

RADIO YEAR BOOK

RADIO *and Television* **TODAY**



SELLING RADIOS • SOUND • SERVICE
WITH RADIO TRADE DIRECTORY

MARCH

Roman

It's out!
the 1940
P. R. MALLORY & CO. Inc.
MALLORY
Replacement
VIBRATOR
GUIDE



...and it's
FREE!

- ★ Up-to-the-minute accurate vibrator replacement chart for all makes and models of auto radio and battery-operated household receivers.
- ★ Complete cross-reference of Mallory Vibrators by make and model of receiver.
- ★ Practical vibrator servicing and testing information with 'scope pictures.
- ★ Auto radio installation and interference elimination in all 1940 model cars.
- ★ Vibrator connection charts.

*Get a free Copy from
your distributor
Today!*

You can save time and money on every auto or battery-operated household radio service job with this Mallory Replacement Vibrator Guide. Don't put off getting your copy. You'll say it is indispensable.

P. R. MALLORY & CO., Inc. • INDIANAPOLIS, INDIANA • Cable Address—PELMALLO

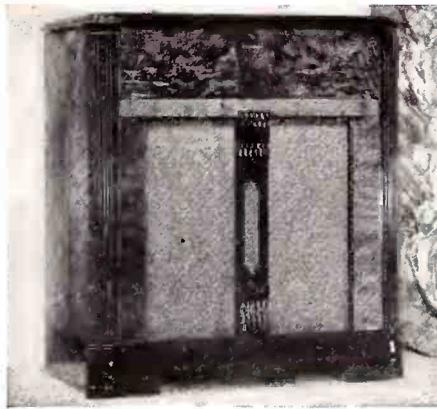
Use
P. R. MALLORY & CO. Inc.
MALLORY
REPLACEMENT
CONDENSERS...VIBRATORS

Use
YAXLEY
REPLACEMENT
VOLUME CONTROLS

MAR 23 1940



SMASH HIT WR-175-1 A beautiful ivory plastic model. 5 tubes. Electro-dynamic speaker. Built-in loop antenna. For AC or DC.



SMASH HIT WR-476 A striking radio-phonograph combination. 6 tubes. 6 tuning buttons. 12" electro-dynamic speaker. Automatic record changer.



SMASH HIT WR-475 A fast selling portable radio-phonograph combination. Electro-dynamic speaker. 10" or 12" records.

8 MORE SURE FIRE HITS★

★ Sure fire hits because all 8 are styled, equipped and priced to sell fast like the 1940 models that established new all-time Westinghouse sales records!



SMASH HIT WR-375 1940's greatest console value! 6 tuning buttons. 3 bands. Rotatable loop antenna. 12" electro dynamic speaker. 6 tubes.



SMASH HIT WR-676 A strikingly finished portable radio. Operates on batteries or on AC or DC current. 5 tubes. Loop antenna. 5" speaker.

When public demand for a radio line cleans out factory and distributors' stocks . . . when orders for more radios keep pouring in, you've got a line that's clicking . . . models that are smash hits!

This unprecedented demand not only set a new all-time Westinghouse sales record, but proved that offering *outstanding radio value results in outstanding radio sales!* Here again are radios designed with "stopping" eye-appeal . . . equipped for remarkable performance, priced for quick turnover and fast profits.

Here's a tip for profits! When sales figures prove a radio line is clicking—*climb aboard!* Just write or phone the Westinghouse Distributor in your locality. You'll get complete details promptly.



SMASH HIT WR-173 AC-DC super-heterodyne model. Plastic in grained walnut or ivory. Electro-dynamic speaker. Loop antenna.



SMASH HIT WR-272-L Eye-compelling 5-tube superheterodyne set with two double-purpose tubes. 6 tuning buttons. Electro-dynamic speaker. 2 bands.



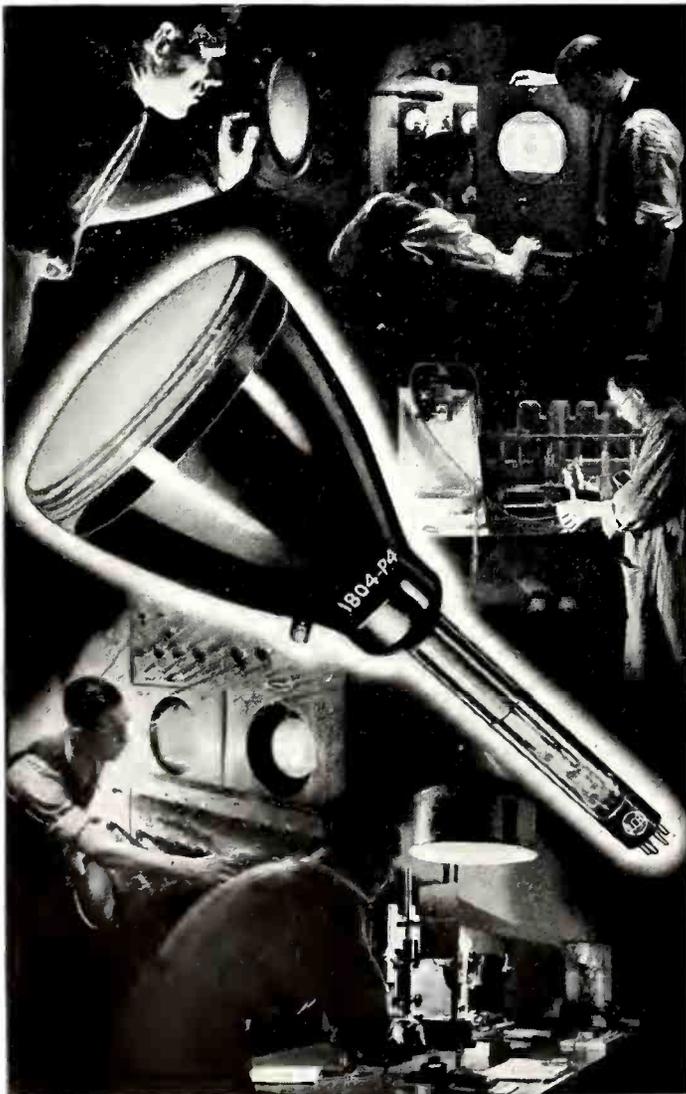
SMASH HIT WR-168-B Rich Walnut cabinet. Edge-lighted slide rule dial. 5" dynamic speaker. Built-in Loop Antenna. AC-DC. 2 bands.

Westinghouse Precision RADIO



National Association of

Forty-seven members of RCA among 572 industrial engineers and scientists given awards as "Modern Pioneers on American Frontiers of Industry."



SINCE its beginning, the Radio Corporation of America has held that *Research* in all fields of radio and sound is one of its major obligations to the public and to the future of radio.

Research is the keystone of every operation of RCA. RCA Laboratories are the fountain head of many of the spectacular radio and electronic developments of the past twenty years.

Back of these developments... back of the term *Research*, in fact... are men. Men make discoveries. And we at RCA are extremely proud of the man-power which has elevated RCA *Research* to a position of leadership.

We wish to add our own congratulations to the public recognition these men have already received. And, in addition, we extend equally warm congratulations to the many other RCA engineers and scientists whose brilliant work is contributing so much to the progress of their industry.

RCA Manufacturing Company, Inc.
National Broadcasting Company
RCA Laboratories
R.C.A. Communications, Inc.
RCA Institutes, Inc.
Radiomarine Corporation of America



Manufacturers Honors RCA Scientists

Of the 572 industrial engineers and scientists chosen by the National Association of Manufacturers to receive awards as "Modern Pioneers on American Frontiers of Industry," forty-seven were members of the RCA organization. The awards were given for original research and inventions which have "contributed most to the creation of new jobs, new

industries, new goods and services, and a higher standard of living."

Special national awards were given by the National Association of Manufacturers to nineteen of those receiving honors. Dr. Vladimir K. Zworykin of the RCA Manufacturing Company was chosen to receive one of these national awards.

47 RCA "Modern Pioneers on American Frontiers of Industry"

Randall Clarence Ballard	Glenn Leslie Dimmick	Humboldt W. Leverenz	Terry M. Shrader
Max Carter Batsel	James L. Finch	Nils Erik Lindenblad	Browder J. Thompson
Alda Vernon Bedford	Dudley E. Foster	Loris E. Mitchell	Harry C. Thompson
George Lisle Beers	Clarence Weston Hansell	Gerrard Mountjoy	William Arthur Tolson
Harold H. Beverage	O. B. Hanson	Harry Ferdinand Olson	George L. Usselman
Rene Albert Braden	Ralph Shera Holmes	Richard R. Orth	Arthur Williams Vance
George Harold Brown	Harley A. Iams	Harold O. Peterson	Arthur F. Van Dyck
Irving F. Byrnes	Ray David Kell	Walter Van B. Roberts	Julius Weinberger
Wendell LaVerne Carlson	Edward Washburn Kellogg	George M. Rose, Jr.	Irving Wolff
Philip S. Carter	Winfield Rudolph Koch	Bernard Salzberg	Charles Jacob Young
Lewis Mason Clement	Fred H. Kroger	Otto H. Schade	Vladimir Kosma Zworykin
Murray G. Crosby	E. Anthony Lederer	Stuart W. Seeley	

RADIO CORPORATION OF AMERICA

Radio City, New York

NORGE OFFERS YOU THE REALLY *Different* WASHER

with
**EXCLUSIVE
FEATURES**
you can
**SHOW, TALK,
DEMONSTRATE**
right in your
SALESROOM
such as



The Amazing Silk Stocking Demonstration

Rubbing a sheer silk stocking on the satin-smooth surface of the new NORCELAIN AGITATOR without injuring a single fiber proves the amazing smoothness of this beautiful and colorful lifetime finish—a spectacular and powerful demonstration.

When the sale hangs on what you can SHOW, TALK and DEMONSTRATE, count on NORGE. The new colorful Norcelain Drainboard with Agitator to match are the season's smash hits for eye-appeal and pull prospects to the Norge display like a magnet. And this silk-socking-smoothness test is the finest demonstration ever conceived for showing convincingly *why clothes last longer washed*



Norge Washer Features

- 1 Beautiful Norcelain Drainboard in color
- 2 Norcelain Agitator to match Drainboard
- 3 Steam Seal heat holder
- 4 Rubber insulation between tub and frame
- 5 Oversize tubs on several models
- 6 Tubs all-white porcelain, inside and out
- 7 Splash-proof top
- 8 Self-draining bottom
- 9 Quick-emptying, non-clogging drain
- 10 Power pump optional
- 11 Tapered agitator drive, permanently self-fitting
- 12 Winged agitator lock cap and lifter for instantly removing agitator
- 13 Damp-Dryer pressure cleanser, Lovell built
- 14 Pressure selector on every model
- 15 Lifetime guaranteed Lovell-built rolls on every model
- 16 Fingertip safety release on every model
- 17 3-position safety interlock on every model
- 18 Self-lubricating lifetime bearings on every model
- 19 Borg-Warner built Autobuilt Transmission on every model
- 20 Heavy-duty clutch with Borg-Warner gears on every model
- 21 Heavy-duty motor, lifetime lubricated, on every model
- 22 Motor and transmission mounted in perfect alignment on base plate for smooth running and rigidity
- 23 Extra rigid chassis with cross-bracing base plate to prevent weaving. Lifetime built throughout
- 24 Extra low center of gravity to prevent tipping
- 25 Waist-high agitator control
- 26 Extra sturdy legs, each bolted in four places
- 27 Handy cord holder
- 28 Gas engine models quickly convertible to electricity
- 29 Approved by Good Housekeeping Institute and Und. Lab. Inc.
- 30 Backed by the name and reputation of Borg-Warner Corp.

the Norge way. In addition, a host of other features sell Norge for you—oversize tubs on several models; the obvious beauty of every model in the line; the unusual extra features on even the lowest priced models; the lifetime construction in every part—these and others are all features that you can SHOW, TALK, DEMONSTRATE. Get the facts about Norge and realize what a profit-builder is this great washer, backed by a great name.

1940

NORGE DIVISION BORG-WARNER CORP.
670 E. WOODBRIDGE, DETROIT, MICHIGAN

Please give me details of the new Norge line, the merchandising and financing plans and the greater advertising support given Norge dealers.

Name _____
Firm _____
Address _____
City _____ State _____

RT-106

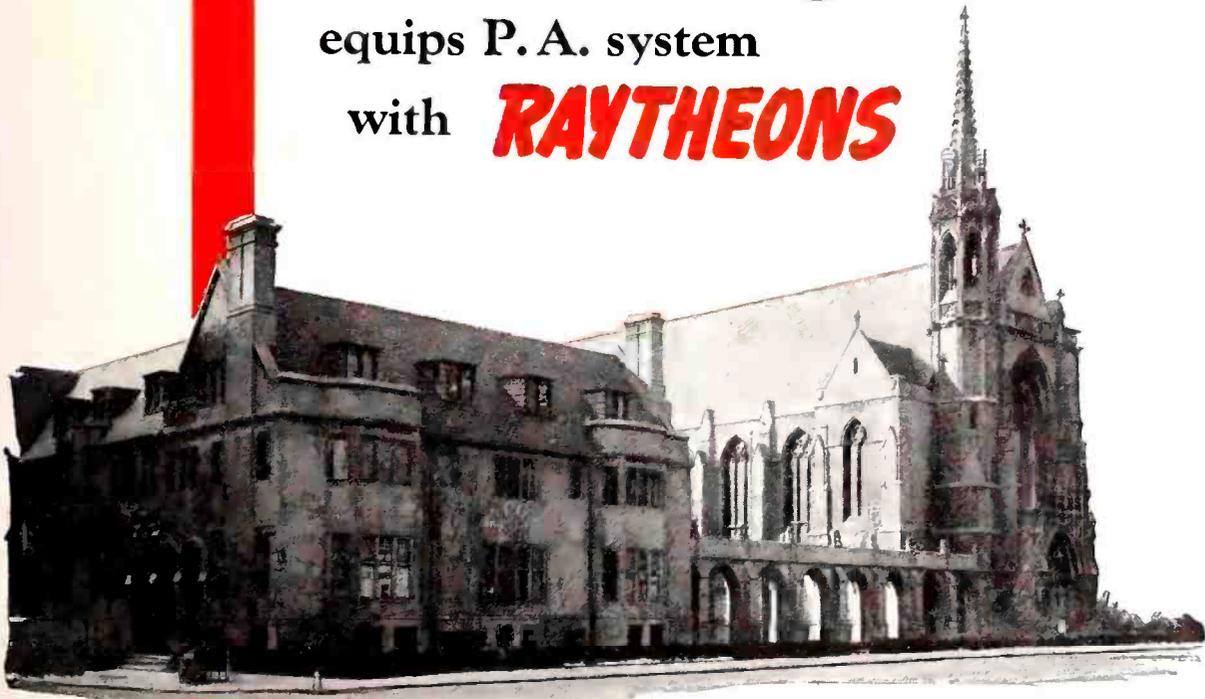
NORGE DIVISION BORG-WARNER CORP.
DETROIT, MICHIGAN

In Canada: Canadian Radio Corp., Toronto
Royal Rollator Refrigeration • Gas and Electric Ranges • Commercial Refrigeration

Send the Coupon
for Details

The Greater **NORGE** for 1940

Noted Chicago Church equips P. A. system with **RAYTHEONS**



THE Fourth Presbyterian, of Chicago, is known everywhere as one of the great churches of the Central West. With a membership including leaders in the business, civic and spiritual life of the city, its influence for good is a power which extends far beyond the limits of its own parish.

Being economically independent, nothing is left undone to provide the most modern buildings and equipment for service to members and visitors. Its P. A. System is no exception. But owing to the size, shape and acoustic qualities of the large auditorium, ordinary P. A. Systems wouldn't do. So W. P. Healy, the engineer in charge, in building one especially for this church, found that only the highest type of tubes would give the desired results. Facing this fact, he inevitably chose RAYTHEONS. For *performance*, not *cost*, was the only consideration.

This is typical of the way RAYTHEONS deliver where the going is hard. For these tubes are the development of engineers who have spent years in designing and perfecting tubes exclusively. When improvements are developed, tested, proved, they are embodied in the RAYTHEON line.

RAYTHEONS are always ONE QUALITY . . . the highest!



Not only one quality for every purpose, but one line that covers every tube need. For RAYTHEON makes them all . . . and they cost no more!

NEWTON, MASS. NEW YORK CHICAGO
SAN FRANCISCO ATLANTA

WORLD'S LARGEST EXCLUSIVE RADIO TUBE MANUFACTURERS



5 REASONS WHY THE DEMAND FOR UTAH VIBRATORS INCREASED 63%

The preference for Utah Vibrators has grown with the industry, because most of the important vibrator developments have originated in the Utah laboratory. Outstanding design and advanced engineering have maintained their leadership. In 1939 the demand for Utah Vibrators increased 63% because:

- 1 Complete exact replacements can be made with the Utah line.
- 2 Absolute dependability is assured by Utah's rugged, time-proved construction.
- 3 Finest materials obtainable are used in the manufacture of Utah Vibrators.
- 4 "Life Tested" in Utah's laboratory—the industry's most versatile and best equipped.
- 5 12 months guarantee—against defective workmanship and materials.

The assurance of complete satisfaction has led thousands of users to standardize on Utah Vibrators. You, too, can be sure of all these advantages by insisting on Vibrators that carry the Utah label. For Vibrator information, write Utah Radio Products Co., 814 Orleans Street, Chicago, Illinois. Canadian Sales Office: 414 Bay Street, Toronto, Ont., Canada. Cable Address: Uтарadio, Chicago.



V I B R A T O R S
SPEAKERS • TRANSFORMERS • UTAH-CARTER PARTS

RCA Preferred Type Tubes Program Endorsed by *Farnsworth*



**"Will contribute greatly to
the efficiency of the Industry"**

... says

E. A. Nicholas

President of the Farnsworth Television & Radio Corporation



"In my opinion RCA has made a constructive move to simplify a complex situation which has in the past been contrary to the best interests of every one in the radio business. The RCA Preferred Types list includes all of the tubes manufacturers need to design and build all kinds of receivers with maximum efficiency and minimum cost. Fewer types of tubes used by manufacturers will result in lower inventory and warehousing costs for distributors and dealers. An excellent program!"



Less than one type in ten of the 470 types of radio receiver tubes now on the market is actually needed to design practically every type of radio receiver at the lowest ultimate cost. RCA has outlined a list of 36 Preferred Type Tubes which adequately cover every function for any type of receiving set circuit.



BK-86

**Brilliant Farnsworth Radio-Phonograph
with Preferred Type Tubes**

Typical of the outstanding radio-phonograph values which can be engineered with Preferred Type Tubes is Farnsworth Model BK-86, an 8-tube automatic Phonograph Combination.

QUICK to take advantage of every opportunity to increase the efficiency of its operations, Farnsworth is using RCA Preferred Type Tubes in its current production.

And, the voice of Farnsworth President, E. A. Nicholas is added to the many now applauding the step RCA has taken. Dealers and distributors, as well as manufacturers, find the plan to their liking.

Too many tubes, like too many cooks, is a situation that needs correcting. The radio industry seems to agree that RCA has found the solution with Preferred Type Tubes.



Radio Tubes

RCA Manufacturing Co., Inc., Camden, N. J.

A Service of the Radio Corporation of America

PROFIT WITH

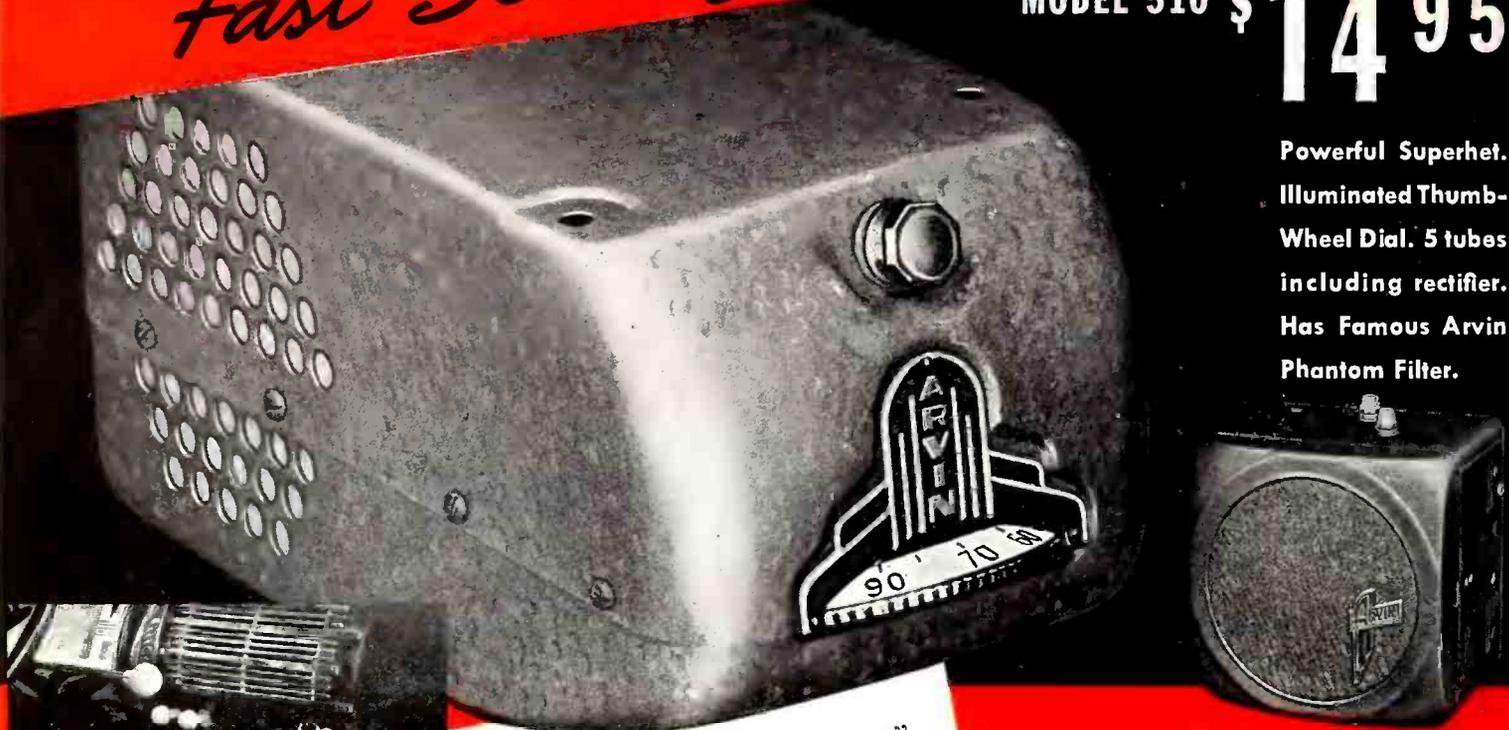
ARVIN

HOT NUMBERS

Fast Selling Car Radios

MODEL 510 \$ **14.95**

Powerful Superhet.
Illuminated Thumb-
Wheel Dial. 5 tubes
including rectifier.
Has Famous Arvin
Phantom Filter.



MODEL 610 **\$17.95**
Push-Button Tuning for
four stations. Illuminated
Thumb-Wheel Dial supplements push-
button tuning. Famous Phantom Filter.

*This Hot Number
Caught Like Fire!*



RADIO-PHONOGRAPH
MODEL 302 **\$14.95**
with deep brown finish.

MODEL 302A, with ivory finish,
as illustrated above. **\$16.95**

Top performance at "bottom"
prices make these Arvin Car Radios
really hot sellers. Take a look at
Model 510, retailing for \$14.95. We
urge comparison of this radio with
others selling from \$20 to \$30. The
three other models in the Arvin line
are equally good values. Compare
them on any basis and you'll see why
they sell so well.

Even the lowest price Arvin now
has the famous Phantom Filter
which boosts signal strength and
helps clear reception. Arvin sales are
way ahead of last year—and moving
faster every day. Profit with Arvin
Hot Numbers.

