OXFORD, Joe"

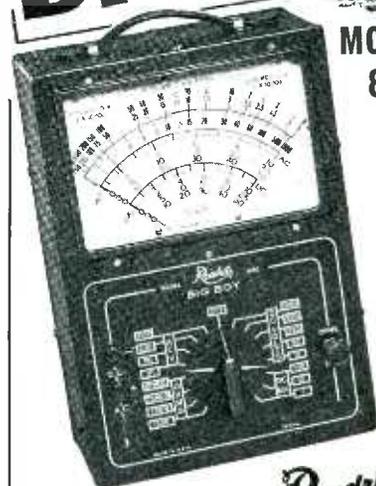
In the morning line-up at your jobber's counter speak right up and insist on OXFORD . . . the choice of thousands of servicemen who know what they are talking about. If you MUST get technical, these speakers have all the necessary response that makes them stand up "ace high" on the testing panel . . . but better still (from your standpoint) they enable you to make more money on every service job that calls for "speaker repairs." It is easier and better to put in a new OXFORD than to "tinker" with the old one.

Get wise to yourself
the OXFORD way.

OXFORD-TARTAK
RADIO CORPORATION
915 W. VAN BUREN ST. • CHICAGO, U. S. A.

BIG BOY

MODEL
860



Performance . . . Eye Appeal . . . Value . . . Sensationally Priced at \$17.85, Dealer Net Price.

Here is an AC-DC Volt-Ohm-Milliammeter with all the ranges you want . . . easily readable on the large 7" instrument with extra-long 6" scale, in a new up-to-the-minute three-tone case. DC Volts 0-10-50-250-500-1000 at 5000 Ohms per volt DC; 1000 ohms per volt AC. AC Volts 0-10-50-250-1000 at 400 ohms per volt; DC Ma. 0-1-10-100; Resistance ranges; 0-1500 Low Ohms; 0-150,000 Ohms and 0-7.5 and 0-15 Megohms. Maroon case with red and silver-panel, attached handle.

Dealer Net Price, \$17.85

For Catalog Write—Section 220, College Drive

READRITE METER WORKS, Bluffton, Ohio

How YOU CAN Turn a Smaller Investment into Bigger Profits



TURNER Han-D Mikes

The Han-D cuts inventories, for this one Mike fills the need of amateur, P.A. man and recorder. Can be used indoors or out,—held in the hand, hung by suspension hook, or mounted on floor or desk stand. Rich brushed chrome finish. Specially engineered response for voice or music. Positive contact slide switch operates every time. With 7 ft. cable, 9X Han-D Crystal, List...\$22.50. 9D Han-D Dynamic, List...\$25.00.

Cash in With TURNER 22X

The Crystal Mike that turns lookers into buyers. Its rich satin chrome finish, tilting head, crisp, clear performance and low feedback make it a "best seller". Write for discounts. 22X Crystal, List \$16.50. 22D Dynamic, List \$20.00.



Crystals Licensed Under Patents of The Brush Development Co.



Send for New Free Turner Microphone Catalog, with Discounts.

Address

The Turner Co.
915 17th St. NE.
Cedar Rapids,
Iowa.

EXPOSED!



It seems that Homer G. Snoopshaw, B.R.S., (Battery Replacement Specialist), hasn't been strictly on the up-and-up in his capacity as Vice-President-In-Charge-of-Replacements. As we understand it, one of the helpers, jealous of Homer's rapid rise in the personnel of Bud's Radio Shop, did a little snooping on the snooper, and found that Homer had a copy of the Burgess Replacement Guide* up his sleeve. The candid camera shot shown above is evidence that Homer can't explain—and *his boss burned up!* We suspect that Homer will soon be "at liberty" again.

Does anybody in the audience need a Replacement Adviser?*

"IT'S FREE"
See Your Burgess Distributor or write Burgess Battery Company, Freeport, Illinois

BURGESS

The Complete Replacement Line

carrier is unmodulated and when the frequency of the incoming signal equals the resonant frequencies of primary and secondary. Now one must trace the relative phases of the currents and voltages in primary and secondary in accordance with elementary a.c. theory.

The voltage drop across the primary coil, LI leads the primary current by 90 degrees, as illustrated in Figure 5 both in vector diagram form and in sinusoidal waves. The e.m.f. induced in the secondary lags the primary current by 90 degrees, this relation is also shown in Figure 5.