NOBLITT-SPARKS INDUSTRIES, INC.
Columbus, Indiana

Prices slightly higher in West and extreme South

← **HERE'S** a hot baby for sales and profits. Orders
are rolling in fast, because this Arvin has everything
... beauty, style, performance—at a new low price.
Plays 10" or 12" records beautifully or brings in radio
broadcasts with rich, fine tone. Radio has four tubes
including rectifier. Self-starting, constant speed pho-
nograph motor. Streamlined unbreakable cabinet.
20-foot radio aerial attached.

Carrying case for set and records only \$2.95 extra.

MODEL 710 **\$24.95**

Remote control tuning
model with Universal
Dial that mounts under edge of instru-
ment panel on any make of automobile.



WITH MATCHING
PANEL CONTROL **\$29.95**
Companion Model 810—
larger, more powerful . . .
\$46.10 to \$50.50.

*Hottest Battery-
Electric Portable!*



MODEL 802 **\$24.95**

Complete with batteries.
Folks like this Arvin . . . like its perform-
ance on batteries outdoors and on AC-
DC current indoors. Handsome cast,
built-in loop antenna, unusual station-
getting ability and rich tone.

MODEL 803, same as above, except Un-
derwriters' approved for 110
AC or battery operation . . . **\$26.95**

GEARED TO BUILD BUSINESS!

**C.I.T.
Finance
Plans**

**Retail
Appliance
Selling**

Limited Recourse at NEW LOW RATES!

C. I. T.'s new financing service in the field of major electric appliances is specially designed to fit in with modern appliance merchandising. In place of two plans—the usual “full recourse,” or “limited recourse”—at higher purchaser rates, C. I. T. offers *one plan—Limited Recourse at New Rates*—lower by \$1 to \$5 a deal.

If your appliance business has been operating under the Limited Recourse Plan, you can now enjoy all its advantages at these substantially lower rates.

If you have operated under Full Recourse, you can now limit your liability under the new Limited Recourse Plan at rates never more than your former rates and, in many cases, at rates even lower.

Give your business this new power. Put C. I. T.'s *One Plan Financing* to work for you.

Add up these C. I. T. Special Services —to your profit!



Lowest Refrigerator Purchase Rates... A rate structure which automatically attracts customers—and is as low as any now offered by a national finance company. Add this benefit of favorable rates to all the other advantages of C. I. T. service.

Home Demonstration Plan for Floor-Planned Household Mechanical Refrigerators

... Keep things moving. Close your sales in the logical place—in the home. 25% of your floor-planned refrigerators become active salesmen; one out of every four C. I. T. floor-planned refrigerators may be doing duty as demonstrators at any one time. Get the details from your local branch office.



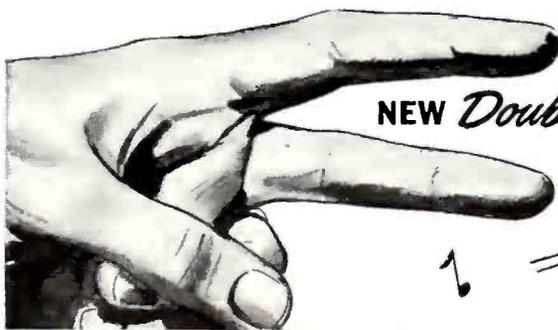
Special Home Modernization Field Force to Help You... Our trained Home Modernization Staff calls exclusively on contractors and appliance dealers. Your representative, contacting you closely, frequently, will suggest ways to make C. I. T. service even more valuable to you. Establish your account with the nearest among C. I. T.'s more than 200 offices. Get started with these streamlined finance-selling plans, geared to build your business.

C. I. T.

CORPORATION

NEW YORK • CHICAGO • SAN FRANCISCO

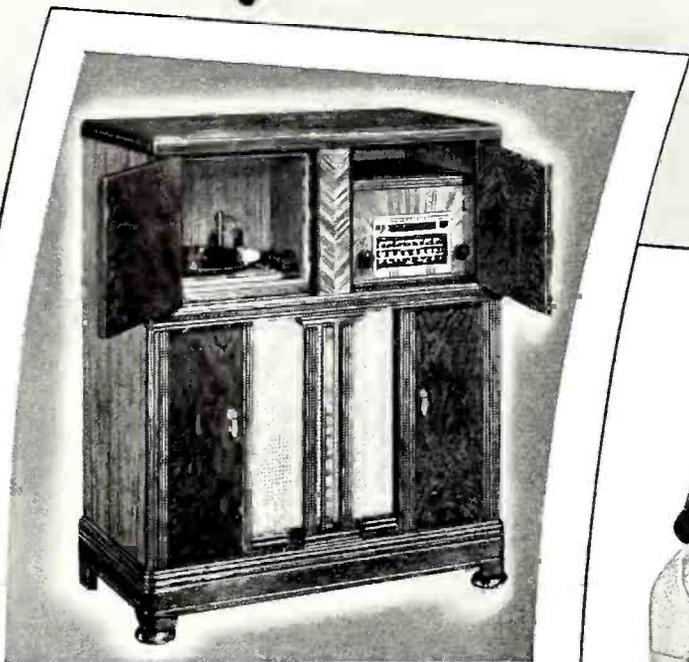
A Unit of Commercial Investment Trust Corporation • Combined capital and surplus over \$100,000,000 • Branches in all principal cities



NEW *Double* ENTERTAINMENT VALUES FROM *RCA Victor*



HOT-Yes! And handsome, too, are these RCA Victrolas!



RCA VICTROLA U-45. It has Gentle Action, Automatic Record Changer . . . provides Push-Pull Audio System for greater volume and finer tone — 12 watts output . . . Push-Button Tuning (6 stations) . . . Delightful Short-Wave Reception . . . Bass-and-Treble Tone Control . . . tuned radio frequency for supreme selectivity and amplification . . . 9 RCA Victor Tubes plus Magic Eye . . . Built-in Magic Loop Antenna. Model U-45 is designed for use with Television Attachment; provides record storage space in cabinet. One of the year's outstanding buys!

For finer radio performance, RCA Victor Radio Tubes. Trade-marks "RCA Victor," "Victor" and "RCA Victrola" Reg. U. S. Pat. Off. by RCA Mfg. Co., Inc. Ask about the new RCA Victor Long Life Needle.



RCA Victrola

Combines Record and Radio Entertainment
A Service of the Radio Corporation of America

There are a lot of folks in your neighborhood who want the double entertainment—records and radio—that an RCA Victrola provides. And here are the instruments they've been waiting for!

Look at the features! Your own good judgment will tell you that here are a couple of real profit winners!

RCA VICTROLA U-43. Luxury is the keynote of this handsome, new 18th Century style RCA Victrola. Cabinet luxury to please your customers' eyes . . . performance luxury to satisfy their desire for fine music. Outstanding features such as Gentle Action Automatic Record Changer Plus Push-Pull Audio System, Bass-and-Treble Tone Control, Superb Short Wave Radio Reception, Push-Button Tuning (6 stations), Built-in Rotatable Loop Antenna, 7 RCA Victor Tubes plus Magic Eye, 12-inch Dynamic Speaker. Designed for use with Television Attachment.



RADIO *and Television* TODAY

ONLY THE BEGINNING!

Nothing has affected American life more than has radio. Its benefits to mankind are innumerable. Its value to the world is immeasurable.

In the short span of twenty years, radio has drawn the world together, opened up new cultural avenues, provided a new means of entertainment, made life bearable for the shut-in, lightened the housewife's burden, helped education.

And that is but a small portion of its achievements.

The airplane fighting storm and darkness, is safely guided to earth by radio's staccato beam. At sea, a sinking freighter's antenna hurls a magic SOS into the air, and rescuers hurry to the scene. In city or country, violence is done and radio speeds police to trap the criminal. In hurricane, in floods; in war, in peace, radio serves mankind 24 hours a day, helping and aiding those in distress.

Mighty as a force for good, so radio can do equal evil. In totalitarian countries, radio listeners hear only what dictators want them to hear.

U. S. RADIO IS FREE

But in the United States, radio has been free and will continue to be free. All sides can speak. Religion freely airs its separate tenets. Political opposites give different views. Monopoly, corruption, mismanagement are attacked over the air.

That freedom is the priceless heritage of Amer-

ican radio. With 110,000,000 listeners, with hundreds of millions of dollars spent yearly to provide programs for the nation, radio ranks first in our life. From breakfast to bedtime, radio fills the days of the people, pouring forth entertainment, news, education, culture. Great programs come from 800 stations—all free to anyone who owns a receiver.

LEADS THE WORLD

And of first-line importance to that receiver are the engineer, the manufacturer, the wholesaler, the dealer, the serviceman. It is they who provide the magic instruments that bring radio's great programs into the home. Starting a short twenty years ago, they have pioneered many advancements to make U.S. radio *first* in the world!

Yet this is only the beginning. Short-wave uses are expanding. Television, frequency modulation and electronic musical instruments, are taking on commercial stature. Facsimile offers still other possibilities. Soon these and other new services will flourish into vigorous growth, enriching everyday life, and bringing new marvels of sound and sight into American homes.

Radio has come far, to 1940.

But radio's greatest asset in 1940 is still its *unknown potential* for 1941 to 1950;—its *unimaginable future* for the decades beyond!

What we have seen so far, is *only the beginning!*

RADIO PARADE

Receiver Sales 20% Above Last Year

The trend of the radio business has some surprises this month. Set sales are some 20% better than a year ago. Soon another selling impetus in the form of public interest in the Presidential campaign will also begin to be felt.

Though in the past general business has usually eased off in Presidential election years, the radio business has run counter to the general trend and there is no reason why this should not be repeated in 1940.

Meanwhile general business continued its downward trend during February, though still running better than a year ago.

General production still lags. However, the rate of decline is leveling off, and the totals continue to be ahead of last year.

"Listen-Before-You-Vote" To Sell Radios

The National Association of Broadcasters, under the direction of Arthur Stringer, is launching a promotional campaign to run during 1940 until election time, under the slogan "Listen-Before-You-Vote." Purpose of the drive is to increase radio listening and to augment the radio audience through the sale of new radios and tubes, and the prompt repair and reconditioning of radios that get out of order.

"Listen-Before-You-Vote" therefore becomes a slogan of primary interest



Dr. Ray H. Manson is now vice-president and general manager for Stromberg-Carlson. Other officials were promoted too; see page 118.

in building business for radio dealers, distributors, manufacturers, and servicemen. First activity in the campaign will come during the Spring months when the broadcasters will put on the air spot announcements and programs directed to create interest in automobile radios and portable radios. Dealers and servicemen are asked to tie in with campaign, using "Listen-Before-You-Vote" in their own advertising, direct-mail and window displays, and also to get into contact with their local broadcasting stations for local cooperation.

Political big-wigs in both principal parties have approved idea behind campaign as being constructive and in public interest, since all observers agree that radio will play the leading part in electing the next President.

Eight Million Service Jobs, Thanks to FCC

Under the Havana Treaty, the Federal Communications Commission will shortly order a reallocation of broadcasting stations on most of the present U. S. wavelengths. Studies are now going on at Washington in preparation for this shift, which is expected to be announced sometime in the late summer.

Since most of the present broadcasting stations will be shifted to a more or less extent on the spectrum, this coming reallocation will make necessary the resetting of push-button controls on some eight million radio sets and so will open up hundreds of service jobs in every community.

While the exact new assignment of each present station cannot now be predicted, *Radio Today* presents on page 53 of the Yearbook section in the present issue, the schedule which the FCC will follow in making these shifts, although exact new positions of all stations cannot be assured until the FCC orders are issued.

Frequency-Modulation Interests Active

On March 18 at Washington, the FCC will hold hearings on frequency-modulation assignments, in order to provide channels for the large number of applicants for FM operation. Already twelve FM stations are operating, seven more have construction permits, and some eighty applications are under consideration by the Commission (see complete list of FM stations and applications on color-chart of radio channels in Yearbook Section of this issue).

The FM Broadcasters, Inc., are

seeking authority for commercial broadcasting, increased power to 50 kw, the establishment of new FM channels, and approval of relay re-broadcasting of present programs.

Station WTMJ, Milwaukee, recently held an FM demonstration for local radio dealers, assuring the trade that FM will not hurt the sale of regular sets but will open up a new market for sets combining both regular broadcast and FM reception. FM service starts in Milwaukee April 1.

Radio's Modern Pioneers

Prominent radio men figured importantly in the selection of 29 "national modern pioneers" for awards made by the National Association of Manufacturers at a dinner last month which climaxed the regional celebration of the 150th anniversary of the American patent system.

The awards were made by Dr. Karl T. Compton, president of Massachusetts Institute of Technology. Dr. Compton said that pioneering was "a state of mind that includes curiosity, an idealism that is dissatisfied with the restrictions and imperfections of the present, a great inward urge for discovery and an ability to translate this dissatisfaction into constructive achievement."

Among the radio men on the inventor's honor list were Edwin H. Armstrong, Alfred N. Goldsmith, William N. Goodwin, Jr., Alan Hazeltine, R. A. Heising, Irving Langmuir, Richard H. Ranger, Harold A. Wheeler, Willis R. Whitney, and Vladimir K. Zworykin. Included in various "joint award" lists were Harold H. Beverage, O. B. Hanson, Walter Van B. Roberts, Stuart M. Seeley, and Arthur F. Van Dyck.



Honored as one of radio's "Modern Pioneers," W. N. Goodwin, Jr., engineering head of Weston Instrument Corp.

NEW JOBS FOR RADIO

Present and Future Uses of Radio
Tubes and Circuits

Weekly Broadcasts by
Dr. O. H. Caldwell
Editor of *Radio Today*

NBC Blue Network, Saturday After-
noons. "Immediately following
the Opera"

Eliminating Noise March 23
Radio in Sports March 30
Fighting Fires April 6
Radio in Business April 13
Electrons on Rampage April 20
Gathering Public Opinion April 27

This program, "radio's own message to the listener," as now scheduled immediately follows the Saturday afternoon Metropolitan Opera Broadcast, which is officially estimated to have a listening audience of ten millions.

Around 5 p.m. E.S.T., when the "Met" signs off, the Opera network of 60 to 100 stations, coast-to-coast, is switched over to bring to this vast audience, under the title of "Magic Waves," the latest news of radio, radio tubes, and radio equipment, interpreted by the editor of *Radio Today*.

Some 100 additional stations are also reached by this program over NBC wires. Where these stations have the time sold locally, they have been asked to make recordings from the network's wires, and then put these recordings on the air at the first available good time. Already a Washington D. C. station has been making such transcriptions of each Saturday program, and broadcasting them at 10:30 a.m. Sundays.

RMA Secures Exemptions From Minimum Wages

The RMA has succeeded in securing general exemption of the radio industry from minimum wage rules under the Walsh-Healey Act. A decision by the Department of Labor on February 23 adopted RMA recommendations for exemption from minimum-wage rules on government contracts except for manufacturers of specialty or "commercial" radio. The Division of Public Contracts provided specifically for exemption of manufacturers of "home radio sets; their component parts and tubes", as recommended by RMA in past proceedings over the last two years.

The RMA was represented in the Department of Labor proceedings by a special committee of which Octave Blake of South Plainfield, N. J. was chairman.



T. A. M. Craven, FCC commissioner, shown with new 20-in. Teletron, during television demonstration staged for him at Du Mont Labs, Passaic, N. J.

Television Gets FCC Nod; RCA Starts NY Drive

Commercial television development received an important impetus this month when the Federal Communications Commission announced authorization of limited commercial operation of television transmitters beginning Sept. 1. Important features of the Commission's long-awaited and unanimous ruling are:

Limited commercial operations under which advertising will be permitted in connection with programs, the cost of which is borne by sponsors.

No standards are now promulgated by the Commission which reserved issuance of standards for future consideration. The Commission recommends that no attempt be made by

the industry or its members to issue television standards for the time being. The Commission stated that at the appropriate time the Commission will endeavor to issue standards promptly and did not appoint any standards committee.

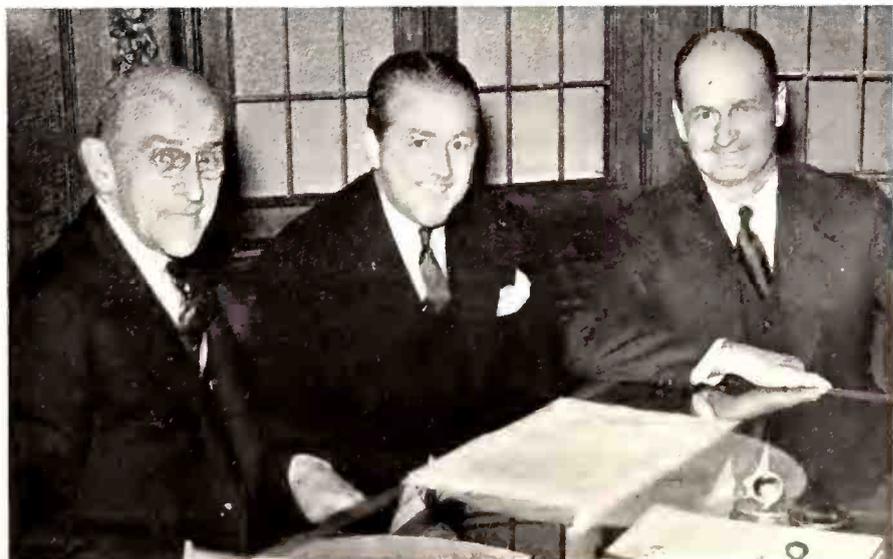
No change is being made in channels assigned to television by the present rules and regulations. Licensing of television broadcast stations in Group I, for experimentation, and in Group II, for limited commercial operation, is provided.

Immediately upon the FCC authorization, the RCA interests, under the direction of T. E. Joyce, vice-president in charge of television merchandising, announced an active sales campaign for the NY area (see page 18) together with enlarged television displays at the 1940 N. Y. World's Fair.

"Clear the Air"— A How-to Chart

In response to inquiries from radio men and from the general public, the editors of *Radio Today* have prepared a detailed chart showing how to proceed in diagnosing and clearing up any situation of "noisy radio" reception. This chart is reproduced for ready reference on page 30 of this issue.

Questions from both the radio trade and the listening public show that radio interference and "manmade static" present a considerable obstacle to radio enjoyment in an unexpectedly large number of cases. It is *Radio Today's* purpose to show radio men how this annoyance to their customers can be remedied, with substantial profits for the men who clear up troublesome reception. "Turn Radio Noise into Dollars".



RCA field managers start their month-long visits to Camden, N. J., to confer on company policies. President George K. Throckmorton, left, and field sales manager Fred D. Wilson, right, are shown greeting George Malsed of Dallas.



YOUR

Get started early on those profitable Springtime calls to all the homes where more radio is seasonally needed.

When Spring is in the air, the housewife's thoughts turn to "cleaning house".

Remembering that women's fingerprints are on 85% of the dollar bills they take in, smart dealers will turn their sales promotional efforts along the lines of women's thoughts.

Spring particularly is the time to go after the tune-up business, and tie your sales and service promotions together.

During the next month more sales, plus sales, can be made in the home than in your store, and service offers an excellent entree into the home.

More contacts in the home mean

more sales.

It's easier to talk replacements when there's money to be spent on service work.

Personal radios are more appropriately discussed in the home than in the store.

CLEAR-CUT PLAN

As the outdoors beckons to the motorist, golfer, fisherman, and picnics appeal again to the whole family, the automobile radio and portable set can be interestingly discussed in relation to their own use.

First, it is a good plan to go over

SPRING STRIDE

your stock carefully, and mark for clearance those models which have been around too long, or of which you have too many.

Price them right, make up some attractive Spring Specials, and have them "ready to go."

Then plan a direct mail campaign, consisting of several "clean up" features, not forgetting to mention your "Spring Specials" too.

Stagger your mailing so you can get a personal follow-up too, to estimate repairs, to talk about your "special", or a personal, or family portable, radio and to plant the seed which may blossom into a refrigerator sale later in the season.

THE BRIGHT APPEAL

Your windows, your floor displays, even your store itself, will benefit by a spring clean up. Everything should be brightened up, made more colorful, and lively to keep pace with the tempo of Spring and to be in psychological

STEPPING OUT FOR A CLEAN-UP!

1. Clean up your old stock.
2. Clean up your customers' old sets.
3. Clean up some extra sales and profits.

step with the thoughts of young and old.

More life and aggressiveness in your sales promotion and merchandising would be appropriate too, and pay well in added sales for the extra effort.

The more contacts you remake with

your old customers, the more kindly more people will be thinking of you. Many a smart dealer makes it a regular policy to call on *all* of his customers each Spring—friendly like, to be sure the customer is still satisfied with her purchase. The plus sales which result from such indirect solicitation, to say nothing of the good-will resulting, is surprising to all, the first time they try it.

TURNOVER TIME

And here and there where you *do* find a customer with a complaint, you have your chance to come clean, and live up to the customer's expectation.

Maybe you think that doesn't pay dividends too.

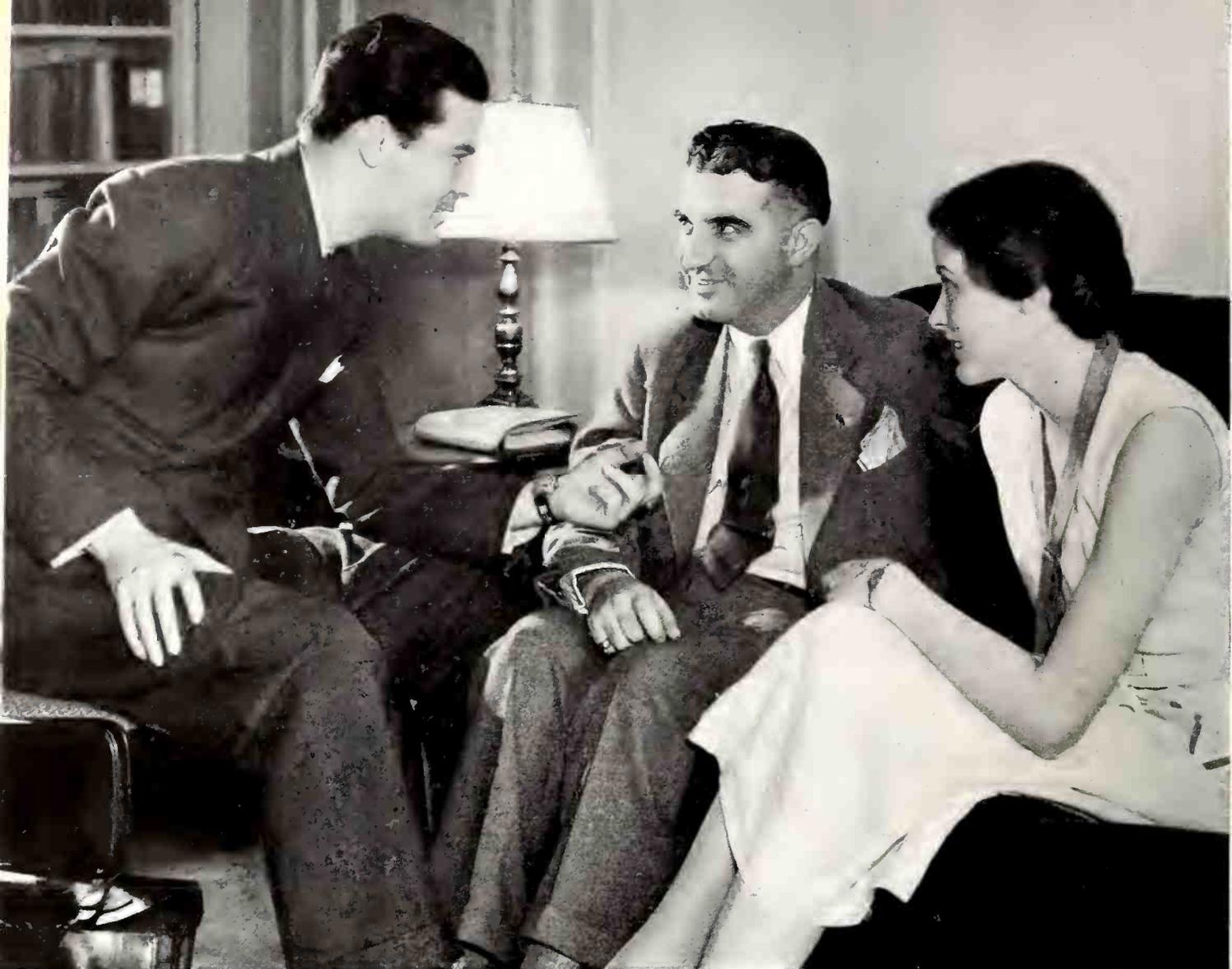
You should get an earful at the women's clubs, or bridge parties, to learn how fast what one woman thinks of you can be passed on, and multiplied.

Spring is the season of life, of color, of action, and alert dealers make the most of it.

DEALER'S CALENDAR FOR APRIL BUSINESS PLANS

An idea for each of the 26 business days from April 1st to the 30th

1. Get your stock down—new models are coming.
2. An "Auction Sale" of trade-ins will stir interest.
3. Look at other stores; get ideas to improve on.
4. What's the matter with the customer follow-up?
5. Has the "outside crew" a proven "door opener"?
6. Keep your windows clean, colorful, interesting.
8. Ever try the "for old customers only" sale idea?
9. Current news bulletins in windows attract folks.
10. Accounts just "on the books" aren't banked.
11. Is your direct mail going out—and working?
12. Sell all you've bought; don't rebuy all you sold.
13. Time for a new window—make it interesting.
15. Ringing phones and doorbells will ring register.
16. How's Service coming along—it makes sales too.
17. Sales floor clean? Ready for demonstration?
18. Remember batteries for '39 buyers of portables.
19. If your "special" isn't going, do you know why?
20. Ten calls a day will keep the sheriff away.
22. Has your crew had a recent "shot in the arm?"
23. Are you "watching the signals" in your business?
24. Portables are beginning to move—your stock o.k.?
25. Put more life in your merchandising and display.
26. Work for more profits, not longer discounts.
27. Are you on your April "plan"? Check schedule.
29. Got an idea for a good window? Put it in!
30. Honest now! Did you do your best in April?



Ewing Galloway

SALES ACTION TODAY



Adroitly aimed at all types of customer tastes is this display of Radio Studios, Inc., Salt Lake City, one of the winners in Stromberg Carlson's big display contest. Table models, chairside, radio-phonograph, furniture, etc.



Photos of all the places where portable radios are used form an eye-drawing background for this display at The Electric Institute, Washington, D. C. The stunt is appropriate as people start to spend more time outdoors.

← **EVENING SALES** talks and demonstrations may move along nicely if radio men will wait until hubby gets home from business. By appointment.



↑ **FLEXIBLE SYSTEM** of selling allows dealer to annex a calf as down payment. Adaptable radio men are, left to right, Gordon Stewart, James Farrington, Earl Dow, of Rice & Tyler, Bangor, Maine.



↑ **DEMONSTRATION IDEA** for records at Schwabacher-Frey, San Francisco, is this attractive counter with demonstration booths on either side.

TERRIFIC UPROAR of static is set up by this One-Minute Aerial Demonstrator from Philco. Prospect can tune it out by rotating built-in aerial system, as C. E. Gerhard demonstrates here.



TELEVIS'N CLICKS IN N. Y.

After "dress rehearsal" in 1939, public realizes that television's "Big Show Is Now On" for 1940!

On March 12, 450 RCA dealers met in an NBC studio, New York City, to learn from T. F. Joyce and other RCA officials, all about the new television merchandising plans for the metropolitan area. And, Wednesday, March 20, the public itself was informed of the new prices on television receivers through full-page ads appearing in the New York papers.

Price reductions up to \$205 were announced on RCA television sets, and earlier purchasers of television sets who had paid the original prices were offered rebates of the difference, if they would report name of dealer making sale. The RCA receiver TRK-12, formerly priced at \$600, was announced at a new cash price of \$395. It was also understood that another set would be repriced at \$295. Additional charges, depending upon conditions, are made for installation and antenna. An 18-month easy-payment plan, 10 per cent down, will be available to time purchasers.

The present campaign was announced as No. 5 in a five-point plan, the other steps being: No. 1, Laboratory Stage; No. 2, Field Tests; No. 3, Television Programs; No. 4, Network Television. With the fifth step, "Prices to fit the public pocketbook are now

made possible by large-scale production planning", declared representatives of the company who now see television development progressing rapidly on a commercial basis.

Elaborate merchandising aids will be made available to dealers in the New York metropolitan area, covered by the Empire State Tower transmitter. Direct mail pieces and lists will be provided, covering preferred home prospects and also restaurant and tap-room proprietors, whose television sets have been found to exert valuable promotion effect on sales in the neighborhood. Special television advertising will also appear in the local newspapers and in the sophisticated metropolitan magazines, such as *New Yorker*, *Esquire*, etc. A complete sales manual has been prepared for the use of dealers and salesmen handling television, and there will also be a 12-week training course covering technical installation and servicing. To aid dealers in making satisfactory installations, survey trucks will be provided, to analyze field strengths at the point of intended installations.

PROGRAMS NOW "TOPS"!

NBC television programs in the New York area have hit a new high in interest-value that is the talk of everyone who has been following television presentations during the past few months. Broadway shows, sophisticated dramas, Metropolitan opera, track meets, basketball, hockey, sparring matches, airplane flights and news programs have all combined to give variety and richness of program material. This is bound to make a self-starting demand for television sets as soon as the public discovers what is being offered on the video waves.

By way of expanding the field for television service, relays to Boston and Washington are now being surveyed. These relays will cover such cities as Baltimore, Philadelphia, New Haven, Hartford, Springfield and Providence. Meanwhile Schenectady and Albany are being supplied from a relay station on the Helderberg Mountain.

In this way, according to the official announcement, "another important step is under way which promises a

nation-wide television network which eventually may make possible the extension of service to all parts of the United States".

Philco's Loop Reception, 605-Line Pictures

Three new achievements in television research, are announced by William H. Grimditch, Philco vice-president:

1. Better television picture—Television reception of a 605-line picture instead of the present 441-lines. This gives an increase of 30 per cent in picture detail. The new 605-line picture has 24 frames per second in accordance with standard motion-picture practice.

2. Plug-In Television—Television reception based on vertical wave transmission, permitting built-in vertical loop antennas.

3. Discrimination against noise—Use of the built-in loop antenna to reduce diathermy and noise interference, one of television's most vexing problems.

"To the public," Mr. Grimditch said, "these advances will mean a better television receiver at lower cost."

"One big problem yet to be solved, is a better, simpler, stronger, and more reliable synchronizing system to prevent picture slippage."

The built-in vertical-loop antenna eliminates the costly and hazardous installation of large dipoles which are placed atop towers on the user's roof to receive television signals sent horizontally polarized from a television broadcasting station. The built-in vertical loop, which obviates the expensive construction of the dipoles, employs vertically polarized waves, in contrast to the horizontally polarized waves ordinarily used.

DIATHERMY MENACE

Interference from diathermy machines, which are extensively used by physicians and hospital in modern medical therapy and of which there are between 30,000 and 40,000 already in use in the United States, has been greatly eliminated by the built-in vertical loop, Mr. Grimditch reported.

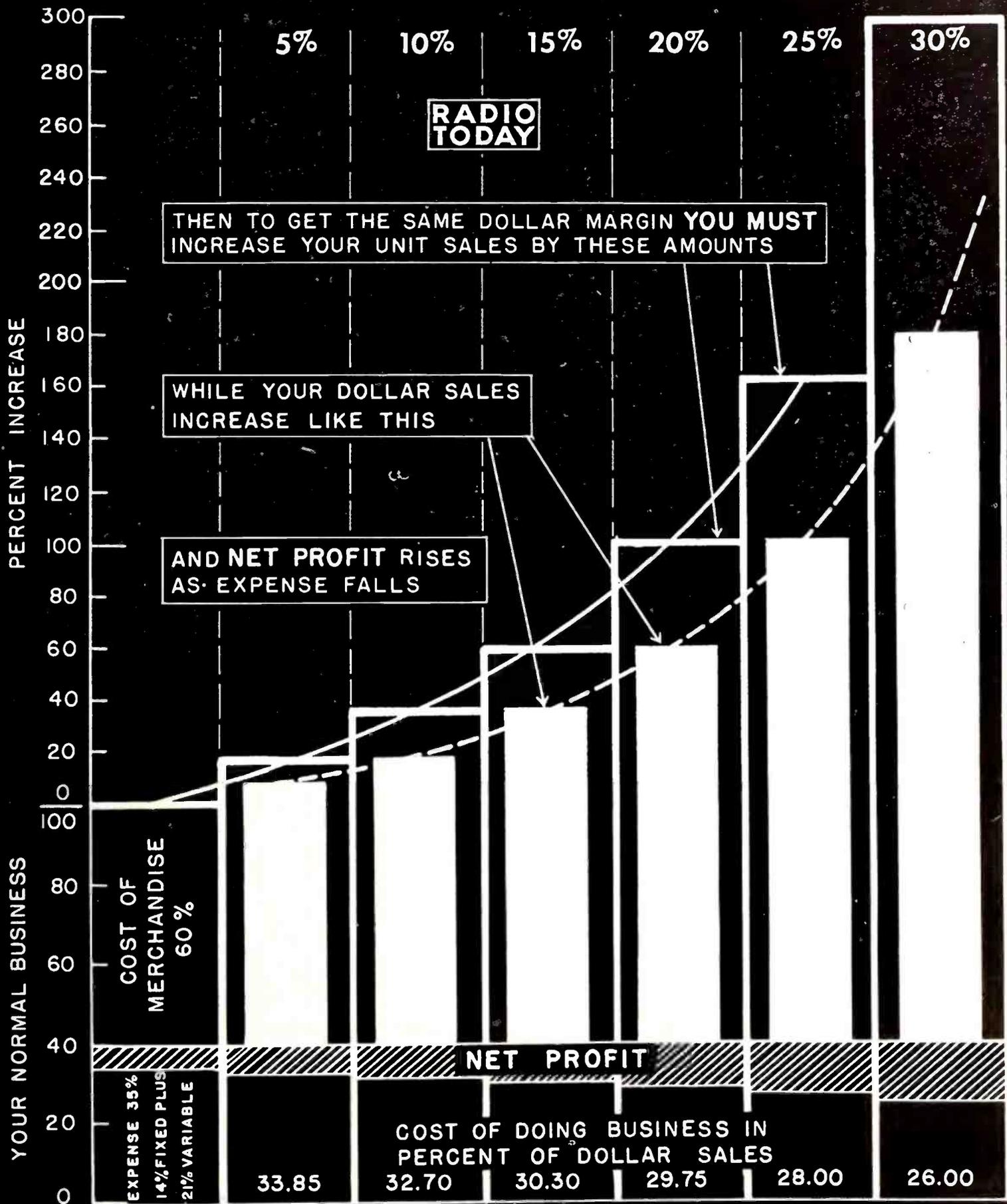
(Continued on page 111)

de luxe RCA Victor television receiver, model TRK-12, which gives a picture slightly over 9 in., has been reduced from \$600 to \$395.



WHEN YOU CUT PRICES

AND REDUCE UNIT PRICES BY THESE AMOUNTS



A NEW HIGH IN

RECORD PROMOTION

Columbia Prepares Entirely New Sales Helps

At the Columbia Recording Corp., 1473 Barnum Ave., Bridgeport, Conn., announcements come from Patrick Dolan, the company's new advertising and sales promotion manager. He promises a "new deal" in dealer and consumer sales promotion on the Columbia, Brunswick and Vocalion records made by his firm.

Plans are going forward for a comprehensive promotion schedule which will be based squarely on the needs of the retailer of records. The whole concept of the plan is described as new, different, and aggressively keyed to the tempo of the times.

NEW DRIVES

The Columbia catalog supplements on new releases will be handled in a brand new way, and many other new ideas are forthcoming. The details of the complete plan will be available next month; the accompanying announcements are the result of a prevue made by RADIO TODAY.

This company will introduce complete catalogs in new dress, and it is said that the packaging of record albums will be given a special treatment. Emphasis will also be given to the descriptive material accompanying the albums.

Point-of-sale materials for the dealers will be of a vigorous design aimed to attract attention for Columbia records, and to make people want to buy them.

Noted on the recent record releases made by Columbia are a number of favorite recording artists which will figure in the new promotion plans. These include Kate Smith, Benny Goodman, Raymond Scott, Kay Kyser, Horace Heidt, and many others.

Decca Summarizes Merchandising Action

"What we are doing to put our records in a position of being almost pre-sold before they go into the dealer's store," is outlined by Decca Records, Inc., 50 W. 57th St., New York City, for readers of Radio Today.

The Decca promotions are aimed at "offering the finest quality merchandise by the greatest artists at minimum prices, attractively merchandised . . . the plan represents an opportunity for any dealer to go into the

record business with a minimum of investment, a maximum of turnover and a chance to make unusually high profits."

This company points out that, along with its regular release of 35c recordings of the top artists, the dealer can get special display material such as supplements, hangers, posters and many other items which can be used in window display, store display, and in record booths.

FUND OF FAST SELLERS

Another Decca promotion is found in the field of children's records. The company has conceived and built up, during the past four years, a library of records for youngsters, packed in attractive envelopes and albums. All these are ready for dealers who want to tie in with the revival of interest in this field.

To help the retailer with his need for colorful display, and to give him higher-priced items as extra profit-makers, Decca has also developed a library of popular albums. These may be of standard selections, or of specialties. They are prepared in packages specially bedecked with color, so that

Wax Worth Watching

DICK ROBERTSON and his orchestra playing *Ma, He's Making Eyes at Me* with VC by Mr. Robertson—Decca 2920.

GRACIE FIELDS with orchestra singing *I've Got the Jitterbugs* (from the 20th Century Fox film, "Shipyard Sally")—Victor 26507.

HARRY JAMES and his orchestra playing *Headin' for Hallelujah* with VC by ensemble—Varsity 8201.

GLENN MILLER and his orchestra playing *Tuxedo Junction*—Bluebird B10612.

VINCENT LOPEZ and his Suave Swing Orchestra playing *How Many Times* with VR by Penny Parker—Bluebird B10601.

CARMEN MIRANDA singing *South American Way*—Decca 23130.

KAY KYSER and his orchestra playing *Palms of Paradise* with VC by Ginny Simms, Harry Babbitt—Columbia 35368.

JERRY COLONNA singing novelty vocal *I Love Life* with orchestra—Columbia 35371.

CHICK BULLOCK, accompanied by his orchestra, singing *Punchinello*—Vocalion 5366.

DICK TODD with orchestra, singing *The Singing Hills*—Bluebird B10596.

BING CROSBY and The Foursome singing *Sweet Potato Piper*—Decca 2999.

AL DONAHUE and his orchestra playing *Pinch Me* with VC by Paula Kelly—Vocalion 5351.

JOHNNY MESSNER and his Music Box Band playing *You'd Be Surprised*, with vocal by Jeanne D'Arcy and Mr. Messner—Varsity 8183.

they will lend themselves to effective display. Included in the packages are explanatory booklets, giving the reasons why the albums were made, information on composers, artists, selections, etc.

RCA Highlights Big-Scale Promotions for Dealers

Consistent advertising in 60 newspapers, leading national magazines, and radio broadcasting in some 50 cities is a feature of RCA-Victor's promotion for records.

The company, in its many-sided merchandising assistance to retailers, has a million dollar line-up of standard available record promotion material, such as dummy records, window posters, silk banners, easels, decals, artists' photos, outdoor and indoor electric signs, streamers, reference labels, stock envelopes, hanger frames, delivery bags, complete merchandisers, record stationery, dealer sales manuals, and a long list of books. The complete program can only be highlighted here.

DISPLAY SERVICE

RCA sports a regular display service which consists of a monthly poster on a "Musical Masterpiece of the Month"—a Victor Red Seal Album. Around this album is built each month's sales promotional story. This includes the magazine and newspaper ads, and the broadcasting mentioned above, besides a monthly supplement which features the monthly artist, and goes to nearly a million consumers.

The Victor officials continue the good work:

"We also have a monthly popular display which consists of either a display or a store promotion item on Victor or Bluebird records. Usually this is devoted to artists because the popular picture is changing so rapidly.

COMPLETE PROGRAM

"Then we have our regular weekly popular hanger cards which go to all our dealers for display in racks set up in their stores. These hanger cards go out each week, regularly.

"Every other week a Record Newspaper goes to all our dealers with promotion and sales tips, with stories behind each artist and recording and with printed experiences of other dealers.

"With special bulletins, streamers and a column in this dealers' news-

paper mentioned above, we arrange tie-ins with currently showing moving pictures.

"Nearly every week a number of window streamers and store streamers are prepared and sent out upon both Victor and Bluebird popular and upon Red Seal Records.

"We prepare special booklet listings of interest to special groups of record users. In addition, we prepare special promotions from time to time as special recording or listings are released. Our complete Victor Bluebird Record Catalog Merchandiser has had special success. We have sold many hundreds of these since its announcement about a year ago."

U. S. Records in New Selling Plans

The United States Record Corp., 1780 Broadway, New York City, makers of Royale and Varsity records, has lined up a mass of promotional material for dealers to use in their Spring merchandising programs.

Special window display decals, window streamers, and release cards are on the way, to help with the selling of the impressive talent roster (such as Jack Teagarden, Harry James and Rudy Vallee) engaged by this company.

U. S. has also announced that "our promotion and publicity has been intensified through the use of appropriate tie-ups with the showing of motion pictures whose music is available on Varsity and Royale records." Examples are the special packaging of Varsity records carrying the score of "Gulliver's Travels" and "Pinocchio."

PLANS UNFOLD

Another valuable adjunct to retail sales, is the firm's new system for servicing record reviewers. Thus it is planned to give the new releases wide publicity among consumers.

U. S. Record has recently formed an Accessories Division, which will hit the Spring market with a new line of needles, a popular priced record rack, a double tier record cabinet, and a group of portable phonographs in modernistic design. All these will be marketed under the names Varsity and Royale, and all will be attractively packaged with an aim toward consumer appeal.

Radio Men's Opportunity in Electronic Music

Pianos that perform like organs, and yet result in greatly decreased expense of construction, are predicted by B. F. Miessner, electronic musical-instrument pioneer of Millburn, N. J.

"We have new designs in progress which will greatly reduce the cost, weight and bulk of the mechanical

proportions of electronic pianos. Where now three strings per note at say 160 pounds tension are used, we can use one string per note at 20 pounds tension, and much shorter; as a result the iron string-plate and its reinforcing wood structure need only be designed for one, instead of 20 tons of string tension. Also the key action for these strings can be made very much cheaper, simpler, and lighter, and no soundboard is needed," says Mr. Miessner.

"These cheaper pianos, by some additional electrical complications, can be made to perform like organs as well as pianos, and in many tone qualities.

"We are convinced that the music-instrument business is going to be completely changed by all these developments, and that the radio industry is going to take over this business, just as it has with phonographs and as it is now doing with organs, guitars, etc.

"The electronic-music art," concludes Mr. Miessner, "is now out of the normal, expensive, 50-year incu-

bation period, and is rapidly emerging into commercial form. Those with foresight and courage will be the new leaders in this renaissance of an industry which has lain technically stagnant for hundreds of years."

Radio Sales to New Highs

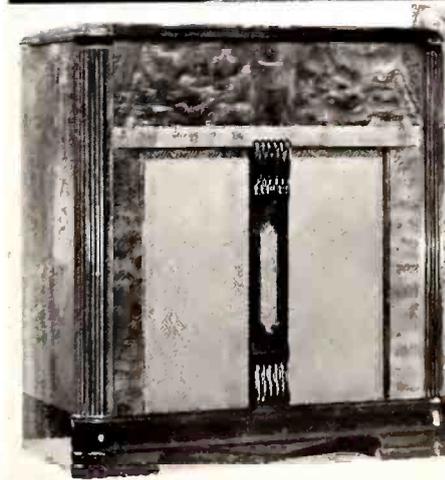
"There is a positive indication that the presidential election and various conflicts abroad will boom radio sales to new highs," says Perry F. Hadlock, receivers sales division manager for General Electric. Mr. Hadlock got this idea after he had travelled with GE radio dept. manager W. R. G. Baker through 39 key cities. He talked with dealers and distributors all over the U. S. during the tour taken by ten members of the GE headquarters staff, to introduce eight of the firm's new models.

Mr. Hadlock pointed out that the radio market is greater than that for washers, ironers and ranges combined, figured on annual sales.

RECORD - PLAYING PROFIT - MAKERS

In 18th Century style is this RCA Victrola U46 with new record changer in black and chrome. Three bands, 12 tubes. Walnut or mahogany cabinet.

A Labyrinth model, No. 430 PF from Stromberg-Carlson. Radio and automatic phonograph in genuine mahogany cabinet, Salem Chest style of 1760.



New automatic radio-phonograph by Westinghouse. Model WR476 superhet with AVC. Three-position tone control for phono, radio and television.

Imposing radio-phonograph in figured walnut, new Philco 527 for \$129.50. It has a 6-tube circuit, built-in aerial, automatic changer.

Success Story...

Remember when you first heard that The Columbia Broadcasting System was going into the record business? You wondered then what would happen. Would success breed success? Well, a year has passed and what's the answer? Never before in the recording industry has there been such a spectacular triumph. As month has succeeded month, Columbia's gains have surpassed all others. It's the new success story of records. And to Columbia Dealers from coast to coast that means more and more customers, more and more sales, more and more profits. In 1940, climb with Columbia.

COLUMBIA RECORDS



TRADE MARK

a subsidiary of

The Columbia Broadcasting System



AUTO RADIO SALES JOB

Six case histories of six prospects who finally responded to radio dealers' sales promotion and signed orders for six more car sets

1. Mrs. B. bought a refrigerator last April. The store records show that she made her last payment in March. A phone call was made, to congratulate her on her regular handling of the payments. She was in a good mood. She was told about a fresh shipment of new model of auto radios, and she promised to tell her husband about it. Mr. B. got interested, and eventually the dealer put a new set in his '38 Nash.

2. Mr. S. was in the store a week ago, and bought a table model radio. The dealer wrote him a letter, asking whether the performance of the set was perfectly satisfactory. Attached to the letter was a note in longhand, describing the advantages of having a push-button radio in the car. The idea clicked and Mr. S. took a new set for his '39 Ford.

3. Mr. J., according to a news item in the local newspaper, was planning to leave within a week for a drive to Florida. The dealer phoned him in the evening, at his home, and said that he had noticed the item and would like to have the responsibility for his radio listening during the trip. Mr. J.'s first impression was that the dealer was on his toes. Two days later his new Buick had a set installed by this alert dealer.

4. Mrs. W., whose husband had asked her to bring a set of radio tubes to the store to have them tested, men-

tioned that she had seen some new automobile radios advertised in *Life* magazine. She asked about it because, she said, she had once driven her son's car, and had noticed his "new fangled" radio. She listened to a demonstration, and agreed to bring her husband in. A date was made for a ride in the dealer's car, and when Mr. W. was certain that the installation would match his '37 Hudson, a sale was made.

5. Young Mr. C., who has a Plymouth convertible coupe, and whose habit it is to buy all possible "extras" for his car, breezed into the store and asked for "one of those aerials that look snazzy". During the demonstration, he was told that dash board fittings for the new auto sets also looked "snazzy" and that his car, with the

new receiver, would then be tops in radio equipment, and tops in looks. Mr. C. liked the idea. And so an aerial "order" was converted into a radio "sale".