Now one must distinguish between an e.m.f. and a voltage drop. An e.m.f. is "whatever it is that makes electrons move". It may be considered as many little generators in be-

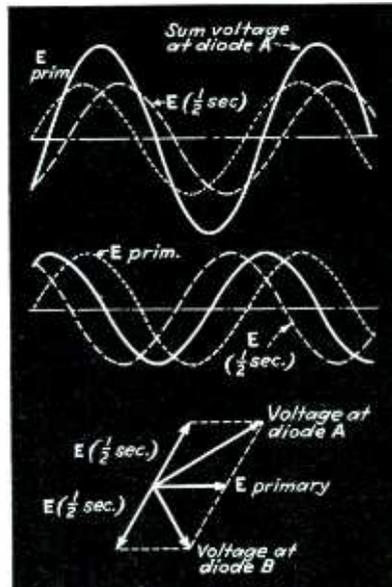


FIG. 7—Signal frequency higher than resonant frequency of circuits

tween the turns of the secondary coil. Since the circuit is closed, the e.m.f. will cause a current to flow and this, the secondary current, is in phase with the e.m.f. because the circuit is tuned to resonance. So far all these phase relations are shown in Figure 5. Now we pass to Figure 6.

The secondary current will cause a voltage drop across the secondary coil and this voltage drop is leading the current by 90 degrees. Now the voltages applied to the diode A consist of the voltage drop across the primary plus half that across the secondary.

These are shown in their proper phase relations in Figure 6 as well as the voltages applied to diode B. When the vector sums are taken for each diode, it follows that the voltages at the two diodes are equal but out of phase.

After rectification, the d.c. voltage drops across R1 and R2 are equal and their difference is zero. Consequently the output voltage between X and chassis is zero.

Now consider the case when the

AEROVOX

offers you

EITHER KIND...



EXACT-DUPLICATE REPLACEMENTS

- Yes, AEROVOX and so many servicemen still insist that there's no substitute for an exact-duplicate replacement. Such a unit, as listed, stocked and supplied through AEROVOX jobbers, always looks right, fits right, works right. It restores the radio chassis to its original, "good as new" condition. And that's precisely what the fussy set-owner wants—and is willing to pay for. All of which accounts for page after page of exact-duplicate replacements still retained in the new 1941 AEROVOX catalog.

GENERAL-PURPOSE REPLACEMENTS

- To simplify matters, however, particularly when a job is "in a hurry", AEROVOX offers the so-called general-purpose or universal replacements. Midget metal-can electrolytics, cardboard-case electrolytics, medium-sized and large can electrolytics, paper tubulars, uncased paper sections—AEROVOX provides everything and anything you want.

Ask Your Jobber...

- He'll gladly show you what's what in exact-duplicate replacements and general-purpose replacements. Ask for latest catalog—or write us direct.



incoming frequency has temporarily become higher than the resonant frequencies of primary and secondary. In the primary the voltage and current still have the same phase relations and the e.m.f. induced in the secondary is still of the same phase as shown in Figure 5. But now, since the frequency of the signal is too high, the secondary current is not in phase with the secondary e.m.f. but instead

it will lag behind this e.m.f. by an angle less than 90 degrees. For the same reason, the voltage drops across the secondary sections will also be retarded in phase.

These new relations are shown in Figure 7 and the vector sum for each diode has been worked out again. Now the voltage applied to diode A is larger than the one applied to diode B and there will be a difference between the voltage drops across R1 and R2, so as to make X positive with respect to the chassis.

When the frequency is temporarily below the carrier frequency, the secondary current will lead the induced e.m.f. and the secondary voltage drops are also advanced in phase. These conditions are shown in Figure 8 where it is seen that the vector sum for voltages applied to diode B is larger than the one for diode A. In this case the output voltage at X will be negative with respect to the chassis.

When the output voltage is plotted against frequency we obtain the familiar characteristic of Figure 4. This type of circuit has properties which resemble those of ordinary coupled circuits. The separation of the two peaks depends on the coupling between the two circuits and the Q of both. The sensitivity depends on these same factors and also on the turns ratio.

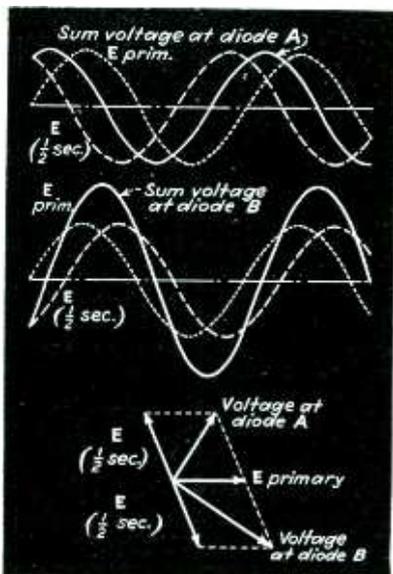


FIG. 8—Signal frequency lower than resonant frequency of circuits

TRICKS of the TRADE

BELMONT 550

Plate voltage drops to about 80 volts after chassis heats . . . examine i-f input transformer. Lugs inside can may short to windings and feed plate voltage from the 2A7 coil to the 58 grid coil. Bend lugs away or cut off ends.

CROSLLEY 1117

Noisy tuning . . . belt drive shaft causes crackling. Put drop of solder on the inner end of this shaft. Bolt a flat spring to chassis so that it presses against drop of solder and grounds shaft.

Noisy tone control . . . ground control shaft with flexible lead.

CROSLLEY 1516

Replacing volume control . . . original dual control can be replaced with a single control. Use one meg tapped control to replace front section, leaving out resistor connected from low side of control to ground. Connect one meg resistor in place of rear section. Also applies to other Crosley models with a dual control.

EMERSON PORTABLES

Operate on battery, not on ac . . . defective choke in power supply.

Famous HOWARD Chassis NOW AVAILABLE FOR REPLACEMENT MARKET!

Thrilling performance of the famous HOWARD Receivers is now obtainable in chassis form for servicemen and dealers to modernize old radios or to install in custom cabinets. Designed by the same engineers who are building HOWARD Communication Receivers, these household models are outstanding for their full tone, ability to get long distance and attractive appearance.

Available in sizes from 5 to 12 tubes. All have phono inputs, built-on loop antennas, Howard-Jensen speakers, illuminated dials, complete fittings, etc. Recording chassis have output for recording arm, mute switch for monitoring, microphone input and two inputs for phono pick-ups. Switching arrangement permits recording radio, radio and mike, duplicating recordings with or without mike accompaniment and use as sound system.



INCREASE PROFITS WITH THE HOWARD CHASSIS LINE — WRITE TODAY!

HOWARD RADIO COMPANY

1731-35 Belmont Ave., Chicago, Ill. Cable Address: HOWARDCO., U.S.A.

America's Oldest Radio Manufacturer

ONAN ELECTRIC PLANTS ALTERNATING AND DIRECT CURRENT

Furnish Electricity for operating LIGHTS, RADIO TRANSMITTERS and RECEIVERS, Motion Picture Projectors, Telephonic Communication Systems, Sound, News and Advertising Cars, X-Ray, Medical and Dental Equipment. Promote sales of Radio and Electrical Apparatus in places remote from Power line service.

ONAN PLANTS are used in many Private and Commercial Enterprises. They furnish electricity for many Departments of the U. S. Federal Government in the present NATIONAL DEFENSE PROGRAM, including Army, Navy, Air Corps and Lighthouse Service.



OVER 40 STOCK MODELS
Sizes available from 350 to 50,000 watts in any Voltage or Frequency. Thousands are in DAILY UNINTERRUPTED SERVICE IN ALL PARTS OF THE WORLD in Homes, Farms, Theatres, Public Buildings—for Construction and Repair jobs and Emergency Standby Service.

PORTABLE or STATIONARY Models in Manual, Full-Automatic or Self-Starting. Send for complete details and discounts.

D. W. ONAN & SONS
634 Royalston Ave. Minneapolis, Minn.

KEN-RAD DEPENDABLE RADIO TUBES

Unsolicited testimonial letters from users enthusiastically praising the performance of Ken-Rad Radio Tubes are constantly received. This proves conclusively their complete consumer acceptance. Write for the Ken-Rad selling plan.

Ken-Rad Tube & Lamp Corporation,

Owensboro, Kentucky

Export Dept., 116 Broad Street, New York, U. S. A.
Cable Address: Minthone, New York

An important feature.
Which cannot be stressed too much.
UNIVERSITY REFLEX SPEAKERS
Have the HIGHEST POSSIBLE
ACOUSTIC EFFICIENCY.* Far
greater than any other type of
loud speaker.