6. Mr. G was an important figure in town. As an official of the Chamber of Commerce, he had worked with the radio dealer on sound installations for the meeting hall. He drove a big Packard, and was proud of it. On the street one day, the dealer told him about extra radio controls in the rear seat, and said that such an installation would top off the comfort of the car. Mr. G was told that the town mayor had ordered such a job; Mr. G was impressed and said he'd think about it. A phone call to his office three days later clinched the deal. Now he's "talking" about it.

"Listen Before You Vote"—To Sell Car Radios

A timely aid to stimulate public interest in automobile radios is the new "Listen-Before-You-Vote" campaign now being launched by the National Association of Broadcasters, 1626 K St., NW, Washington, D. C. All the principal broadcasting stations of the United States are members of this group, which plans to put on the air during April and May promotional "spot" announcements and programs reminding the public that radio will elect the next president. Hence every motorist will want to have a new car

radio or to put his present set in first-class condition through the purchase of new tubes, parts or repair service, in order to hear the important news from the June and July party conventions which will set the stage for the electoral struggle in the Fall. Radio dealers and servicemen are urged to tie in with this "Listen-Before-You-Vote" campaign through their own ads, letters and window displays, to help sell more car-radios in their own communities this spring and summer.

..... **CHOICE**
OF THREE BANDS *with this*
POWERFUL . . . EFFICIENT
AUTOMOBILE RECEIVER . .



MODEL 1079 7 tubes: 1—6K8. 2—6K7. 1—6Q7.
 1—6JS. 1—6N7. 1—6X5.

8 watts undistorted output. Three full bands. 8 inch P. M. speaker. Full range tone control: Automatic Volume control. Squelch circuit. Receiver: 9½x7½x6 inches. Speaker: 9x9x4½ inches. Complete with choice of custom control, ignition suppression equipment and matched antenna.

\$79.50 LIST

With KARADIO you can offer a choice of any three of the following bands:

1. 1600—540 KC. DOMESTIC
2. 4800—1600 KC. POLICE
3. 17 MC.—5.5 MC. EUROPEAN
4. 150—400 KC. AVIATION
5. 12 MC.—4.2 MC. AMATEUR
6. 37 MC.—12 MC. ULTRA-HIGH

KARADIO 3-band automobile receivers are ideally suited to the requirements of and are extensively used by city, county, and state police; United States Government Weather Bureau; Civil Aeronautics Authority; Radio interference inspectors; and amateur operators.

Custom Control are available for all model cars from 1936 to 1940 inclusive.

For full particulars, contact your local distributor or write direct to

KARADIO Corporation
 2233 UNIVERSITY AVE. ST. PAUL, MINN.

Also
CONVENTIONAL AUTO RADIOS
FIXED FREQUENCY POLICE RADIOS

KARADIO

MAKING MORE SALES

Furniture-Radios Bring Sales to Rochester Dealer

"A variety of radios that match any furniture decorative scheme—both in design and wood—is just as important these days as fine performance features," thinks Connie Zaenglein, manager of Hickson's, Rochester, N. Y. Zaenglein plugs "matching the radio to other furnishings" right after the Fall furniture sales.

"Results in radio sales," he says, "show that people want their new radio to match their other furniture. In many cases they didn't know it was possible, and were delighted when we showed them with an attractive window display."

With maple so popular Hickson's started their furniture-radio merchandising with a window of six maple Stromberg-Carlsons — table radio, corner cabinet, two consoles, and two occasional tables—all authentic Early American designs. They placed good sized newspaper ads featuring the sets displayed in the window; headed the ads, "Get a new Stromberg-Carlson to match your maple furniture."

Be There With a Recorder—and Cash In

A chance for radio dealers to net some extra dollars in the recorder

OF EVERY TEN RADIO DEALERS,

Eight of them sell refrigerators.

Seven sell washers.

Two of them sell refrigerators, washers, shavers, records, cleaners and cameras.

One sells refrigerators, washers, shavers, records and cleaners.

One sells refrigerators, washers and shavers.

Two sell just radio.

business arises from the fact that a good many people are interested in getting recorded versions of social or professional functions. Interesting and valuable recordings may be made of conventions, private parties, debuts, class reunions, engagement parties, banquets, smokers, church affairs, weddings, anniversaries, school activities, children parties, etc.

A dealer who has a recorder may take it to these events, or send his serviceman, and make his profit by charging a fee for the whole "recording service," or he may sell the discs, or even the recorder itself. The service is one which can be dramatically demonstrated, because prospects are quick to respond to a sample playback of their own voices or the voices of their friends.

In this connection, dealers are being licensed by Federal Recorder Co., 50 W. 47th St., New York City, to use the service of "Recorded Functions," which operates under the direction of the Federal firm. Interest is being stirred up by advertising "Recorded Functions" via direct mail locally, and by window display cards.

Electric Eye Surprises Shoppers

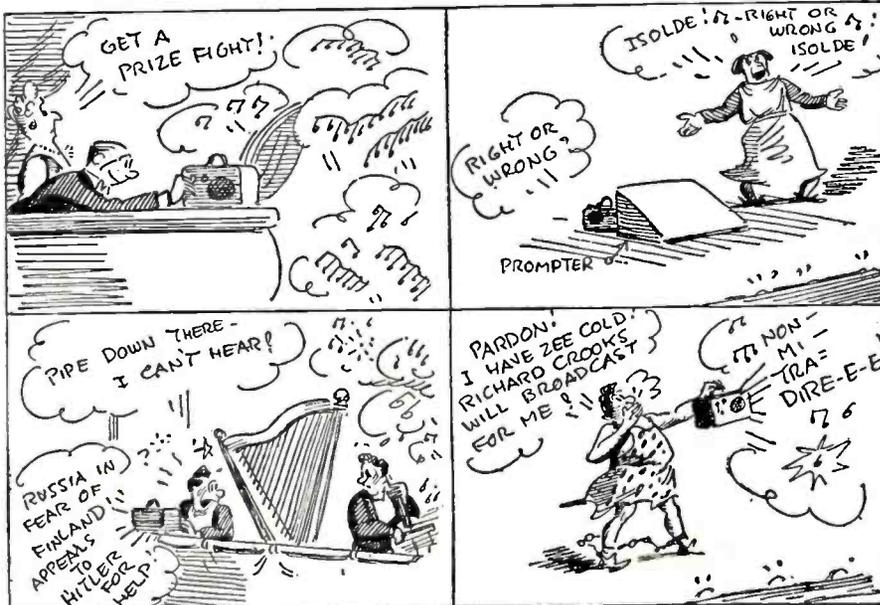
A method for getting a dramatic new appeal into the front part of a radio store is being suggested by Teletouch Industries, Inc., makers of a new electric eye. The Teletouch device has an invisible beam of light, and when placed near the radio store entrance will surprise the shoppers by sounding a chime or starting any other musical sound that the radio man may hook to the eye mechanism.

The device may also be used to start some kind of action in window displays, in cases where the window is divided by the entrance lobby, so that one part of the device can be placed on each side.

It is pointed out, too, that there are dozens of radio prospects who will be interested in the device as protection from burglars and fires in their homes. Stores, banks, factories, garages, offices, gas stations, hospitals, farms, theaters, churches, etc., are also listed as good prospects for the electric eye.

Interest in Clocks Helps Auto Radio Sales

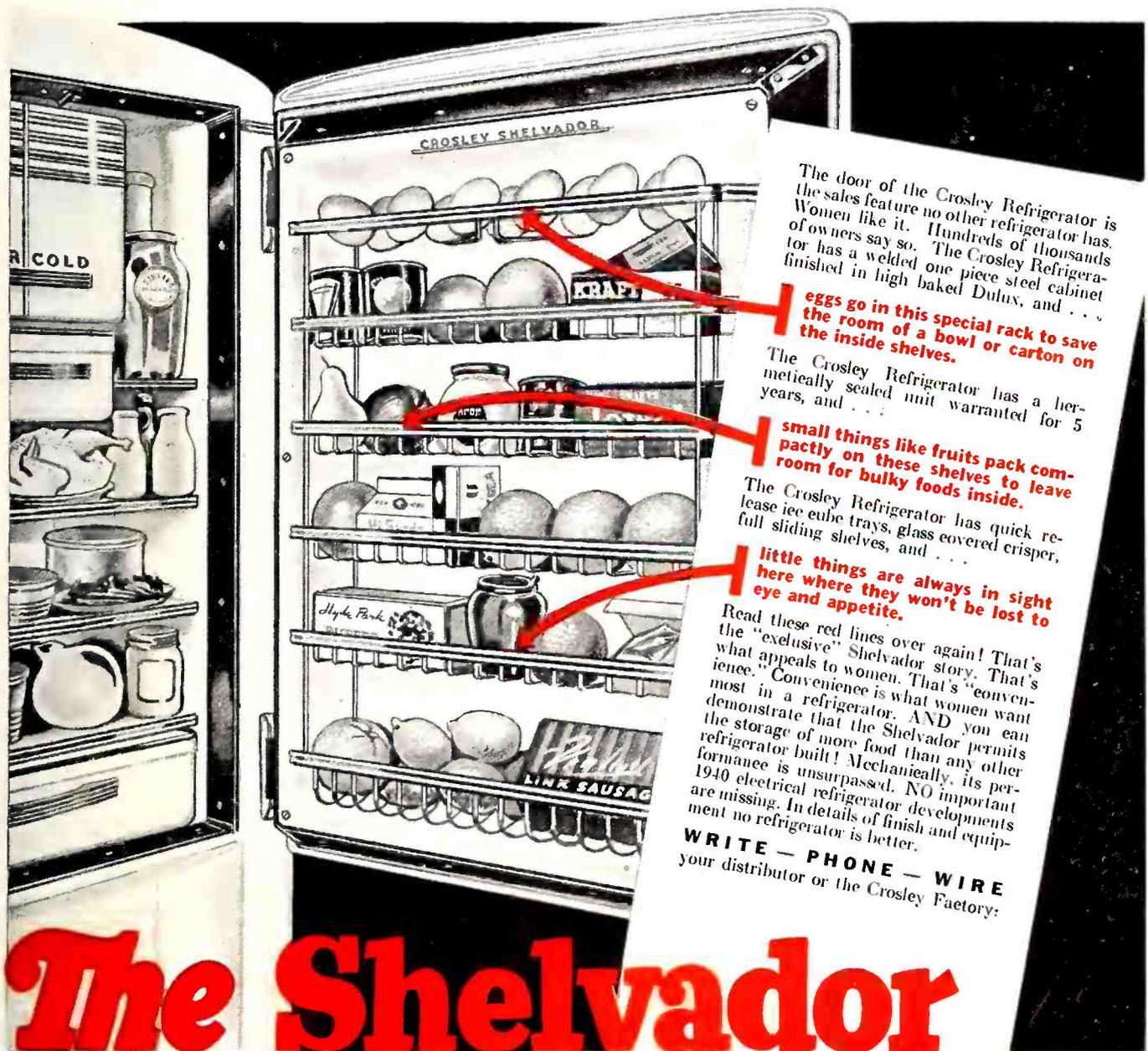
An alert auto radio merchandiser reveals that he has noticed a new demand for clocks in cars, both on the dashboard and specially installed in the rear compartment. His service department is prepared to make all kinds of custom-built installations, so this dealer is getting auto-owners interested in new clocks for their cars. It is just another way of making contact with people, and eventually approaching them on the matter of new radio receivers.



Johnstone in N. Y. World Telegram

NEWS ITEM: "Cornelius Vanderbilt, Jr., takes portable radio to opera. Sits in box and listens to foreign news broadcasts."

HERE'S THE DOOR TO EASIER REFRIGERATOR SALES IN 1940



The door of the Crosley Refrigerator is the sales feature no other refrigerator has. Women like it. Hundreds of thousands of owners say so. The Crosley Refrigerator has a welded one piece steel cabinet finished in high baked Dulux, and . . .

eggs go in this special rack to save the room of a bowl or carton on the inside shelves.

The Crosley Refrigerator has a hermetically sealed unit warranted for 5 years, and . . .

small things like fruits pack compactly on these shelves to leave room for bulky foods inside.

The Crosley Refrigerator has quick release ice cube trays, glass covered crisper, full sliding shelves, and . . .

little things are always in sight here where they won't be lost to eye and appetite.

Read these red lines over again! That's the "exclusive" Shelvador story. That's what appeals to women. That's "convenience." Convenience is what women want most in a refrigerator. AND you can demonstrate that the Shelvador permits the storage of more food than any other refrigerator built! Mechanically, its performance is unsurpassed. NO important 1940 electrical refrigerator developments are missing. In details of finish and equipment no refrigerator is better.

WRITE — PHONE — WIRE
your distributor or the Crosley Factory:

The Shelvador

(SHELVES-IN-THE-DOOR)

sells refrigerators

CROSLLEY

THE CROSLLEY CORPORATION » » CINCINNATI
 POWEL CROSLLEY, Jr., President Home of "the Nation's Station"—WLW—70 on your dial

Shelvadors sell at \$99.95 to \$249.95 with models designed for easy sales steps all the way up!

You can instantly fit any family need and pocketbook!

Crosley incorporates the best features of 1940 electric refrigeration, and only Crosley has the Shelvador.

(Prices slightly higher West of the Rockies.)

MARCH, 1940

WHAT PRICE BOXES?

**Fast-stepping refrigerator manufacturers
develop some lively new factors in market**

The tempo of refrigerator merchandising is due to speed up rather sharply in 1940. Price reductions have been announced right and left.

Dealers should be fully prepared to keep pace with the fast moving parade, and there are several reasons why retailers should be more alert in their refrigeration merchandising than ever before.

The market saturation in this field is now about 55 per cent. This means two things to the dealer.

First, the replacement market, which amounted to 25 per cent of total sales in 1939, and will probably reach 30 per cent in 1940, is now large enough to be a really important factor in both selling methods and in final net profits.

The dealer is now face to face with the serious problem of trade-ins, and depending upon how he solves the problem, it may *make* him, or *break* him.

Second, original box sales must now reach into lower income levels. *Price* becomes an increasingly important factor in maintaining the unit volume of original sales in this market.

PRICE PACKS PUNCH

Kelvinator started the trend toward lower prices, and other manufacturers have met the new quotations. Refrigerator sales volume now depends more than ever on the price appeal.

In this connection it will be recalled that the mail order "Coldspot" has already demonstrated the increasing importance of price. During 1939, some 15 per cent of all boxes sold in the U. S. were of this brand.

And why do these facts add up to a new fast tempo for 1940?

As trade-ins become more important

in total sales, the dealer must have a greater margin of gross profit to absorb the handling and allowances of the trade-ins.

Or, as in several metropolitan centers, trade-ins may be thoroughly reconditioned by a separate company and resold in open competition with the lower priced new boxes.

Will the dealer get a longer margin, in dollars?

Labor and material costs are rising, and most certainly taxes will be no lower in *our* lifetime.

MARGINS BEAR WATCHING

This year in spite of these rising production costs, line after line have announced new low prices on their 1940 models, as manufacturers deliberately endeavor to stop the increased market penetration of cheaper competition.

Lower list prices and rising production costs do not indicate longer margins for anyone. Dealers must, in fact, be definitely reconciled to *reduced* dollar margin per box, and must gear their operation accordingly.

Dealer's profits from refrigeration this year, will depend very largely on their ability to "sell up."

If they cannot sell up—and keep their margin in their own pockets, profits may be disappointingly low, or even disappear.

FEWER MODELS

Many manufacturers have simplified their lines, to make stock keeping and selling a little easier, and through production concentration, to relieve rising production costs.

Most dealers will feel pretty happy, now that their manufacturers have given them a line that competes on a price basis.

But there is nothing in past merchandising history of the mail order interests to indicate that they will give up their competitive position without a real argument.

ADJUSTMENT NECESSARY

Another important factor is that as dealers find all of their profit tied up in trade-ins, they will have to push the reconditioned boxes to "come clean" on other boxes they have sold.

The natural sequence to this is that as the trade-ins, under the influence of greater selling effort, eat into the lower-price market, there will be serious conflict and competition. Volume, on shortened margin will become more important than ever. Turnover will be vital.

If production is maintained at a level which will justify the lower prices, then the spectre of over-production, and liquidation, looms darkly. *You know what that means.*

Also, into the picture, comes Philco, with a year of "make ready" under their belt, and now "ready to go."

THE ALERT WILL WIN

With a fast moving, hard-hitting organization at their back, this smart merchandising crew may well uncover a few refrigeration merchandising tricks, as they have done in radio.

This all means that most dealers will find 1940 a different, faster moving year, than any which have gone before, in refrigeration merchandising.

The search for prospects will be faster. The importance of price will be greater. Selling effort will be harder. Competition will be keener. Volume will take on new importance. Operations must be streamlined, and selling efficiency stepped up. Conflicting lines will have to be abandoned, assortments kept in line with sales, and the entire stock kept turning fast.

More refrigerators *will be sold* in 1940, because refrigerators *will be sold more*, than ever before.



Certainly one way to "sell up" and to improve your profits even in this day of rock-bottom prices, is to demonstrate bigger "use values." Here's a Norge in a dramatic stunt showing just how much a bigger refrigerator will hold.

Now That the Smoke Is Clearing . . .

STEWART-WARNER CORPORATION

EXECUTIVE OFFICES
1826-1852 DIVERSEY PARKWAY
CHICAGO, U. S. A.

MANUFACTURERS OF
AUTOMOBILE SPEEDOMETERS, HEATERS
AND ACCESSORIES
ALEMITE LUBRICANTS, MOTOR OIL
AND EQUIPMENT
RADIOS, REFRIGERATORS, ELECTRIC
HOT WATER HEATERS
ELECTRIC RANGES
FURNITURE HARDWARE AND TRIMMINGS
DIE CASTINGS

SUBSIDIARY CORPORATIONS
THE BASSICK COMPANY
BRIDGEPORT, CONNECTICUT
STEWART-WARNER-ALEMITE CORPORATION
OF CANADA LTD.
BELLEVILLE ONTARIO CANADA
ALEMITE CORPORATION
CHICAGO, ILLINOIS.

Electric Refrigeration Dealers,
Every City, U. S. A.

Now that the smoke is clearing away, one eternal fact again emerges:
THERE'S NO BOTTOM TO PRICE!

Of course, a minority of prospects just can't make the grade in buying a refrigerator except by buying as cheaply as possible. We at Stewart-Warner know this—and we have a Big Six for such prospects priced to meet the competition in this market.

However... 35% or 40% on \$119—or \$99—or \$79—is darn small potatoes compared to the same discount on \$179, \$199 or \$249. And 80% of the refrigerators that stay sold go to homes in the "top half income bracket." So if your merchandise offers enough advantages, you can make a high-profit sale to most prospects instead of a low-profit sale.

Remember too... low price alone has little appeal to the replacement prospect who knows all too well the shortcomings of the old-style box—and who wants an improved refrigerator without those faults rather than "the same old shortcomings—priced cheap!"

That's why the sensational Stewart-Warner Dual-Temp offers you an absolutely unequalled opportunity. Already Dual-Temp sales are 60% replacements, against an estimated 25% for the industry, because these Dual-Temps are:

- the only refrigerators that answer every objection and every demand of the replacement buyer!
 - the only refrigerators that prospects can't duplicate down the street at a lower price!
 - the only refrigerators with all these radical advantages, so important that prospects rate them above price...
 - 1) BIG SEPARATE FREEZING LOCKER (22° below freezing) that holds a bushel of ice cubes, or keeps 50 pounds of food safe for months.
 - 2) Genuine HIGH HUMIDITY in upper compartment. No dried-out foods, no need for covering!
 - 3) STERILE AIR. Sterilamp kills bacteria, prevents mold and ice box odor.
 - 4) ROOMIER! Full shelves clear to the top. No bulky evaporator.
 - 5) NO DEFROSTING! Because the frost-collecting coils are gone.
- If your ambition is a smartly-priced line, with sensible step-ups from the "loss leader" up to the big-profit models, and with unmatched sales features, streamlined finance plans and exclusive merchandising dynamite—write or wire us for full details at once.

Cordially yours,

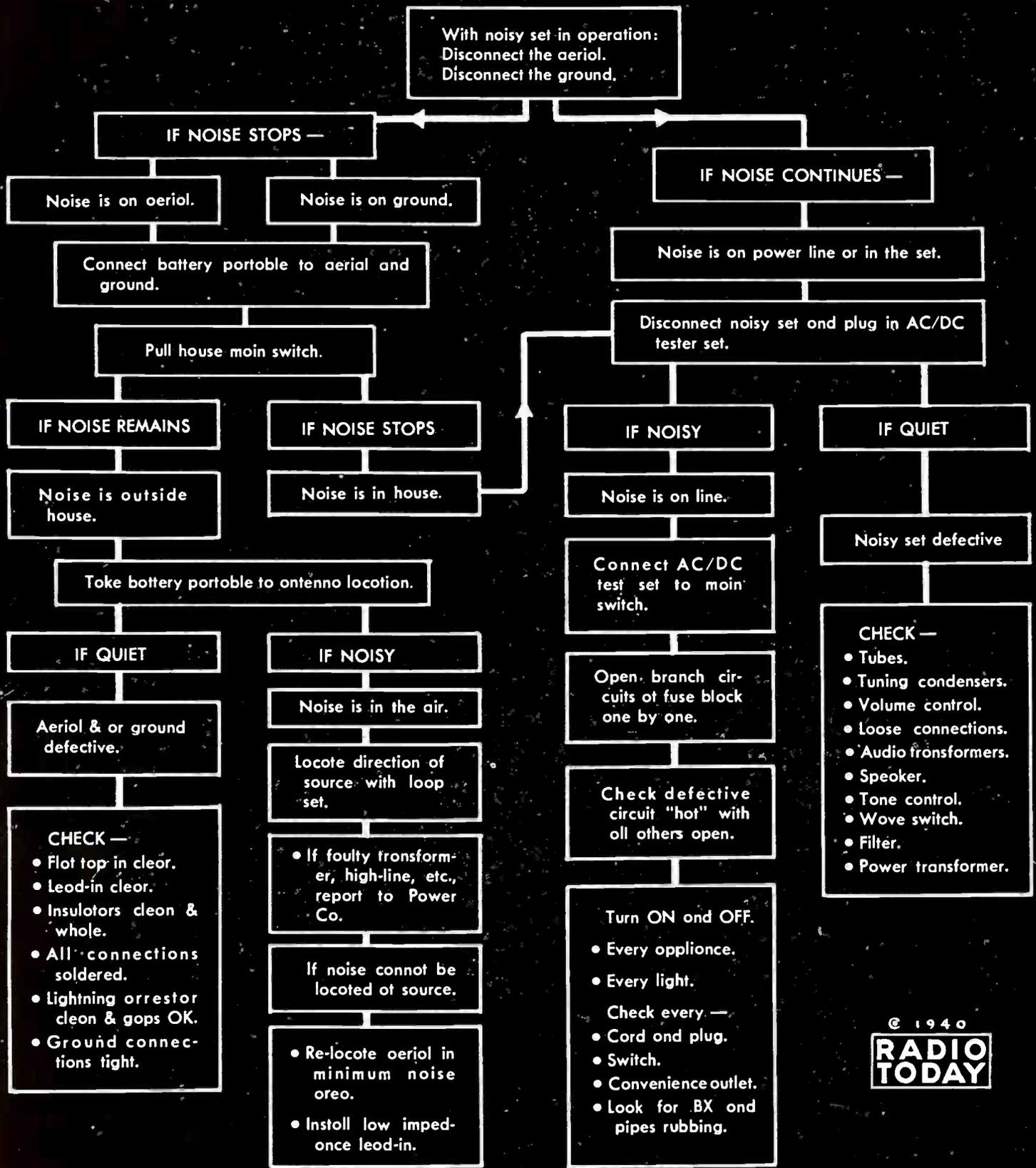
STEWART-WARNER CORPORATION

Chas. R. D'Arcy

Manager Household Appliance Division

CLEARING-THE-AIR SYSTEMATICALLY

To locate a source of radio-interfering noise—



- Defective appliances and wiring should be repaired.
- Equipment causing radio interference while in normal use may be silenced with the proper filter devices applied at the source.