Reflex High Efficiency
Means triple projecting
power (a single reflex
speaker projects sound
clearly over two miles
with only 25 watts).

Reflex High Efficiency
Means fewer speakers (two
reflex speakers easily cover
50,000 people).

Reflex High Efficiency
Means less wattage of
power amplifier (approx-
imately one half usual
power).

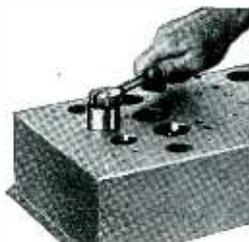
Reflex High Efficiency
Overcomes all background
noise (clear speech, intel-
ligible even in a boiler
factory).

*The UNIVERSITY Reflex Exponential-Drive-
Unit type of loud speakers has the maximum elec-
tro-acoustic conversion efficiency which it is possible
to attain.

UNIVERSITY LABORATORIES
195 Chrystie Street New York City

The EASY Way To Cut Holes In Radio Chassis

NO FILING . . .
REAMING . . .
OR TEDIOUS
DRILLING



Here's a handy tool to help the radio worker
save many hours of work when cutting holes
for sockets, plugs, connectors, and other re-
ceptacles in radio chassis. A cap screw is
inserted in a small drilled hole, and the punch
is easily forced into the die by a few turns
of the cap screw with an ordinary wrench.
Smooth holes, requiring no filing or reaming,
can be cut in metal up to 1/8-inch thick in
1 1/2 minutes or less.

Ten punches are available for cutting 3/4, 7/8, 1,
1 1/8, 1-5/32, 1-3/16, 1 1/4, 1 3/8, 1 1/2, and 2 1/4-inch
holes. A Greenlee Knockout Cutter is also
available for cutting holes up to 3 1/2-inch size
for meters.

GREENLEE TOOL CO.
1708 Columbia Ave., ROCKFORD, ILL.

FADA 61-69

Hum . . . ac leads from ballast to
rectifier (blue-brown) too close to
grid of 6SQ7GT. Lift and rearrange
on opposite side of chassis.

FARNSWORTH BT-22

Crackles when tuned . . . replace
oscillator coil.

GENERAL-ELECTRIC HJ-905

Hum on local signals . . . install .05
mfd condenser across power line input.

GRUNOW 5B

Weak and distorted . . . sealing
compound from filter condenser can
underneath chassis flows between lay-
ers of 25Z5 wafer socket. Replace
with bakelite socket.

PHILCO 37-116

R-f oscillation . . . replace .05 mfd
cartridge type condenser running
down and connected directly to socket
of mixer tube.

PHILCO 84

Volume drops . . . if shock restores
to normal replace condenser bypassing
screen of 77 second detector tube.

PHILCO 41KR

Excessive carrier modulated hum
. . . broken wire in built-in loop.
Check wire under each staple securing
loop to cabinet.

PHILCO PT-29

Oscillates on high end of dial . . .
replace 47M ohm oscillator grid leak
with 25M ohm resistor.

RCA 99-K

Fades after few minutes of opera-
tion . . . the .01 condenser which
couples the antenna coil to the control
grid of the 6A8 partially opens.

RCA 87KI

Volume cuts up and down . . . de-
fective tone compensation condenser.

RCA 98-T

Motorboats . . . dress filter capacitor
leads away from antenna coil.

STROMBERG-CARLSON 535 FM

FM dead . . . open 6500 ohm in
screen circuit of 6AB7/1853 first i-f.
Shorted .01 mfd unit at low potential
end of resistor.

SONORA A-11

Rattles . . . celluloid cover over dial
loose. Remove small rivets that secure
it and replace with small bolts and
lockwashers. Check alignment of
cover and plastic case when reas-
sembling.

Note

The Library com-
prises a selection
of books culled
from leading Mc-
Graw-Hill publica-
tions in the radio
field.



McGraw-Hill RADIO ENGINEERING LIBRARY

— especially selected by radio specialists of
McGraw-Hill publications

— to give most complete, dependable cov-
erage of facts needed by all whose fields
are grounded on radio fundamentals.