- Power line noises may also be eliminated at the set with proper filter.
- Rubbing pipes causing static discharge should be bonded and grounded.

© 1940
RADIO TODAY

Here's the Finance Plan for YOU..

Here's WHY



FIRST in importance to you, in any finance plan you work with this year, is the question:

*"Will the plan attract the buyer—
and still assure my full profit?"*

There's no use your making sales if you don't pocket a profit out of them. And it's hard to make—and *hold*—a profit if the customers' rate is made low at *your* expense.

So Commercial Credit Companies bring you the new **DEALER RESERVE PLAN**, in which the first consideration is the protection of your merchandise profits.

It boils down to this:

A large part of your 1940 sales will be time payment sales. On a certain percentage of these sales, you may have to make repossessions.

After you get through paying the repossessing, reconditioning and re-selling expenses, you can seldom realize enough to show a profit—frequently you take a loss.

Most repossessions will occur in the first six months. A plan that doesn't give you protection during this crucial period lets you down. It doesn't do any good to lock the barn *after* the horse is stolen.

Commercial Credit Dealer Reserve Plan protection starts the day you make the sale, with a cash reserve set aside for you which runs as high as \$5.40 a deal.

There's the meat of it—*Profit Protection*—point number one, in *your* favor.

Do you think this protection forces higher rates to your customers? On the contrary. On this, and on all other Commercial Credit plans available to you, rates have been substantially reduced. That's point number two—and it's also in *your* favor.

Among the other plans referred to are the Limited Liability Plan—popular with many dealers—as well as the Purchaser Discount Plan—created to reward prompt paying purchasers.

Commercial Credit plans are backed by a liberal, highly efficient credit and collection service, and require but a single, simplified rate chart. Special plans are available for short-term financing; for quarterly payments by farmers; for combination and "add-on" sales; and a liberal, low-cost FHA plan for financing eligible equipment.

These are the high spots. Talk to your local Commercial Credit representative, and let him fill in the interesting details. It will be decidedly to your advantage.

* * * *

Commercial Credit Companies offer a Floor Display Plan for financing a single unit or an entire display of new merchandise. Terms are liberal and the charges extremely low. Dealers may also arrange to demonstrate this merchandise in the prospect's home. Ask your local office for full details.

COMMERCIAL CREDIT COMPANIES

NEW RADIO DRESS-UP?

More of the straight talk on the subject of "new scenery" for radio is forthcoming from radio executives. The question of freshly styled cabinets, as a stimulant to replacement sales and a general tonic for the industry, appeared in RADIO TODAY's editorial in January, "It's Time to Change the Scenery."

Vigorous comments were made last month, and now the discussion continues with a letter from Commander E. F. McDonald, Jr., president of Zenith Radio Corp. Chicago.

He says that "I think RADIO TODAY is to be congratulated on bringing to the industry's attention the urgent need for restyling radio receivers."

"WHY IS RADIO AGAINST THE WALL?"

Commander McDonald's chief question is "Why is radio against the wall?" His query continues herewith.

Is there any reason on earth why a comfort-loving human being should have to do any of the following things in connection with his radio?

1. Leave his soft seat to walk over to a radio set to tune it in.
2. Stand up before the set while tuning.
3. Drag a chair across the room in front of the radio in case he wants to SIT while tuning in.
4. Do this over and over again every time he wants to change his program.
5. Be confined to a wall cabinet, when he may not want a wall cabinet; when perhaps he hasn't even enough wall to go around for his present furniture.
6. Fool around with some complicated remote control system, wired or unwired, which if and when it works puts the controls at his chairside, when he can have the whole radio at his chairside, which was what he wanted in the first place.

Let's not fool ourselves. Radio, despite the eventual advent of new and improved forms of transmission and reception that may assist in minor ways in obsoleting old radios, is fast approaching its *real* saturation point. When reliable statistics show us that roughly 87 per cent of the homes in the country have a radio set, it is time we thought about effective ways to encourage replacement.

What are we doing about this as an industry?

The automobile industry has been confronted with the same situation and has done a wonderful job of meeting it by producing models year after year which obviously were different in design and made the older cars look antiquated.

The automobile industry has, moreover, moved as an *industry* and has created trends.

LESSON FROM AUTOS

Is there any reason why the radio industry can not take a page out of the automobile industry's book?

Or we might take a lesson from the piano industry. The piano market had reached such a point of saturation in 1936 that 40 per cent of the piano manufacturers had passed out of the business and 60 per cent of the dealers had quit or failed. It looked like the finish. Then the piano industry almost without exception got behind the small-packaged, streamlined upright, for which it got good prices and the industry started all over again, because by this move it had succeeded in obsoleting every upright on the market. And 90 per cent of the pianos sold today are of this type.

Automatic tuning was a step in the right direction. But let us look back into the history of radio a little and note that Zenith brought out automatic tuning in 1928. Yet automatic tuning did not become popular until it was adopted by the industry generally three or four years ago.

My point is that *one company* can not make a major change in the trend alone!

But the industry can do it. By industry I mean the manufacturers who make the radio, distributors who handle it sectionally throughout the country, the dealers who sell it to the consumer and very important, the dealers' salesmen who actually make the sales. It takes the same kind of unanimity there is behind a new shape in ladies' hats when they hit the market. When you get that kind of unanimity, you can just watch the old hats come off the heads and the new shapes go on!

If the leaders of the industry as a whole would get behind the chairside models, they could, within two years, obsolete the console.

The change of the industry from consoles to chairside models would

"Chairside" model
urged, in comment
on Radio Today's
editorial, "It's Time to
Change the Scenery."

have a tremendous utility value which in my opinion is not the case with the streamlining and styling of automobiles. There is as much of utility value to the public in the change from consoles to chairside models as there was in the automobile change from open cars to closed cars. I think I have made this thoroughly clear in my second paragraph. The chairside model has all the increased utility value that the desk phone had over the old-fashioned wall phone. The one objection to the chairside models, of unsightly antennae and ground wires, has now been removed.

TREND IS TOWARD NEW— MORE CONVENIENT

Wall consoles possibly should never have existed. They were just born, like Topsy. We radio manufacturers first copied the phonograph manufacturers' design and since then we have been busy trying to copy each other. The radio belongs alongside the chair where the listener sits.

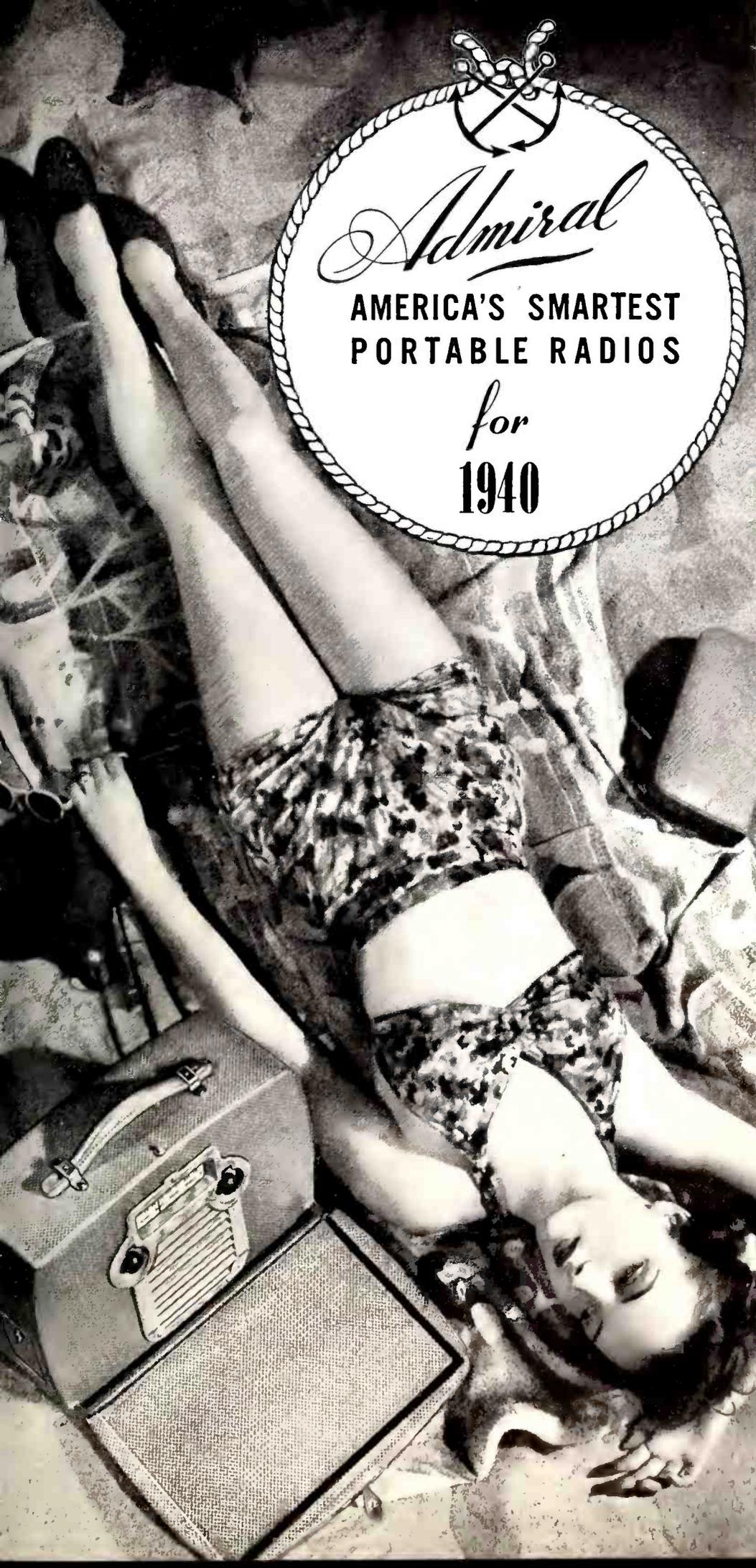
Interior decorators do not as a rule prefer consoles. They like chairside models because they fit into decorative schemes more easily and do not overpower the setting of a room. General trends are to smaller packages. Note the watch of yesterday, which was so big they called it a turnip, and compare it with the thin streamlined watch of today. You can get the price for the little package, provided you make the little package desirable.

Thousands of purchasers have selected table models and midgets because they did not want their room schemes interrupted by a console. Many of these people could have been sold chairside models . . . sold up not down! This is something for dealers to take genuinely to heart.

Two big factors have kept chairside models from achieving in a big way their true destiny in the radio industry. First, complete lines are not offered. Second, the retail salesmen, seeing chairside only as incidental in a big line, have treated them as step-children.

I believe if the industry gets behind the chairside movement to create a new trend, that the salesman will discover for himself the fact that his job in the years to come depends on his falling in line with this fundamental change in design that will pull out those old radios for him.

One manufacturer, alone, can not make this change in a short time. But with all the leaders of the industry back of the movement, I feel sure that within two years people will walk into their neighbors' homes and *think*, if they don't say it, "Oh, you still have the old-fashioned type of wall radio." When that time comes, you are going to see replacements nearly as rapidly as automobiles.



Admiral

AMERICA'S SMARTEST
PORTABLE RADIOS

for
1940

Featuring the Automatic Power Switch . . . New R. F. Circuit . . . Full Tone Speakers . . . Special Output Tube . . . Temperature Control Aperture . . . Aeroscope Magic Antenna.



Model 33-F5—5 tube AC-DC or 1½ volt battery operated superhet with tuning range 540 to 1550 K. C. Has AVC . . . P. M. heavy duty dynamic speaker . . . Aeroscope . . . automatic power switch . . . temperature control aperture . . . large output tube. Brown tweed cabinet with bakelite carrying case has rectangular grille.



Model 34-F5—Chassis same as Model 33-F5. Large handsome escutcheon combines speaker grille and tone chamber. Brown leatherette cabinet has leather carrying handle.



Model 37-G6—6 tube AC-DC or 1½ volt battery operated superhet with tuning range 540 to 1550 K.C. Has R. F. stage . . . AVC . . . 7 oz. P. M. heavy duty dynamic speaker . . . Aeroscope . . . automatic power switch . . . temperature control aperture . . . extra large output tube. Large handsome escutcheon combines speaker grille and tone chamber. Cabinet has brown leatherette sides and top with carrying handle while front and back panels are of genuine butt walnut with scuff proof finish.

Model 35-G6—Chassis same as model 37-G6. Brown leatherette cabinet with detachable cover has leather carrying handle. (See radio in picture with girl.)

See Your Jobber.

**CONTINENTAL RADIO
& TELEVISION CORP.**

3800 W. Cortland St., Chicago

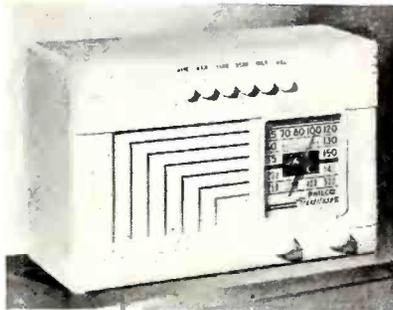
Export Office: 116 Broad St., N. Y.



GE spring radios

HJ-1205, one of new line, is 2-band receiver with 12 tubes, 2 Dynapower speakers, beamscope with front panel control.

Philco plastic model



★ PT-48, ivory plastic cabinet, table model. Push-button tuning. Built-in loop aerial. Standard Amer-

U. S. tele receivers

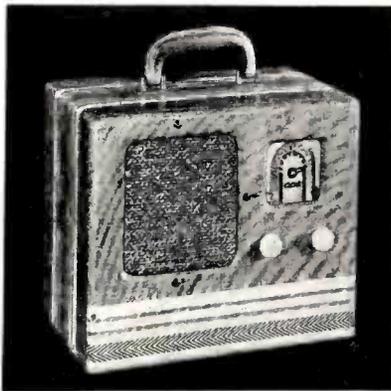
U. S. Telev. Mfg. Corp., N. Y. City, presents line of Sheraton, table and console televisions. Features direct vision, simple tuning, standard broadcast.



NEW SETS

To freshen your stock, brighten your window, and boost your sales

ican broadcast. AC-DC, superheterodyne with 5 loktal tubes. 6 $\frac{3}{8}$ in. high, 9 $\frac{1}{4}$ in. wide, and 4 in. deep. Philco Radio & Telev. Corp., Tioga & C Sts., Philadelphia, Pa.—RADIO TODAY.



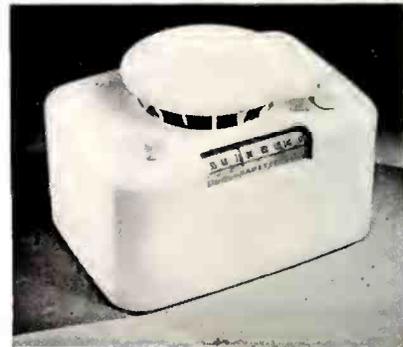
Motorola's portable

★ Model 40/65BP, called the "Headliner" is a 3-power portable with 3-gang tuning condenser and R.F. amplifier stage. Has 6 tubes, superheterodyne circuit and 6 $\frac{1}{2}$ in. permanent magnet dynamic speaker. AC/DC and 1 $\frac{1}{2}$ volts. Galvin Mfg. Corp., 4545 Augusta Blvd., Chicago, Ill.—RADIO TODAY.



Admiral all-power portable

★ Model 37-G6, a 6 tube portable operating on AC-DC or battery. R.F. stage. Automatic power switch. Aeroscope magic antenna. Brown leatherette side and top, leather carrying handle, buff walnut front and back panels. Scuff proof finish. \$29.95. Continental Radio & Television Corp., 3800 Cortland St., Chicago, Ill.—RADIO TODAY.



Kadette table model

★ The "Topper," a plastic-housed receiver with 5 tubes is an AC-DC superhet. It features all-directional sound diffusion. Has enclosed loop antenna. Cabinet comes in ivory, walnut, ivory with brown top and knobs, and brown with ivory top and knobs. \$14.95 to \$19.95. Kadette Radio Corp., Ann Arbor, Mich.—RADIO TODAY.



Zenith combination

★ An 8-tube radio-phono combination with doors opening from the front concealing the automatic record playing apparatus. Provides personal control of tone values through the regulation of the Phonorgan and Radiorgan. Black, easy-to-read dials, built-in wave-magnet, automatic tuning, television sound connection, 3-band reception. \$159.95. Zenith Radio Corp., 6001 Dickens Ave., Chicago, Ill.—RADIO TODAY.

"There's *Real money* in the RCA Franchise"

... says **HARRY SAVAGE**
Southern Sales Company, Oklahoma City, Okla.

"It didn't take us very long to find out there's real money in the RCA Franchise. Business has been fine since we took on RCA Test Equipment, Receiving Tubes and Power Tubes. And why not? After all, they're the best in the business. And it pays to sell the best."



Only RCA Offers You All Three

**TEST EQUIPMENT
RECEIVING TUBES
POWER TUBES**

(Transmitting,
Cathode Ray, and Special
Purpose Tubes)



Get in on the
Real money
the Big **THREE** offers

EVERYBODY in Oklahoma City likes Harry Savage. His fine business judgment has earned him wide respect. His experience in the business more than qualifies him to comment on the RCA Franchise.

He thinks the RCA Big Three is a profit natural. And leading jobbers everywhere agree. It only stands to reason that RCA Test Equipment is outstanding. It is backed by more actual service experience in every field of radio and sound. RCA receiving tubes have acceptance without equal. And no one questions the superiority of RCA in the field of power and special purpose tubes.

You get the best in all three with the RCA Franchise . . . and Harry Savage is only one of the many leading jobbers who is glad to say what he thinks about RCA's Big Three.

Over 335 million RCA Radio Tubes have been purchased by radio users. In tubes, as in parts and test equipment, it pays to go RCA All the Way.



Tubes and Test Equipment

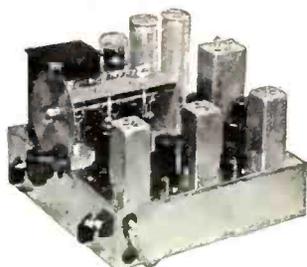
RCA Manufacturing Company, Inc., Camden, N. J. • A Service of the Radio Corporation of America

NEW THINGS



Howard radio-phonograph

★ Howard Radio Co. announces 4 new phonograph combinations with home recording features, one of which is illustrated. Two of the models include automatic phono record changers. Fader-mixer feature makes it possible to sing or record comments against radio in the background. Hepplewhite period cabinet in mahogany or walnut. \$119.95 to \$199.50. Howard Radio Co., 1731 Belmont Ave., Chicago, Ill.—RADIO TODAY.



Browning FM adapter

★ Seven tube frequency modulation set includes RF, 1F, first and second detectors, and power supply. Wide band 3 mc. 1F stages gives high quality reception. Tunes approximately 40 to 50 mc. May be plugged into phono jack of any receiver. Also available in kit form. Browning Labs. Inc., 750 Main St., Winchester, Mass.—RADIO TODAY.



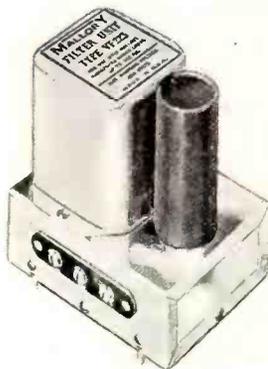
DeWald model 663-664

★ Radio-phonograph combination with 6 tubes, superhet circuit. Built-in Loopantenna. PM speaker. Crystal pick-up. Plays up to 12 inch records with lid closed. Walnut cabinet. Model 663, AC only, \$37.50; 664, AC-DC, \$47.50. DeWald Radio Mfg. Corp., 436 Lafayette St., New York, N. Y.—RADIO TODAY.



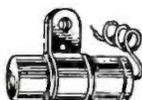
Majestic AC-DC receiver

★ Model 5CAA, 6 tube superheterodyne with 2 wave bands for American and foreign broadcast. Electro-dynamic speaker. Operates on AC or DC. Automatic volume control and tone control. Walnut cabinet. Majestic Radio & Television Corp., 2600 W. 50th St., Chicago, Ill.—RADIO TODAY.



Mallory filter pack

★ New audio or hum filter, VF-223, for use with Vibrapacks. Unit consists of 15-15-10 mfd. capacitor and low DC resistance choke. Conventional pi section filter with 10 mfd. tap brought out for separate use. P. R. Mallory & Co., Indianapolis, Ind.—RADIO TODAY.



American capacitor

★ Generator and motor capacitor with bracket mounting, is sealed in high melting point wax. Soldered contacts and rigid construction prevent failure from vibration. May be used as by-pass in auto sets. American Condenser Co., 2508 S. Michigan Ave., Chicago, Ill.—RADIO TODAY.

Worner photo relays

★ Line of new photoelectric relays and alarms feature two unit and single reflecting types. Model 601 lists at \$19.50 and has mirror reflector for mounting on doors, etc. Other models from \$11.50 to \$46.50. Worner Products, 1019 W. Lake St., Chicago, Ill.—RADIO TODAY.



Stewart Warner console

★ A 9-tube superhet is Model 01-9A7 with built-in magic antenna. Has 8 push-buttons (6 for stations, 1 for manual, 1 for phono-switch). Illuminated glass linear dial. Covers standard broadcast, short wave. 3-position tone control, A.V.C. Provides for record player and television sound. Stewart-Warner Corp., 1826 Diversey Pkwy., Chicago, Ill.—RADIO TODAY.

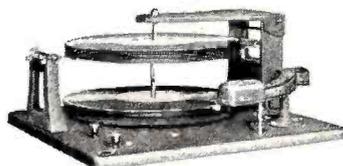
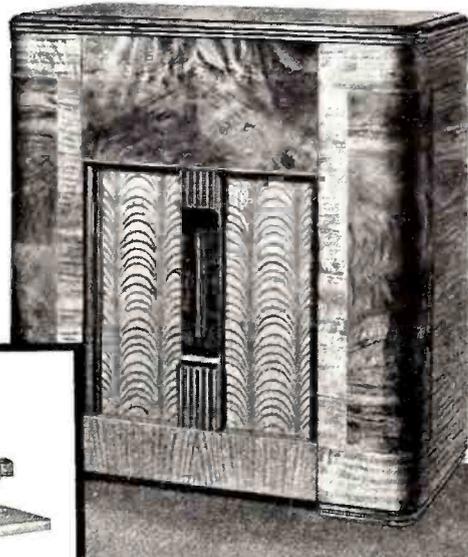


Radiart 1940 auto aerials

★ Three new items announced by Radiart Corp. include a new cowl mount insulator with plug-in antenna lead, all metal threaded boss. Insulator may be tightened anywhere along antenna. Static Muffler ball tip consists of plastic ball with potential equalizing ring and is on most units in the new line. Also new is mechanical remote controlled antenna. Flexible cable operates sections. Radiart Corp., 13229 Shaw Ave., Cleveland, Ohio.—RADIO TODAY.

SIZZLING HOT VALUES IN COMBINATIONS

by Farnsworth



THE FAMOUS FARNSWORTH-CAPEHART RECORD-CHANGER

Farnsworth has the selling advantage of the famous Farnsworth-Capehart record-changer. Easy to load. Guides each record to the turntable in a flat position . . . gently without chipping, cutting or scratching the record. Plays 12-inch or 10-inch records automatically. Let your customers see its amazingly smooth performance . . . and your Farnsworth sale is made.

FARNSWORTH foresaw the sweeping trend to combinations . . . built a superb line of quality radio-phonograph units that *have cracked this new, big-profit market wide open.*

Every Farnsworth combination instrument is built to give customers what they're looking for . . . models and prices designed to suit *every prospect who enters your door!*

Model AK-59 — typical of the Farnsworth value parade

Here's the instrument that established the standards of performance and value for the industry . . . an instrument that makes customers' eyes pop out . . . purses pop open. They know a bargain in quality entertainment when they see and hear it! A *low-priced* unit with a *high performance rating*, the AK-59 is packed with features that make

your selling easy. One, the famous Farnsworth-Capehart record-changer, is a sure-fire sales clincher.

The Farnsworth heritage of fine musical reproduction

When the Farnsworth organization was formed, it inherited the experience of some of the ablest sound-engineers of the nation, together with the best merchandising brains the industry offered. For years, these experts have developed and helped dealers sell, *profitably*, instruments for fine musical reproduction. The Farnsworth Line, and the sales strategy back of it, benefit

Here's the now famous Model AK-59 . . . the unit that's making a WOW hit from coast to coast. No wonder! It has everything! Just read these features: A beautiful, semi-modern cabinet, outstanding 7-tube superheterodyne circuit, 2 wave bands, tone control, Bilt-In-Tenno, beam power output, push buttons, 12-inch symphonic speaker, phonograph with the famous Farnsworth-Capehart record-changer, television-sound connection. At a price that sends it right out on your delivery truck.

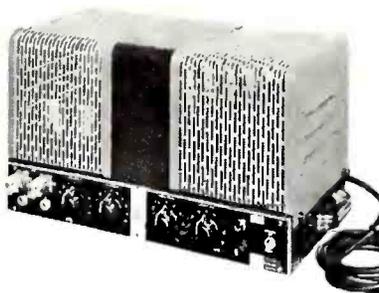
immeasurably from this enviable background.

Join the Farnsworth parade to greater profits

The public has demonstrated that Farnsworth combinations are what it wants . . . proved it with fistfuls of money. Here is merchandise tailor-made to step customers up from low-unit sales to the high-profit combination brackets. And Farnsworth policies are designed to protect the *dealers'* interests. See your Farnsworth distributor immediately for the money-making facts. *Watch Farnsworth for '40!*

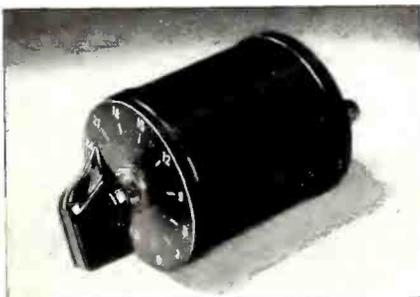
★ FARNSWORTH TELEVISION & RADIO CORPORATION . . . FORT WAYNE and MARION, INDIANA

NEW PRODUCTS



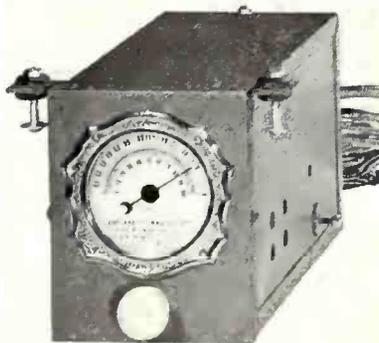
RCA amplifier

★ New 25-watt unit model, MI-12205 features automatic bass compensation, 4-channel mixing, "natural contour" knobs. Available for 105-125 volts 50-60 cycles and 110-220 volts 25-60 cycles. Two position mixer and a high-fi 20-watt PM speaker with 8-inch cone are also new products in sound line. RCA Mfg. Co., Camden, N. J.—RADIO TODAY.



Clarostat attenuator

★ Constant impedance output attenuator dissipates 10 watts. Stock ranges are 8, 15, 50, 200, 250 and 500 ohms. Series CIB controls are single hole mounting, may be used as distortionless volume control at speaker or in amplifier. Clarostat Mfg. Co., 285 6th St., Brooklyn, N. Y.—RADIO TODAY.



ABC Converter

★ Model 500-A auto radio converter covers 1600 to 6000 kc, model 600-A covers 5800 to 18,500 kc. List price is \$21.95 and \$24.95 respectively. Converters contain 2 tubes

and may be used with any auto receiver. Auto set is tuned from 600 to 700 kc to pick up intermediate frequency. ABC Radio Labs., 3335 N. New Jersey St., Indianapolis, Ind.—RADIO TODAY.

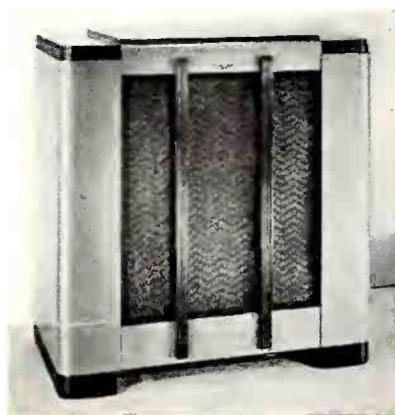
Rek-O-Kut portable recorder

★ New portable recorder combines record player and 12-inch over-head feed recording mechanism. Designed for use with external amplifier, RK cuts 100 lines to the inch, inside out. 18 x 16 $\frac{3}{4}$ x 10 $\frac{1}{2}$ case. Unit weighs 30 lbs. Price, net, \$69.50. Rek-O-Kut Corp., 254 Canal St., New York, N. Y.—RADIO TODAY.



Hytron HY30Z

★ New high efficiency triode will function as zero-bias RF amplifier, modulator, oscillator, and general purpose. Filament is 6.3 at 2.25 amps. Plate dissipation, 25 watts at 850 plate volts. Amplification factor, 87. Mutual conductance, 3600. Full ratings to 60 mc. Net, \$2.50. Hytronic Labs., 23 New Derby St., Salem, Mass.—RADIO TODAY.



Stromberg-Carlson speaker

★ No. 35 monitor speaker provides high fidelity outlet for AM and FM programs. Extremely wide frequency range is realized with the use of the acoustic Labyrinth and Carpinchoe leather speakers. The high and low frequency speakers are of coaxial design and give a sound distribution of 100 degrees. List, \$139.50. Stromberg-Carlson Tel. Mfg. Co., 100 Carlson Rd., Rochester, N. Y.—RADIO TODAY.



Atlas reflex trumpet

★ One of new line of storm-proof dynamic reflex trumpets and driver units is this model with 6-foot air column. Bell opening is 29 inches; total depth including driver is 35 inches. Completely enclosed driver; gray lacquer and red trim finish. Complete with adjustable stand. Atlas Sound Corp., 1449 39th St., Brooklyn, N. Y.—RADIO TODAY.



Permo Point recorder needle

★ Standard size recording needle has special alloy welded to drawn shank, thus giving long operating life. Cutting needle made with uniform radius to cut standard groove. Permo Products Corp., 6415 Ravenswood Ave., Chicago, Ill.—RADIO TODAY.

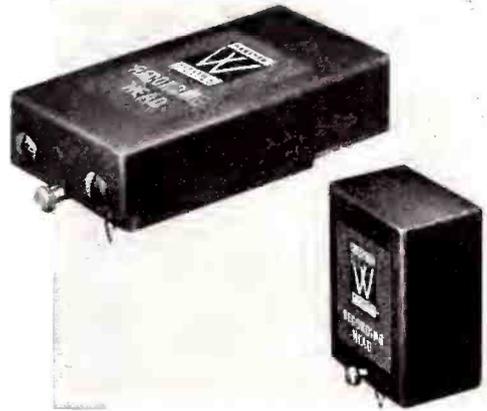


Knight compact PA

★ Portable one-unit "Speechmaster" delivers 14 watts. Separate mixing controls for mike and phono. Provision for extra speakers. Uni-directional mike. Size, 18 x 17 x 13 $\frac{1}{4}$. Also available in 7-watt size. Lighted reading top. Allied Radio Corp., 833 W. Jackson Blvd., Chicago, Ill.—RADIO TODAY.

New... Webster Electric Recorder Heads

The new Webster Electric Recorder Heads are unique and outstanding in performance. Available in two models as illustrated, both of which are of extreme simplicity in mechanical and electrical design. . . . A true knife edge bearing (Webster Patent 1,787,579) and proper armature design aid in overcoming high frequency losses, characteristic of instantaneous records. . . . The method and means of armature damping have a life expectancy exceeding that previously possible with rubber and rubber substitutes. . . . With an electrical matching impedance of 8 ohms, a useful playback response extending from 30 cycles per second to well over 6000 cycles, is easily attained without additional compensation. The Webster Electric Recorder Head has no "peaks" or "valleys" anywhere in its entire frequency range. Recordings are distinguished by their "clean" quality and remarkable musical "detail."



A New Model Pick-Up



Here is a new pick-up assembly that bids fair to be the design of the year. As usual it incorporates the long-life crystal element cartridge of typical Webster Electric design. . . . The crystal is of sturdy, lightweight, waterproof construction. . . . The frequency response is from 50 to 8500 cycles. . . . The needle pressure is low, being only 2 ounces. Long record life is thusly insured. . . . The arm mounting is rubber-cushioned, provision has been made for convenient single-hole mounting and the entire assembly is neat and compact. Arm can be tilted for inserting needle and to facilitate inspection. . . . When you are called upon to replace a pick-up, do it with a Webster Electric Pick-Up. Licensed under patents of the Brush Development Company.

Smart Dealers Install Webster Electric Sound Equipment

The Webster Electric line of sound equipment incorporates base amplifiers of from 12 to 50 watts. Power booster stages and complete permanent portable and mobile systems. . . . All of this equipment is the last word in mechanical and electrical design. From a performance viewpoint it has no superior. . . . It is ultra-modern in appearance—streamlined with a three-tone finish and chrome trim. . . . When you sell a Webster Electric Sound System you are providing your customers with fine tone quality and equipment that is applicable to every installation requirement. . . . Write for the new Webster Electric Sound Equipment Catalog.



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TESTING POWER SUPPLIES

Tracking down trouble in transformer-type power units. Using your instruments to check operation.

In practically every type of electronic equipment the section that "makes the wheels go round" is the source of DC power.

Receivers and amplifiers must have a steady, hum-free, and well regulated operating voltage. Electro-dynamic speakers need a DC magnetizing current.

The major types of power supplies used in radio and PA amplifiers can be grouped into, 1. tube-transformer types, 2. "transformerless" half-wave and voltage doubling circuits, 3. vibrators and rectifiers supplied from DC sources, 4. metallic rectifiers.

Let's take a look at some of the things that go wrong with tube-transformer power supplies and some of the methods for quickly finding the trouble.

CONDENSER TROUBLES

Because of the simplicity of the power supply circuit, it is likely to be overlooked as a source of trouble, when the set is "haywire." Cases of distortion, motorboating, and hum modulation may be traced to poor voltage regulation and loose laminations in transformer or choke cores.

The most common power supply failure point is the filter capacitors.

Heat and surge voltage are the two enemies of filter condensers. The natural moisture of the electrolyte is gradually dried out by the heat from the rectifier tube and transformer. These high temperatures increase the leakage current and lower the capacity when continued for long periods of time. The whole process continues to reduce the efficiency of the filter until the hum level becomes so high it is almost impossible to use the set.

Wet electrolytics will "boil out" at high temperatures. Any time a green or white crust is visible around the vent holes, the capacitor should be tested for DC leakage current, capacity, and power factor.

VOLTAGE RATINGS

The variation in capacity may be decided upon by using the Capacity Tolerance Chart found in the Trade Directory section of this issue. The DC leakage current should be less than 2.5 MA for wet and 1 MA+ .06 MA per mfd. for dry electrolytic capacitors.

Replacement filter condensers should be selected (where exact replacements are not used) by three electrical classifications; capacity, working voltage, and surge voltage. (Peak ripple voltage is also important in half-wave rectifiers but these are uncommon in receivers.)

The voltage rating of electrolytic capacitors is a function of the character of the anode film, the voltage at which the film was formed, and the type of electrolyte used. The DC working voltage is the maximum direct current potential at which the capacitor will operate continuously within its normal temperature range. The normal temperature range of dry electrolytics is 32° F. to 140° F. The surge voltage is the maximum voltage a capacitor will stand for a period of five minutes when applied through a series resistance of 20,000 ohms divided by the capacity in microfarads. The surge voltage encountered when the set is first turned on may be sufficient to destroy the filter capacitors, especially the input unit.

Important power supply characteristics are voltage regulation, purity of output voltage, and the magnitude of the voltage.

VOLTAGE REGULATION

The percent voltage regulation is the no-load voltage less the full-load voltage, the quantity multiplied by 100. Thus a power supply delivering 250 volts at full-load and 300 at no-load has a regulation of $(300-250)/250 \times 100$ or 20 per cent.

Poor regulation due to changes in line voltage may be cause of "motorboating" in audio amplifier stages. The rising voltage causes the tubes to draw more current which flows through the load resistance and depending upon the frequency of voltage fluctuation the pulses are amplified giving a "motorboat" noise. Improving the regulation with bleeder resistances, larger power transformer, and low resistance chokes is the solution.

FIND FAULTS

The oscilloscope is a handy device to use in checking the operation of power supplies. In Fig. 1 a typical power supply is shown with switches added to connect and disconnect filter capacitors and load. These switches were used *only to set up the conditions of open input, open output capacitors, shorted choke, etc.* They need not be added to a receiver power supply to make these tests. The six oscillograms shown were obtained with the circuit shown. The vertical plates were connected to AB, BC, or CA as indicated under the corresponding graph. The sweep was internal and the frequency range was set to cover 60 and 120 cycles. Controls remained set during the test with the exception of graphs No. 3, 5, and 6 where the gain on the vertical oscilloscope amplifier was advanced to the limit.

NO FILTER

Oscillograph 1 is the conventional full-wave voltage out of the rectifier under a load of 13 ma. The oscilloscope leads were connected to A-C. Just which lead is connected to A and which to C is not important. If the wave is upside down with respect to the traces shown in Fig. 2, the leads may be reversed to right it. No filter capacity or choke was in the circuit.

If the load from the rectifier is removed, as would be the case with an open choke or series speaker field, the wave on the 'scope becomes very irregular and has the appearance of half-wave rectification. The tops and bot-

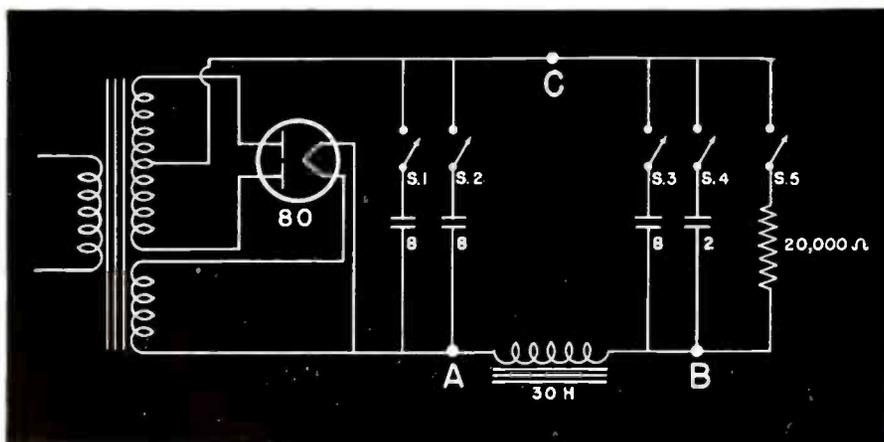


Fig. 1—Typical receiver power supply used to obtain oscillographs. Open condenser conditions were duplicated with switches. A, B, and C are points to which vertical plates of oscilloscope are connected for testing any supply.

WHERE THEY ARE!

Sonora's Fast-Selling

SPRING AND SUMMER

"WINNERS"!



Sensational "CANDID" PORTABLE

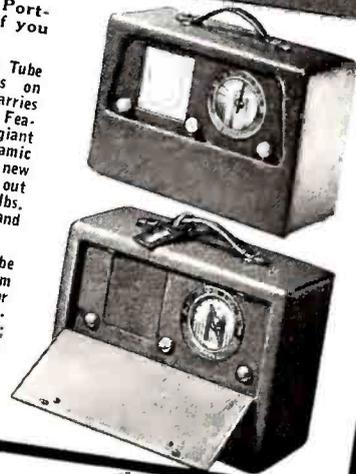
SONORA Scoops 'Em All! What a Radio! Just what "America-on-the-Go" has been waiting for! A powerful little portable 1.4 Volt Superhet with everything built-in, that carries just like a camera! Looks like a camera, too, in its beautiful strong black plastic case. There's nothing else like it; 4 Tubes; built-in "Sonorascope" antenna; 535-1720 K.C. Range; P.M. Dynamic Speaker; Full-Vision Molded Tuning Dial; Privacy Headphone Connection. Uses ordinary flashlight cells for "A," supply, regular portable battery for "B". A whiz for economy; a "honey" for tuning reach, power and tone. Size is only 8 1/4" x 5" x 4 1/2". Weighs only 5 lbs. Has leather carrying handle, with shoulder strap optional. A real "Thriller"—that the SONORA "Candid"—the set that will build profits for you—RIGHT NOW!

(*Delivery on the "Candid" Portable—April 20.)

And here are two other SONORA Portable Winners—each a Sales-Getter if you ever saw one!

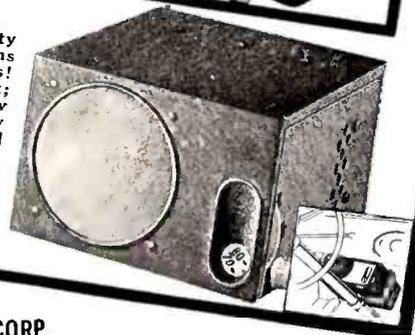
"TRIPLE-PLAY" MODEL KB-73. 5 Tube Superhet—a pace-setting "Leader". Plays on batteries or from 110 volts AC or DC. Plays on anywhere; plays everywhere! 535-1720 K.C. Features: built-in "Sonorascope" antenna; giant "Speedometer" dial; A.V.C.; 5" P.M. Dynamic Speaker; latest low-drain tubes. Beautiful new carrying case, with a style appeal that's way out in front! 14" x 9 1/2" x 6", weighs only 13 lbs. complete. Nothing like it for Sales Appeal and Profit!

"TRIPLE-PLAY" MODEL KD-75. 6 Tube Superhet—deluxe in every detail. Works from self-contained batteries or from 110 volts AC or DC. Tunes 535-1720 K.C. Has built-in "Sonorascope" antenna; exclusive "Speedometer" dial; A.V.C.; 5" P.M. Dynamic Speaker; powerful Superhet circuit. A real beauty—new luggage-type case, with protective lid, 14" x 9 1/2" x 6" weighs only 13 lbs. complete. The last word in Portables—styled and built to sell NDW.



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America's Lowest-Priced Quality Auto Radio! Aimed right at millions of used car and old-car owners! Self-installed in a jiffy. Superhet; A.V.C.; Dynamic Speaker; Low Drain; Suppressorless; Slant-View "Spot" Dial; beautiful taupe-finished all-steel case, 6 7/8" x 7 1/2" x 4 1/2". Fits any car; with bracket for dashboard mounting; optional brackets for mounting on steering column of old and new cars. A Best-Seller for the current season!



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Another SONORA "Winner"! Nothing on the market like it! A plastic-molded Phono-Radio Combination—a real beauty—available in Walnut or Ivory. 5 Tube Superhet with quality Audio Amplifier; P.M. Speaker 535-1720 K.C. Range; A.V.C.; Molded Tuning Dial. Rim-drive 78 R.P.M. motor; plays 10" and 12" records. Latest Crystal pickup; arm-rest and needle cups molded in. Nothing like it for styling and eye appeal. Size 9 3/4" x 12 3/4" x 6 1/2". A Complete Musical Instrument with "Clear as a Bell" tone—that all America can afford! Only SONORA offers you this Phono-Radio Profit-Builder!

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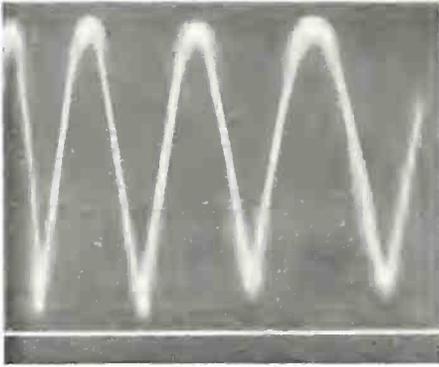
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Send Us Full Details Covering the SONORA Spring & Summer "WINNER" MODELS Shown Above (Jobbers Only).

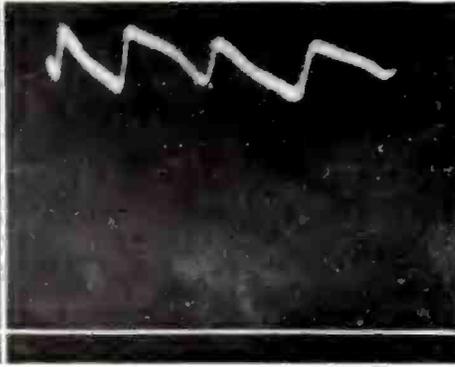
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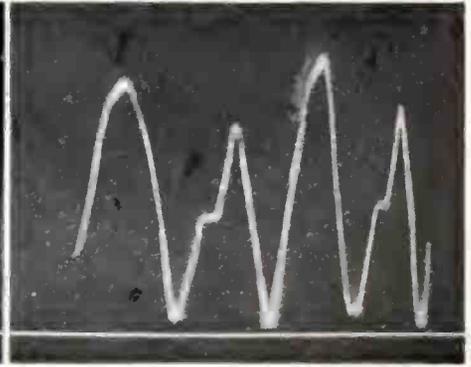
Thank you.



1. Oscilloscope connections; A-C. This is voltage wave with open filter capacitors and shorted choke. Line at bottom is 0 axis.



2. Oscilloscope connections; A-C. Voltage wave with input filter capacity good. Same wave with good or shorted choke. Output filter open.



3. Oscilloscope connections; B-C. Enlarged picture of voltage wave with input condenser good, choke good, and output condenser open.

toms. of the wave will have a saw tooth pattern. The reason for this departure from what should be a true full-wave graph is that the rectifier and transformer are not exactly symmetrical electrically and one plate "does all the work." As soon as the rectifier is supplying power to the set, the wave smooths out to its usual shape.

INPUT CAPACITY

If all the filter condensers are open but the set is drawing current, the picture on the oscillograph will appear as number 1. This should be the first check on a power supply using the 'scope.

Number 2 is a graph of the voltage across A-C. Switches S_1 and S_2 were closed giving 16 mfd. input capacity. The load on the supply was 18.5 ma. and the choke was shorted out of the circuit. This wave is the typical saw tooth voltage condition across a capacitor supplied from a rectifier. The capacitor charges up as the voltage from the rectifier increases. When the voltage passes "hump" or peak, the capacitor begins to supply the load from its charge. The steepness of the line sloping down to the right is a measure of the amount of capacity across the input. If the line is very steep, the capacity is too small and does not supply the demand until the next half cycle can again charge the capacitor.

If the output filter capacitor is open, the wave will appear as in number 2. when the connections are as described. The addition of the choke to the circuit does not change the wave shape.

Diagram 3 has the oscilloscope leads connected to B-C. This graph shows the wave of voltage across the load of 18.5 ma. with S_1 and S_2 closed and the 30H. choke in the circuit. The gain on the oscilloscope vertical amplifier was advanced to its maximum position. The choke has smoothed out the saw tooth wave to a ripple. The hump in alternate lobes of the wave shows that 60-cycle voltage is being introduced through capacity or magnetic coupling.

This wave is characteristic of an open output filter capacitor and choke ok. If the choke were shorted, the wave would be the same as number 2.

CHOKES INPUT

Number 4 was taken with the oscilloscope connected across A-B or the choke. The load on the rectifier was 14 ma. S_1 and S_2 were open while S_3 and S_4 were closed. This put 10 mfd. across the output and gave 30H. choke input.

The rising voltage across the choke, which opposes the increasing output of the rectifier tending to smooth out the "humps," carries over the "top" until the 10 mfd. output capacity supplies the load from its charge.