—available at a special price and terms

These books cover circuit phenomena, tube
theory, networks, measurements, and other
subjects—give specialized treatment of all
fields of practical design and application.
They are books of recognized position in the
literature—books you will refer to and be
referred to often. If you are a researcher
or experimenter—if your interest in radio is
deep-set and based on a real desire to go
further in this field—you want these books
for the help they give in hundreds of prob-
lems throughout the whole field of radio
engineering.

5 volumes 3319 pages, 2298 illustrations

1. Eastman's FUNDAMENTALS OF VACUUM TUBES
2. Terman's RADIO ENGINEERING
3. Everitt's COMMUNICATION ENGINEERING
4. Hund's HIGH-FREQUENCY MEASUREMENTS
5. Henney's RADIO ENGINEERING HANDBOOK

Special Low Price and Easy Terms

Bought singly, the five volumes comprising
this library would cost you more. Under
this offer you save money and, in addition,
have the privilege of paying in easy install-
ments beginning with \$2.50, 10 days after
receipt of the books, and \$3.00 monthly there-
after. Already these books are recognized as
standard works that you are bound to require
sooner or later. Take advantage of these con-
venient terms to add them to your library now.

SEND THIS ON APPROVAL COUPON

McGraw-Hill Book Co., Inc.
330 W. 42nd St., New York, N. Y.

Send me the McGraw-Hill Radio Engineering Library
5 vols., for 10 days' examination on approval. In 10
days I will send \$2.50, plus few cents postage, and
\$3.00 monthly till \$23.50 is paid, or return books post-
paid. (We pay postage on orders accompanied by
remittance of first installment.)

Name

Address

City and State

Position

Company R. R. 2-41

(Books sent on approval in U. S. and Canada only.)

INDEX TO ADVERTISERS

February, 1941

	Page
Aerovox Corp.	69
Alliance Mfg. Co.	21
American Television & Radio Corp.	64
Amperite Corp.	62
Astatic Microphone Lab., Inc.	51
Brach Mfg. Co., L. S.	62
Burgess Battery Co.	69
Centralab Div., Globe-Union, Inc.	6
Clarostat Mfg. Co., Inc.	54
Edison General Electric Appliance Co., Inc.	24, 25
Electrovox Co.	54
Gale Products	9
Galvin Mfg. Corp.	Back Cover
General Electric Co.	8
Greenlee Tool Co.	71
Howard Radio Co.	70
Hygrade-Sylvania Corp.	43
International Resistance Corp.	67
Kelvinator Div., Nash-Kelvinator Corp.	32, 33
Ken-Rad Tube & Lamp Corp.	70
Mallory & Co., Inc., P. R.	Inside Front Cover
McGraw-Hill Book Co., Inc.	71
Meissner Mfg. Co.	66
Motor Products Corp., Deepfreeze Div.	29
Multicore Solders, Ltd.	68
National Union Radio Corp.	58, 59
Noblitt-Sparks Industries, Inc.	7
Ohmite Mfg. Co.	62
Onan & Sons, D. W.	70
Oxford-Tartak Radio Corp.	68
Permo Products Corp.	44
Philco Radio & Television Corp.	36, 37, 46
Pioneer Gen-E-Motor Corp.	44
Precision Apparatus Corp.	63
Radiart Corp.	72
Radio City Products Co.	52
Radio Corp. of America.	45
Raytheon Production Corp.	3
RCA Manufacturing Co. 34, 39, Inside Back Cover	
Readrite Meter Works.	68
Setchell-Carlson, Inc.	64
Simpson Electric Co.	61
Stromberg-Carlson Telephone Mfg. Co.	2
Sundt Engineering Co.	54
Supreme Instruments Corp.	55
Tri-Par Radio Co., Inc.	72
Triplett Electrical Instrument Co.	50
Turner Co., The.	53, 69
University Laboratories	71
Utah Radio Products Co.	10
Weston Electrical Instrument Co.	4
Zenith Radio Corp.	5

Although Radio & Television Retailing takes every precaution to insure accuracy, we cannot assume responsibility for an occasional change or omission in the above index.

McGRAW-HILL PUBLISHING COMPANY, INC. Publication Office: 99-129 North Broadway, Albany, N. Y. Editorial and Executive Offices: 330 West 42nd Street, New York, N. Y.

RECORD CONTROL

(Continued from page 27)

fluctuations in popularity.