If the input filter condenser in the power supply is open, the wave will have the appearance of number 4 when the oscillograph is connected as shown. If the set is drawing no load the wave will be slightly smaller but has the same pattern.

Graphs 5 and 6 were taken with 'scope connected across B-C. Number 5 is for choke input and 10 mfd. capacity on the output. For both of these graphs the oscilloscope gain was maximum.

Five shows the small ripple voltage that is left when the input condenser is open.

Number 6 shows the output voltage with all capacity and inductance in the power supply. The load in this case was 18 ma.

HUM TROUBLES

Another easy check to make when trying to locate hum is to connect a pair of phones through 1000-volt 0.1 mfd. (approximately) to the output of the power supply. The hum level should be low enough not to be heard.

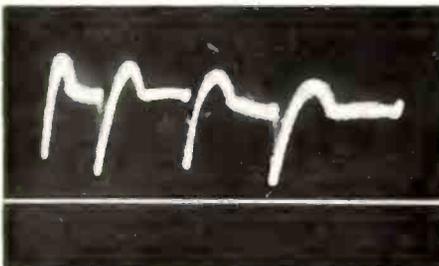
Hum in power supplies can be tough to find. Besides lack of filter, it may be due to magnetic coupling to choke, or audio transformers from the power transformer. Mercury vapor rectifiers such as 82 and 83 can stir up trouble in the form of "hash" in the loud speaker. Small equalizing resistors or RF chokes in the plate leads will do the trick.

The next time you get a set on the bench with a sick power supply, put the 'scope on it before unsoldering half the wiring. It will help you spot open inputs, outputs and bad chokes quickly.

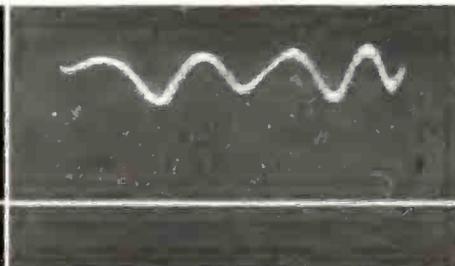
Servicing Radio by Signal Tracing

The servicing of radio has become a complex occupation, because service technique, like Topsy, "just grewed."

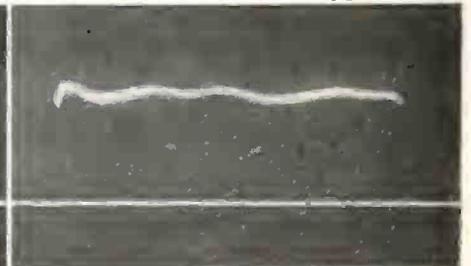
Step by step as radio receiver design has progressed from the simple one tube affair of twenty years ago, to the complex twenty and thirty tube jobs
(Continued on page 114)



4. Oscilloscope connections; A-B. This is voltage wave with no input filter. Choke and output filter good. Same wave at no load.

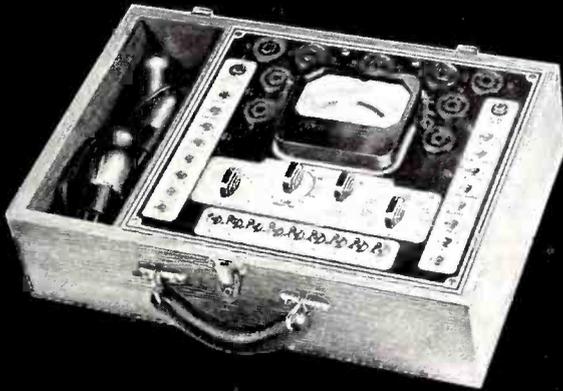


5. Oscilloscope connections; B-C. Wave with no input capacity, choke good and output filter ok. Ripple remaining with choke input.

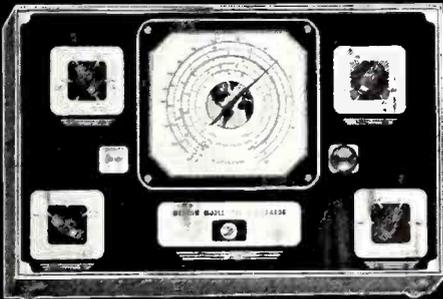


6. Oscilloscope connections; B-C. Voltage wave with input and output condensers good, and choke good. All graphs made with supply under load.

THE BEST BUYS ARE MADE "FOR KEEPS"!



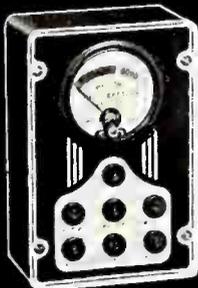
Model 774 Checkmaster . . . A tube checker with complete analyzer ranges! Tests high filament voltage tubes, ballast, miniatures, locktal and OZ4 tubes; provides noise, short and leakage tests; has spare socket, and spare tube compartment. Contains 23 circuit testing ranges for troubleshooting. Compact, inexpensively priced!



Model 776 Oscillator . . . Hand calibrated dial (no trimmers or padders used). Uniform output level regardless of frequency. Constant signal free from drift or shift in frequency. Complete attenuation of signal on all bands.



Model 669 Vacuum Tube Voltmeter and Signal Detector . . . Hear as well as measure the signal with this inexpensive instrument. Measures gain in video and sound amplifying channels—peak voltages in thyatron generators in oscillator circuits—grid potentials on cathode ray tubes—and other essential measurements in sound receivers.



Pocket Size Dry Battery Tester . . . Inexpensive unit tests dry batteries under load. "Replace—Good" scale instantly shows when the battery is delivering sufficient potential for good reception. Pin jacks for following voltages: 1.5—4.5—6—7.5—45 and 90 volts.

Long life

PLUS DEPENDABILITY AND VERSATILITY MAKE THESE WESTON'S REAL PROFIT BUILDERS!

"We buy WESTON Instruments and buy less often," says this successful serviceman. "Proper design and high quality materials and construction make them last for years, and stay dependable for their entire life. So by paying but little more, we save many dollars every year . . . hard-earned dollars which we otherwise would be forced to spend for rebuilding or for replacing obsolete equipment." » » » That's talking the serviceman's language! Lower instrument costs . . . better work . . . more profit at the end of each year.

If you, too, are anxious to cut instrument costs . . . and have the added advantage and satisfaction of working with quality instruments, you'll investigate WESTONS when you make your next buy. Remember, the difference in initial cost is negligible . . . but the saving over the years is decidedly worth while. Let us send all the facts now. Return coupon below.

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WESTON ELECTRICAL INSTRUMENT CORPORATION
597 Frelinghuysen Avenue, Newark, New Jersey
Send complete information on WESTON Radio Instruments.

Name.....
Address.....
City.....
State.....

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Postal Telegraph

"SWIFT... ACCURATE... ECONOMICAL"

1940-1941

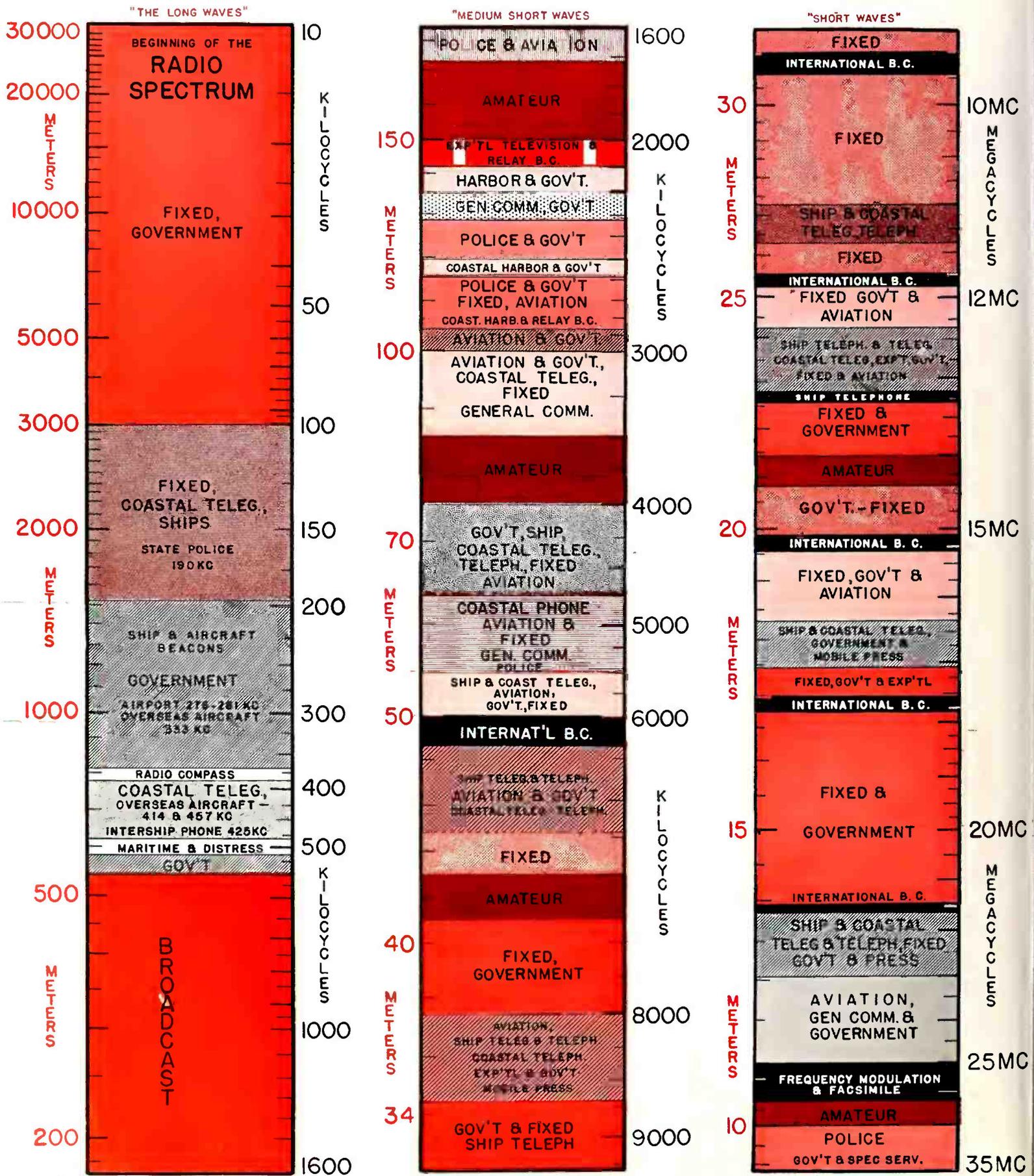
**RADIO
YEAR
BOOK**

**Including
RADIO TRADE DIRECTORY**

**RADIO
TODAY**

CALDWELL-CLEMENTS, INC.
480 Lexington Avenue, New York

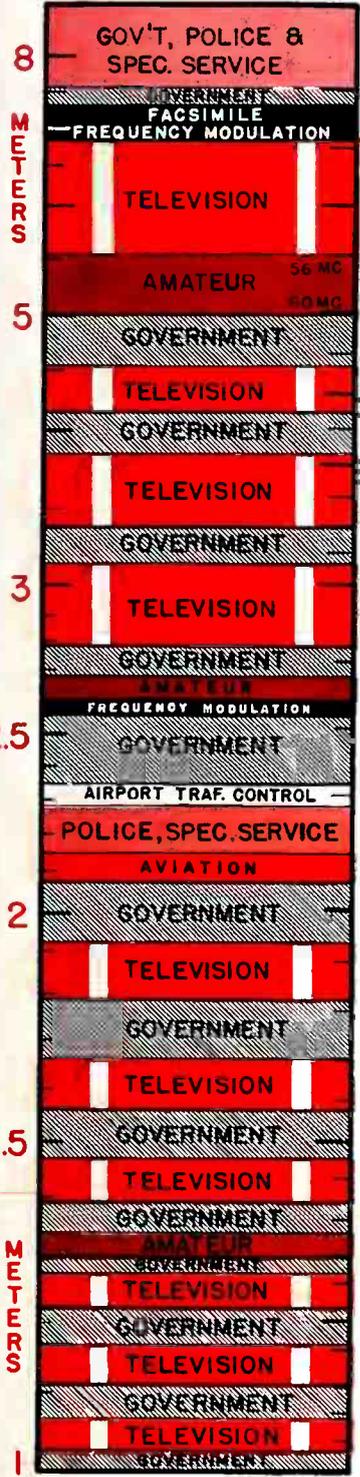
RADIO TODAY-



The Radio Spectrum, Including Latest Television, Frequency-Modulation, and Facsimile Assignments.

"ULTRA SHORT WAVES"

TELEVISION ASSIGNMENTS
(Expanded from chart at left)



TELEVISION STATIONS

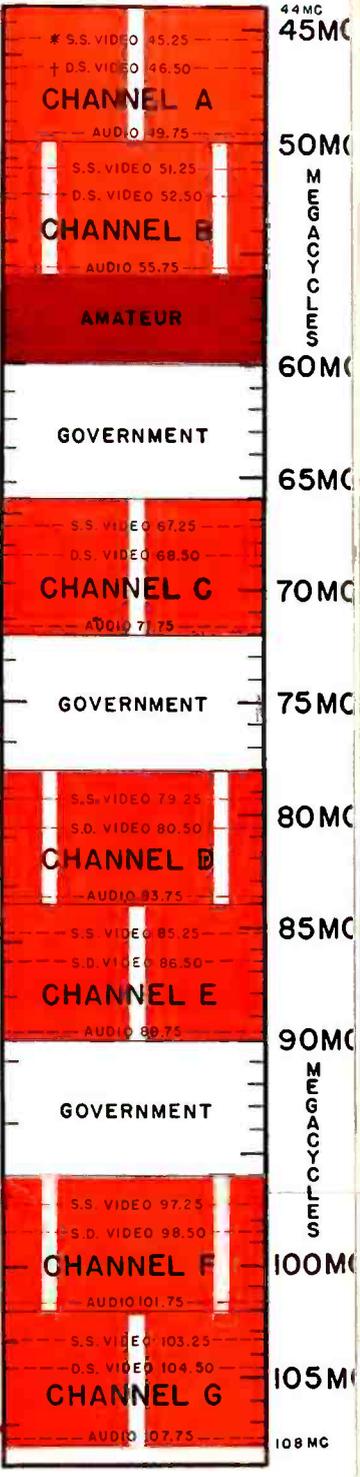
Location	Call	MC.	Location	Call	MC.
California					
Hollywood	CP	44-50	Camden	W2XBT	156-162
Los Angeles	W6XAO	42-56	Camden	W3XEP	42-56
		60-86			60-86
Los Angeles	W6XDU	318-330	Camden	W3XAD	321-327
			Passaic	W2XVT	42-56
Connecticut					
Bridgeport	W1XA	60-86	New York		
Illinois					
Chicago	W9XZV	42-56	L. I. City	W2XDR	42-56
		60-86			60-86
Indiana					
W. Lafayette	W9XG	2-2.1	New Scotland	W2XB	60-86
Iowa					
Iowa City	W9XK	2-2.1	New Scotland	W2XI	156-162
Iowa City	W9XUI	42-56	New York	W2XAB	42-60
		60-86			60-86
Massachusetts					
Boston	W1XG	42-56	New York	W2XBS	42-56
		60-86	Schenectady	W2XH	288-294
Missouri					
Kansas City	W9XAL	42-56	Philadelphia	W3XE	42-56
		60-86	Philadelphia	W3XP	204-210

FREQUENCY-MODULATION STATIONS

Location	Call	MC.	Location	Call	MC.
California					
Los Angeles (The May Co.)*		43.0	Alpine	W2XMN	42.8
Connecticut					
Avon	W1XSO	43.2	Alpine (Yankee Net.)*		43.0
Meriden	W1XPW	43.4	Newark	W2XOR	43.4
District of Columbia					
Georgetown	W3XO	43.2	New York		
Georgia					
Atlanta (W. J. Holey)*		43.2	Albany (WOKO)*		43.4
Atlanta (WATL)*		42.8	Binghamton (WBNF)*		42.6
Columbus (WRBL)*		43.0	L. I. City	W2XOR	43.2
Illinois					
Chicago (WGN)*		43.2	New Scotland	W2XOY	43.2
Chicago (WJJD)*		43.4	New York (WABC)*		43.0
Chicago (Moody Institute)*		43.0	New York	W2XWG	42.6
Chicago (W9XEN)		42.8	New York (WHIN)*		43.2
Peoria (WMBD)*		43.4	New York (WOV)*		43.8
Kentucky					
Lexington (WLAP)*		43.2	New York (Muzak Corp.)*		43.6
Maine					
Portland (WGNN)*		43.4	Rochester	W8XVB	43.2
Maryland					
Bethesda	W3XMC	42.6	Rochester	W3XAD	42.6
Massachusetts					
Boston (Edison Co.)*		43.2	Syracuse (WFBL)*		43.0
Boston	W1XK	42.6	Syracuse (WSYR)*		43.2
E. Springfield	W1XSN	42.6	Utica (WIBX)*		43.4
Fall River (WSAR)*		43.2	North Carolina		
Paxton	W1XOJ	43.0	Greensboro (WBIG)*		42.6
Worcester	W1XSQ	43.0	Ohio		
Michigan					
Detroit (WJR)*		42.8	Canton (WHBC)*		42.6
Detroit (WWJ)*		43.0	Cincinnati (WLW)*		43.2
Detroit (J. F. Hopkins)*		43.4	Cincinnati (WKRC)*		43.4
Grand Rapids (WKZO, Inc.)*		43.4	Columbus	W8XVII	43.0
Kalamazoo (WKZO, Inc.)*		42.6	Dayton (WHIO)*		42.6
Minnesota					
Minneapolis (W9XHW)		42.8	Toledo (WSPD)*		43.2
Missouri					
Kansas City (KMBC)*		42.6	Pennsylvania		
St. Louis (KXOK)*		43.0	Allison Park (KDKA)*		42.6
New Hampshire					
Mt. Washington (Yankee Net.)*		42.6	Philadelphia (WIP)*		43.4
Ohio					
			Philadelphia (KYW)*		42.6
			Phil. (J. R. Popkin)*		43.0
			Rhode Island		
			Providence (Outlet Co.)*		43.4
			Providence (Cherry & Webb)*		42.8
			Tennessee		
			Chattanooga (WAPQ)*		43.4
			Texas		
			Amarillo (KQDA)*		43.2
			Utah		
			Antelope Island (Radio Service Corp.)*		43.2
			Salt Lake City (KSL)*		42.8
			Wisconsin		
			Milwaukee	W9XAO	42.6
			Superior	W9XYH	43.0
			*—Applicants		

FACSIMILE STATIONS

Location	Call	KC.	Location	Call	KC.
Illinois					
Chicago	WGN	720	St. Louis	W9XZY	25.1
Iowa					
Des Moines	WHIO	1000	St. Louis	W9XSP	25.25
New Jersey					
Newark	WOR	710	Newark	W2XUP	25.25
New York					
Albany	WOKO	1430	Albany	W2XWE	25.05
			Buffalo	W8XA	43.7
			Long Island City	W2XR	43.58
			New York	W2XBF	43.74
Ohio					
Cincinnati	WLW	700	Cincinnati	W8XUJ	25.02
Cleveland	W1K	1390	Cincinnati	W8XVC	25.17
Tennessee					
Nashville	WSM	650	Columbus	W8XUM	25.2
Kentucky					
Nashville	W4XIII	25.25	Tennessee		
Mc.					
Eastwood	W9XWT	25.25	Nashville	W4XIII	25.25
Texas					
Jackson	W8XUF	43.9	Dallas	W5XGR	25.25
			Spokane	W7XSW	25.15



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480 LEXINGTON AVE.
NEW YORK, N. Y.

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Maintained Leadership in Resistors Since 1921



"Grid Leak"

1921 The advent of commercial broadcasting—the first dependable "grid leak" is produced, the forerunner of the now-famous metallized filament-type resistance element.



Type F

1925 A radical improvement in the filament type resistor—new stable filament embedded in ceramic form with molded metal terminals—the recognized standard of quality for many years.



Power Wire Wound
Type "A" Coating

1932 IRC announces the first moisture-proof cement coating for power wire wound resistors—a coating that, today, remains the standard for difficult applications.



Type "A"
Volume Control

1932 Bakelite resistance element for volume controls—durable and moisture proof—first made commercially available for the industry.



Type BT

1933 IRC introduces the first bakelite-insulated resistor. This principle has since been adopted almost universally by the resistor industry. Today, IRC is still the only firm making a complete line of insulated low-wattage units.



Type "B"
Volume Control

1934 Multiple Finger Contactor for volume controls—each finger independently acting—resulting in quieter and more uniform controls—first introduced. This principle gradually being adopted by other manufacturers of controls.

1936 Departing from conventional designs, IRC produces the first medium-power wire wound resistors with high temperature, molded bakelite insulation—also a complete line of low-power insulated wire wounds.



Type MW



Type BW

1937 The Spiral Spring Connector—replacing sliding metal-to-metal contact—is developed to eliminate the last major source of noise in volume controls.



Type "CS"
Volume Control

1937 IRC introduces cement coating affording maximum protection against excessive humidity conditions. It withstands the standard U. S. Navy salt immersion cycling tests.



Power Wire Wound
Type "C" Coating

1938 IRC introduces a new type all-metal power rheostat, having practically the same temperature rise with full load across small sections as across entire unit.



Type PR

1938 IRC announces the first Attenuators with commutator switching device and Spiral Spring Connectors.

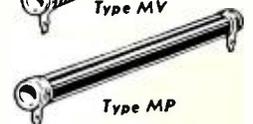


Type A-21

1939 The metallized filament principle is applied to large resistor forms. IRC makes commercially available high voltage resistors, for use up to 100 kilovolts, and power resistors for use at high frequencies.



Type MV



Type MP

1940 The increased scope of IRC specialized engineering activity insures continued leadership as expressed in further important fixed and variable resistor developments.

INTERNATIONAL



RESISTANCE CO.

405 NORTH BROAD ST., PHILADELPHIA, PA.

Makers of Resistance Units of More Types, in More Shapes, for More Applications, Than Any Other Manufacturer in the World

U. S. RADIO STATISTICS

Radio Today's Facts and Figures on the Business

	Total Investment	Annual Gross Revenue	No. of Employees	Annual Payroll
Radio mfrs.,* distributors, etc.....	\$150,000,000		75,000**	\$80,000,000
Broadcasting stations (810).....	\$75,000,000	\$170,000,000	18,000***	\$46,000,000
Listeners' sets (45,000,000 sets).....	\$3,000,000,000			\$210,000,000****
Commercial radio stations.....	\$32,600,000	\$19,400,000	10,000	\$4,000,000

*Radio set manufacturers now number 185.