Few dealers understand the advantages of placing standing orders to cover new releases. Such orders enable distributors to determine fixed demand and estimate their supplementary orders more accurately. This means better service for dealers. They receive the new records without delay and in quantities sufficient to enable them to base supplementary orders on several days' observation of the reaction of their trade.

Standing orders also provide enough records to permit immediate promotion of anything outstanding, eliminating costly delay and the possibility of competition having an advantage.

Dealers who have been in the business long enough to check sales for six months, can place such an order without fear of loss. For instance, if check shows a certain band to have an average two-week sale of 50 records on new releases, and the same band's total sales never fall below 50 per item, there is little likelihood of loss from a standing order of that quantity. Such orders should clearly specify that reissues, or numbers foreign to the usual output, are not included.

SELLING INDUSTRIALS

(Continued from page 38)

as distributors, have to pay.

Yes, industrial accounts will buy from you if you can offer them something more than a routine salesman's call. Constant mailings of new catalog sheets for their files, usually accompanied by a short personal letter, shows them that you are on your toes in keeping up to date literature in their files. NOT wasting time in needless calls shows a consideration which the busy executive appreciates, providing you give outstanding service when they ask for it. Cooperating on technical problems with department heads who request it is acknowledged by them by sending you all the business they can throw your way.

Selling a big industrial account is merely dealing with individuals after all. Gain goodwill by service, by offering something different, and plenty of sales will result.



What NEW Aerial fits ALL Cars on fender, cowl or under hood?

RADIART
"ALL-ANGLE"
ALL-PURPOSE
AERIALS
Model A-5 shown

EASIEST possible INSTALLATION

FITS any BODY ANGLE

WATERPROOF Shielded LEAD

MODEL A-5 — all five sections collapse below line of vision, to only 1 inch above the bracket.



Write for Bulletin 197
or order now from your Radiart jobber

THE RADIART CORP.
CLEVELAND, OHIO

SEARCHLIGHT SECTION

— DEALERS — RECORDING DISCS

Metal base—slow burning—thick acetate coating—underwriters approved.

Slightly imperfect recording discs—made by America's leading manufacturer.

Inspected and guaranteed to make fine home recordings.

Ideal for store demonstrations
without labels

SIZE	LIST	Net per 100
6 1/2"	.20 ea.	\$7.00
8"	.30 ea.	11.00
10"	.40 ea.	15.00

SAMPLE ORDER 10 OF EACH
\$3.00 net
F.O.B.

TRI-PAR RADIO CO., INC.
110 N. Wells St. Chicago, Ill.

REPRESENTATIVES WANTED

Representatives for original line of fast selling accessories and records. Please give details of lines now handling and territory. Box RW-148, Radio & Television Retailing, 330 W. 42nd St., New York, N. Y.

REPRESENTATIVE AVAILABLE

New Distributor 5 men covering Metropolitan Area (N.Y.) now handling products of two top manufacturers. Interested in 1 additional line for the better retail outlets. Box RA-149, Radio & Television Retailing, 330 W. 42nd St., New York, N. Y.

Sensation OF THE INDUSTRY!..



and, so far, we've hardly even mentioned its **GREATER METER PROTECTION!**



Is this your D-C Voltmeter?

Not only is the RCA Junior Volt-Ohmyst one of the handiest, most versatile and amazingly efficient instruments on the market today... Not only does it pave the way for faster, more accurate resistance and both a-c and d-c voltage readings... Equally important, special protective features remove much of the danger of a costly meter burnout should you grab hold of more voltage than you had expected or accidentally check a "hot" resistor. Extremely rugged meter construction also guards against mechanical damage. This means that, besides giving you more for your money in the first place, this sensational little instrument *protects your investment*. What's more, the Junior VoltOhmyst will quickly pay for itself in the time it saves on a wide variety of jobs.

A LONG-TIME INVESTMENT IN BETTER, FASTER WORK

The RCA Junior VoltOhmyst is a "junior" in price alone. In actual use it is an instrument that does a man's-size job *plus*. Costing only a little more than you'd pay for an ordinary volt-ohmmeter, it gives you Electronic Push-Pull operation with all the time- and trouble-saving features of the famous Rider VoltOhmyst circuits and with the addition of an isolated A-C Rectifier-type Voltmeter with 1000 ohms per volt sensitivity.

It measures d-c voltages with constant meter impedance of 11,000,000 ohms on all ranges. *This means a sensitivity up to 3,666,666 ohms per volt!* Yet it is extremely stable! It will not disrupt operation of sensitive circuits.

It has six full scale voltage ranges from 3 to 1000 volts and measures resistances from 0.1 to 1,000,000,000 ohms! It eliminates time-taking shorting of leads and zero re-settings when changing ohmmeter scales. One wide-spread ohms scale assures extreme accuracy and easy readability. In brief, the RCA Junior VoltOhmyst provides you with a quick, accurate and easy-to-use means of checking every conceivable A.V.C., A.F.C., FM discriminator circuit, or Oscillator Grid Voltage, *with the signal present*, checking bias cells or insulation resistance, obtaining practically any needed resistance and d-c voltage reading... as well as handling any a-c voltage checking job that might pop up in your work—at an absolute minimum price.

See it at your nearest RCA distributors—or write for bulletin. It is an instrument that no wide-awake technician can afford to miss! Sooner or later, why not now?

RCA Junior
VOLTOHMYST
\$34.95

Net Price Complete. Stock No. 165

SOMETHING TO REMEMBER WHEN YOU BUY TEST EQUIPMENT

Although moderately priced, RCA Test Equipment is not built down "to a price." Instead, it is built up to a standard of efficiency—the highest in the field today. It is designed in the firm belief that the "cheapest" equipment any service technician can buy is the equipment which is quickest to pay for itself in the time it saves him, plus the extra jobs it permits him to handle. Moreover, RCA Test Equipment is built around the famous and pioneer Rider "Signal Tracing" system which replaces old-style, hit-or-miss service methods with a quick, systematic course of procedure. "Signal Tracing" has proved its tremendous value, not only to leading technicians, but to leading laboratories and manufacturing plants as well. It is your safest, surest road to faster, more accurate work with consequent greater profits—and the RCA-Rider Chanalyst, that originally made this system possible, is your "Open Sesame!" to its many benefits.

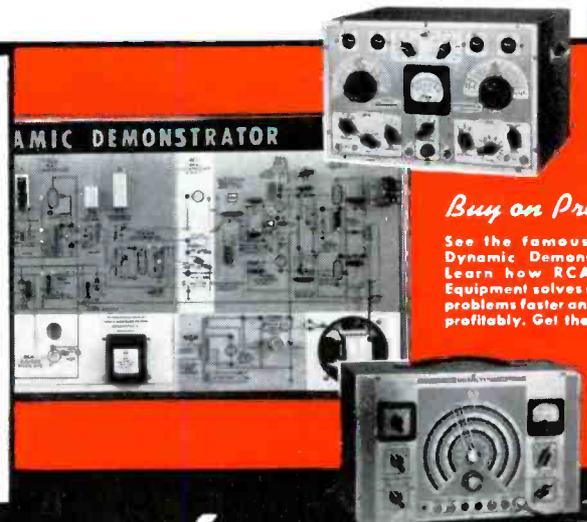
Not what you pay for your Test Equipment—but *what your Test Equipment pays you*. That's what really counts. And RCA's policy of "Minimized Obsolescence" protects your investment!



Test Equipment

YOUR KEY TO SYSTEMATIC
SERVICING FOR GREATER PROFITS

RCA MANUFACTURING CO., INC., CAMDEN, N. J. • A Service of The Radio Corporation of America. In Canada: RCA Victor Company Limited, Montreal



Buy on Proof!

See the famous RCA Dynamic Demonstrator. Learn how RCA Test Equipment solves service problems faster and more profitably. Get the facts!



Motorola Auto Radio



**CHALLENGES
ALL
COMPETITION**

**WINS
ON
DEMONSTRATION**

Free!

This Powerful "TORPEDO"

Demonstration Board

Get Your Complete 1941
Auto Radio Department
Now While Sales Are
Good! See Your Distributor
for Information on How
to Get This Display **FREE!**



3-DIMENSION

VITA-TONE

**MAKES 1941 *Motorola* EASY TO SELL
PAYS WORTHWHILE PROFITS, TOO!**

**BIGGEST NATIONAL
ADVERTISING PROGRAM
50 MILLION READERS**

**SATURDAY EVENING POST
LIFE**

**COLLIER'S
AMERICAN WEEKLY
AMERICAN MAGAZINE
RADIO AND MOVIE GUIDE**

GALVIN MFG. CORPORATION · CHICAGO