**Employees at peak of seasonal employment.

***Staff—not counting part-time employees such as artists, etc., who would number at least 25,000 more.

****Annual operating expense of listeners' sets for tube replacements, electricity, batteries, servicing, etc.

U. S. Annual Radio Bill

Sale of time by broadcasters, 1939.....	\$170,000,000
Talent costs.....	35,000,000
Electricity, batteries, etc., to operate 38,400,000 receivers.....	165,000,000
9,000,000 radios sold in 1939 at retail.....	289,000,000
36,000,000 replacement tubes @ \$1.25.....	45,000,000
Radio parts, supplies, etc.....	50,000,000
Servicing radio sets.....	60,000,000
U.S. Public paid for radio in 1939.....	\$814,000,000

Radio Sets in Use

	Jan. 1, 1939	Jan. 1, 1940
U.S. homes with radios.....	27,500,000	28,700,000
"Secondary" sets in above homes....	7,500,000	9,200,000
Battery Portables.....	200,000	900,000
Auto-radios.....	5,800,000	6,500,000
Total sets in use, U.S.....	40,800,000	45,200,000
Total homes in U.S.....	32,250,000	33,000,000
Total homes with autos.....	19,000,000	20,500,000
Total residence telephones.....	13,250,000	13,500,000
Total homes with electricity.....	24,000,000	24,450,000

Radio Receivers—Sales and Volume in 1939

	Number	% of Total	Average Value (Retail)	Total Retail Value	% of Total
Radio Consoles.....	1,900,000	21.1	\$61.00	\$115,900,000	40.2
Radio Compacts.....	4,550,000	50.5	16.00	72,800,000	25.3
Table Combinations.....	250,000	2.8	30.00	7,500,000	2.6
Console Combinations.....	200,000	2.2	100.00	20,000,000	7.0
Total Combinations.....	450,000	5.0	61.00	27,500,000	9.6
Portables.....	900,000	10.0	24.00	21,600,000	7.5
Auto Radio.....	1,200,000	13.3	40.00	48,000,000	16.7
Total Radios.....	9,000,000	289,000,000

Total Tubes.....91,000,000

Total Records.....50,000,000

Homes with Radio March 1, 1940—by States

Ala.....	403,000	Ind.....	876,000	Neb.....	307,000	R. I.....	165,500
Ariz.....	84,500	Iowa.....	624,000	Nev.....	31,200	S. C.....	220,100
Ark.....	276,000	Kan.....	396,000	N. H.....	132,000	S. D.....	141,400
Cal.....	1,850,000	Ky.....	536,000	N. J.....	1,111,000	Tenn.....	489,000
Col.....	254,000	La.....	322,000	N. M.....	66,500	Texas.....	1,121,000
Conn.....	437,000	Me.....	220,000	N. Y.....	3,360,000	Utah.....	118,000
Del.....	61,300	Md.....	383,000	N. C.....	440,000	Vt.....	94,200
D. C.....	168,000	Mass.....	1,110,000	N. D.....	127,000	Va.....	426,000
Fla.....	322,000	Mich.....	1,215,000	Ohio.....	1,770,000	Wash.....	472,000
Ga.....	400,000	Minn.....	600,300	Okla.....	483,000	W. Va.....	371,000
Idaho.....	105,000	Miss.....	224,000	Ore.....	303,000	Wisc.....	664,000
Ill.....	1,990,000	Mo.....	885,000	Pa.....	2,372,000	Wyo.....	53,000
		Mont.....	120,000			Total.....	28,700,000



STAR PERFORMERS

PHONOGRAPH COMBINATION HEADLINERS FOR 1940!

Don't overlook these sensational G-E Combinations. They're tops in value—tops in *sales performance!*

Investigate! Write or phone your G-E Radio Distributor—*today.*



G-E's Latest Style Sensation

Model HJ-908—Equipped with Automatic Record Changer. Plays 10- and 12-inch records. Crystal Pick-up and Tone Arm—Super Beam-a-scope—14" Dynapower Speaker—3-band foreign-domestic reception—9 Tubes including Cathode-Ray Tuning Indicator and two Rectifiers—Beautiful Figured Mahogany and Sapeli Veneer Cabinet.

Priced to Lead!



Model HJ-618—Plays 10- or 12-inch records with lid closed. Equipped with Built-in Beam-a-Scope—6½" Dynapower Speaker—6 Feather-touch Tuning Keys—Automatic Tone Arm—Self-Starting Electric Motor—6 Tubes plus Ballast, including one Rectifier—Tone Monitor Circuit—Automatic Volume Control—Handsomely Designed Cabinet of Sapeli and Rosewood Veneers.

Radio and Television Division
Bridgeport, Conn.



GENERAL ELECTRIC



**GROWTH IS
A SIGN
OF
SYLVANIA
SUCCESS**

Sylvania

**SET-TESTED RADIO TUBES
NOW SOLD IN 124 COUNTRIES**

Plants at:

Emporium, St. Marys, Pa., and Salem, Mass.

LAST YEAR, two new wings were added to the Sylvania radio tube plant at Emporium. This and other past additions represent an increase of floor space for radio tube manufacturing from a small building of approximately 5,000 sq. ft. in 1925 to a total of almost 4½ acres of floor space (196,000 sq. ft.) in efficient modern buildings in 1939.

This rapid growth, made possible by world-wide acceptance of Sylvania radio tubes is due, we feel, to a recognition of the high quality and dependable performance of our product.

HYGRADE SYLVANIA CORP., 500 FIFTH AVENUE, NEW YORK CITY

HOW BROADCAST STATIONS WILL BE SHIFTED

Chart Showing Old and New Channels Under Reallocation Planned by Federal Communications Commission for Fall of 1940

Present	New	Present	New	Present	New	Present	New
550	550	830	850	1090	1120	1350	1380
560	560	840	*	1100	1130	1360	1390
570	570	850	870	1110	1140	1370	1400
580	580	860	880	1120	1150	1380	1410
590	590	870	890	1130	1160	1390	1420
600	600	880	910		1070	1400	1430
610	610	890	920	1140	1170	1410	1440
620	620	900	930	1150	1180	1420	1450
630	630	910	*		1170	1430	1460
640	640	920	950	1160	1190	1440	1470
650	650	930	960	1170	1200	1450	1480
660	660	940	970		1170	1460	1500
670	670	950	980	1180	1200	1470	1510
680	680	960	*	1190	1210	1480	1520
690	*	970	1000	1200	1230	1490	1530
700	700	980	1020	1210	1240	1500	1490
710	710	990	1030	1220	1250	1510	*
720	720	1000	1040		1230	1520	*
730	*		690	1240	1270	1530	1590
740	750		740	1250	1280	1540	*
750	760	1010	990	1260	1290	1550	1600
760	770		1050	1270	1300	1560	*
	780	1020	1060	1280	1310	1570	*
770	1110	1030	*	1290	1320	1580	*
780	790	1040	1080	1300	1330	1590	*
790	810	1050	1070	1310	1340	1600	*
800	820	1060	1090	1320	1350		
810	830	1070	1100	1330	1360		
820	840	1080	1110	1340	1370		

Note: Under the Havana Treaty it will be necessary for the FCC to order changes in the assignments of most of the 800 broadcasting stations now in operation. The accompanying table shows the pattern under which the coming transfers are to be made, although the final assignments will be

determined only by Commission order. Certain high-power clear channels will not be affected. It is estimated that about 8,000,000 push-button radios will have to be reset when these station changes go into effect, thus giving servicemen a widescale opportunity for home-radio adjustment.

The Roster of Radio Organizations

A number of industry-wide organizations are vigorously promoting the interests of radio, in various branches of the field. Herewith are the names and the secretaries of these groups:

RADIO MANUFACTURERS' ASSOCIATION—Bond Geddes, 1317 F. St., N.W., Washington D.C.

NATIONAL ASSOCIATION OF BROADCASTERS—Edwin M. Spence, 1626 K. St., N.W., Washington, D.C.

NATIONAL RADIO PARTS DISTRIBUTORS ASSOCIATION—Arthur Moss, 5 W. 86th St., New York City.

RADIO SERVICEMEN OF AMERICA—Joe Marty, 304 S. Dearborn St., Chicago, Ill.

THE REPRESENTATIVES—David Sonkin, 220 E. 23rd St., New York City.

SALES MANAGERS' CLUB—Eastern Group, W.W. Jablon, 424 W. 33rd St., New York City. Western Group, Kenneth C. Prince, 77 W. Washington St., Chicago, Ill.

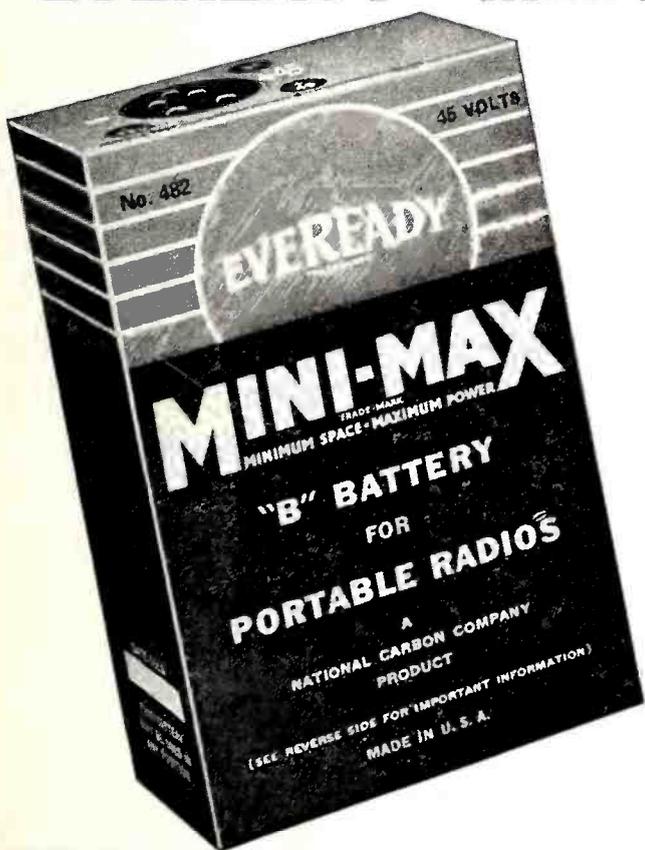
*Not assigned in U.S.

RADIO MFRS. ASS'N. 16th BOARD OF DIRECTORS

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and that means plenty of orders for
"EVEREADY" "MINI-MAX" "B" BATTERIES!



When political speeches start filling the air, portable radio set owners will start filing into your store. For the nominating of presidential candidates will be **BIG NEWS** in the biggest portable season ever.

That means *good* news for you... particularly if you're all set to sell the sensational, lightweight "Eveready" "Mini-Max" "B" battery—the battery that has made portable sets really *portable*.

Delivering twice the service life of any other "B" battery of equal size, the "Eveready" "Mini-Max" battery combines *minimum* weight and size with *maximum* power. As a result of this amazing compactness and super-performance, approximately 30 leading manufacturers have designed sets around the "Mini-Max" battery.

Check over your stock of "Eveready" "Mini-Max" "B" batteries now, and *be sure* to order enough to take care of the busy buying season just ahead. And don't forget—there's a good demand starting *right now* for battery replacements in sets that were gifts last Christmas. Get your order in today!

Leading radio manufacturers making portable sets for the "Eveready" "Mini-Max" "B" battery:

- | | | |
|------------------|--------------|--------------------|
| ARVIN | GILFILLAN | SPARTON |
| CLIMAX | HOWARD | STEWART WARNER |
| COLONIAL | KADETTE | STROMBERG CARLSON |
| CROSLEY | MAJESTIC | TELEX |
| DETROLA | MISSION BELL | TRAV-LER |
| DEWALD | MOTOROLA | TROY |
| EMERSON | PACKARD BELL | WARWICK |
| FADA | PILOT | WESTINGHOUSE |
| FARNSWORTH | RCA | WILCOX-GAY |
| GENERAL ELECTRIC | SENTINEL | <i>And Others!</i> |
| | SONORA | |



Long-lasting, sensationally small, the "Eveready" "Mini-Max" "B" battery was the big portable radio news of 1939. This year, it promises to be the pace-setter of the replacement market! It has set the standard for portable "B" battery size and shape.

NATIONAL CARBON COMPANY, INC.

General Offices: New York, N. Y.

Branches: Chicago and San Francisco

Unit of Union Carbide  and Carbon Corporation

The words "Eveready" and "Mini-Max" are registered trade-marks identifying products of National Carbon Company, Inc.

Get Phonograph Sales and Service Profits with These Low-Cost Units

INSTALLED in your portables, table models, combinations . . . or used in modernizing your customers sets . . . General Industries phonograph motors, motor-and-pickup assemblies and automatic record changers give you easy installation and your customers high-fidelity, trouble-free service. And they are priced for fast, profitable sales. Best basic designs, originated in our own engineering department. Satisfaction proved by millions sold. Order from your Jobber.

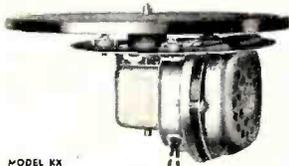


MODEL CX

Model CX — Direct drive, self-starting induction type motor. Fan-cooled. Fully enclosed, with silent helical-cut gears running in oil bath in sealed housing. Double-insulated drive sleeve. Delivered ready to install. Choice of 8", 9", 10" or 12" turntable.

Model KX — Similar to CX, but lighter, smaller and lower in price. Comes complete with mounting plate and turntable, ready to install.

Model RX — Rim drive unit with self-starting induction-type motor, rubber insulated. Quiet in operation. Driving pulley, idler and turntable positively aligned in one plane, assuring efficient, trouble-free performance. 8", 9", or 10" turntable included. Shipped ready to install.



MODEL KX



MODEL RX

Get Our New Catalog!

For latest catalog of all types of General Industries electric and spring-wound phonograph motors, motor-and-pickup assemblies and automatic record changers, address

 **The GENERAL INDUSTRIES CO.**
4038 Taylor St. Elyria, Ohio

PIONEERING IS SELDOM EASY
... but it has it's reward

It's good to know, for instance, that a hundred distributors and thousands of smart dealers made a handsome profit from Wilcox-Gay merchandising in 1939 and '40.

It's good to know, too, that the radio industry has a new larger sales unit, a broader market offering better entertainment values to the public since B.C. (Before Recordio)

Now—Wilcox-Gay with increased production backed by national advertising insures your chances for better profits from radio sales this spring.

Always Watch...
WILCOX-GAY CORPORATION
CHARLOTTE, MICHIGAN
Manufacturers of
RECORDIO

A RADIO PANEL FOR

Every **CAR**

With Stewart complete servicing equipment and remote control apparatus a potential market of 25,000,000 motorists is yours . . . increase your sales and profit . . . modernize old radios . . . give your prospects Custom Built Remote Control service at no extra cost . . . and watch your sales grow.

Custom built to match the instrument panel and fit all popular cars from 1934 to date. Engineered for maximum radio performance. One single control unit for all cars, easily and inexpensively interchanged from one car to another.

Send for our new 1940 Catalog today. See your jobber. Begin now to cash in on the constantly increasing number of auto radio installations.

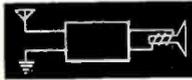
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1940
CATALOG

F. W. STEWART MFG. CO.
342 W. HURON ST. CHICAGO, ILLINOIS

RADIO TRADE DIRECTORY

Up-to-date, verified listings of manufacturers, products and trade names—the complete buying guide with products and advertisements indexed on pages 49 and 127

RECEIVING SETS



Amateur	AM
Auto	A
Aviation	AV
Battery portable	BP
Commercial	COM
Direction finders	DF
Facsimile	FAC
Farm	F
Frequency Modulation	FM
Home	H
Kits (as suffix)	K
Marine	M
Phonograph-radio	PR
Police	P
Police auto	PA
Radio Recorder Comb.	RRC
Television	T

ABC RADIO LABORATORIES, 3334 N. New Jersey St., Indianapolis, Ind., "ABC"—Short wave auto converters

ADMIRAL—Continental Radio & Television Corp.

AIR KING PRODUCTS CO., INC., 1523 63rd St., Brooklyn, N. Y., "Air King"—BP, F, FM, H, PR, T

AIRLINE—Montgomery Ward & Co.

AIRPLANE & MARINE DIRECTION FINDER CORP., Clearfield, Pa.—AV, COM, DF, M, P, PA

AIR SCOUT—Allied Engineering Institute

ALLIED ENGINEERING INSTITUTE, 85 Warren St., New York, N. Y., "Air Scout"—AM, M, P

ALLIED RADIO CORP., 833 W. Jackson Blvd., Chicago, Ill., "Knight"—A, BP, F, PR, TK

AMERICAN COMMUNICATIONS CORP., 123 Liberty St., New York, N. Y.—COM, M, PR, P

AMERICAN TELEVISION CORP., 130 W. 56th St., New York, N. Y.—T

ANDREA RADIO CORP., 4820 48th Ave., Woodside, L. I., N. Y.—BP, H, PR, T, TK

ANSLEY RADIO CORP., 4377 Bronx Blvd., New York, N. Y., "Dynaphone"—PR

ARVIN—Noblitt-Sparks Industries, Inc.

AUTOCRAT RADIO CO., 3855 N. Hamilton Ave., Chicago, Ill., "Autocrat"—A, BP, F, H, PR

AUTOMATIC RADIO MFG. CO., INC., 122 Brookline Ave., Boston, Mass.—A, BP, H, PR

AUTOPHONE—Cavalier Motors Associates, Inc.

BANK'S MFG. CO., 5019 N. Winthrop Ave., Chicago, Ill.—BP, M, PR, P, PA

BASSETT RADIO MFG. CORP., Niles, Mich.—AV, COM, P, PA

BEE ENGINEERING CO., 7665 Grand River Ave., Detroit, Mich.—P, PA

BELL RADIO & TELEVISION, 125 E. 46th St., New York, N. Y., "Bell"—A, F, H, T, PR

BELMONT RADIO CORP., 1257 Fullerton Ave., Chicago, Ill., "Belmont"—A, BP, F, H, PR, T

BENDIX RADIO CORP., 920 E. Fort Ave., Baltimore, Md.—AV, M, P, PA

BOND PRODUCTS CO., 13139 Hamilton Ave., Detroit Mich.—A, BP, H, PR

BROWNING LABORATORIES, INC., 750 Main St., Winchester, Mass., "Browning"—AMK, FMK, HK

BRUNSWICK RADIO DIV., Mersman Bros. Corp., 206 Lexington Ave., New York, N. Y.—H (furniture)

CALVERT MOTORS ASSOCIATES, LTD., 1028 Linden Ave., Baltimore, Md.—A, H

CANTON TRADING CO., 135 Liberty St., New York, N. Y., "Kantola"—BP, H, PR

CAVALIER MOTORS ASSOCIATES, LTD., 1028 Linden Ave., Baltimore, Md., "Autophone," "Mobilette"—A, BP

CHAMPION RADIO LABORATORIES, 14553 Madison Ave., Lakewood, Ohio, "Champion," "Victory," "Monarch," "LaSalle"—A, F, H, PR

CINEMA ENGINEERING CO., 1508 S. Verdugo Ave., Burbank, Calif., "Cinema"—COM

COLONIAL RADIO CORP., 254 Rano St., Buffalo, N. Y.—A, BP, F, H, PR

CONTINENTAL RADIO & TELEVISION CORP., 3800 W. Cortland St., Chicago, Ill., "Admiral"—BP, F, H, PR

THE CROSLY CORP., 1329 Arlington St., Cincinnati, Ohio, "Crosley"—A, BP, F, FAC, H, PR

DELCO RADIO DIVISION, General Motors Service, Kokomo, Ind.—A, F, H

DETROLA CORP., 1501 Beard Ave., Detroit, Mich., "Detrola"—A, F, H, PR, P

DE WILD RADIO MFG. CORP., 436 Lafayette St., New York, N. Y.—A, BP, F, H, PR

DOOLITTLE & FALKNER, INC., 7421 S. Loomis Blvd., Chicago, Ill.—AV, P, PA

ALLEN B. DUMONT, 2 Main Ave., Passaic, N. J., "DuMont"—T

DYNAPHONE—Ansley Radio Corp.

ELECTRICAL RESEARCH LAB., INC., 2020 Ridge Ave., Evanston, Ill., "Erla," "Sentinel"—BP, F, H, PR

ELECTROTONE—Harris Mfg. Co.

EMERSON RADIO & PHONOGRAPH CORP., 111 Eighth Ave., New York, N. Y.—BP, F, H, PR, T

ERLA—Electrical Research Lab., Inc.

ESPEY MFG. CO., INC., 305 E. 63rd St., New York, N. Y.—BP, H, M

FADA RADIO & ELECTRIC CO., 30-20 Thomson Ave., Long Island City, N. Y., "Fada"—A, BP, F, FM, H, PR, T

FARNSWORTH TELEVISION & RADIO CORP., 3700 Pontiac St. Extended, Fort Wayne, Ind.—A, BP, COM, F, FM, H, PR, T

FINCH TELECOMMUNICATIONS, INC., 1819 Broadway, New York, N. Y.—FAC

GALVIN MFG. CORP., 4545 Augusta Blvd., Chicago, Ill., "Motorola"—AM, A, AV, BP, COM, F, H, M, PR, P, PA, T

GAROD RADIO CORP., 70 Washington St., Brooklyn, N. Y., "Garod"—F, H, PR, TK

GE—General Electric Co.

GENERAL ELECTRIC CO., 1285 Boston Ave., Bridgeport, Conn., "General Electric"—BP, COM, F, FM, H, PR, T

GENERAL TELEVISION & RADIO CORP., 511 S. Sangamon St., Chicago, Ill.—BP, F, H, PR

GILFILLAN BROS., INC., 1815 Venice Blvd., Los Angeles, Calif., "Giffilan"—BP, F, H, PR, T

GREBE MFG. CO., INC., 70 W. Washington St., Brooklyn, N. Y., "Grebe"—BP, F, H, PR

HALLICRAFTERS, INC., 2611 S. Indiana St., Chicago, Ill., "Skyrider"—AM

HAMMARLUND MFG. CO., INC., 424 W. 33rd St., New York, N. Y., "Super-Pro"—AM, AV, COM, M, P

HARRIS MFG. CO., 2422 W. 7th St., Los Angeles, Calif., "Electrotone"—PR

HARVEY-WELLS COMMUNICATIONS, INC., Southbridge, Mass.—AV, BP, COM, M, P

HEINTZ & KAUFMAN, LTD., South San Francisco, Calif.—COM

HK—Heintz & Kaufman, Ltd.

HOWARD RADIO CO., 1731 Belmont Ave., Chicago, Ill., "Howard"—AM, A, BP, F, H, PR, P

JEFFERSON-TRAVIS RADIO MFG. CORP., 193 Milburn Ave., Baldwin, L. I., N. Y.—M, P, PA

KAAR ENGINEERING CO., 619 Emerson St., Palo Alto, Calif., "Kaar"—AM, M, P, PA

KADETTE RADIO CORP., 310 First National Bldg., Ann Arbor, Mich.—H

KANTOLA—Canton Trading Co.

KARADIO CORP., 2233 University Ave., St. Paul, Minn., "Karadio"—A, AV, BP, COM, M, P, PA

KARNS-WHITE CORP., 1775 Broadway, New York, N. Y.—BP, F, M

KINGSTON RADIO CO., INC., Kokomo, Ind., "Kingston"—H

KNIGHT—Allied Radio Corp.

LAFAYETTE—Radio Wire Television, Inc.

LASALLE—Champion Radio Laboratories

LAUREHK RADIO MFG. CO., 3918 Monroe Ave., Wayne, Mich., "Laurehk," "Musique"—BP, F, H

LEAR AVIATION, INC., Dayton Municipal Airport, Dayton, Ohio—AV

L'TATRO MFG. CO., 417 West Water St., Decorah, Iowa—BP, F, H

MAJESTIC RADIO & TELEVISION CO., 2600 W. 50th St., Chicago, Ill., "Majestic"—BP, F, H, PR, T

MANSLEY RADIO CORP., 182 Milburn Ave., Baldwin, N. Y.—AV, M, P, PA

MARCONIPHONE, INC., 679 Madison Ave., New York, N. Y., "Marconiphone"—H, PR



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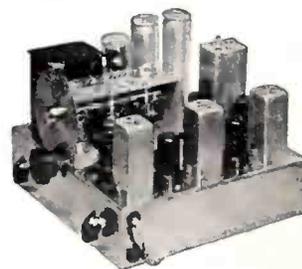
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 MIDWEST RADIO CORP., 909 Broadway, Cincinnati, Ohio, "Midwest"—BP, F, H, PR
 JAMES MILLEN MFG. CO., INC., 150 Exchange St., Malden, Mass.—AM
 MOBILETTE—Cavalier Motors Associates, Inc.
 MONARCH—Champion Radio Laboratories
 MONTGOMERY WARD & CO., 619 W. Chicago Ave., Chicago, Ill., "Airline"—AM, A, BP, F, H, M, PR
 MOTOROLA—Galvin Mfg. Corp.
 NATIONAL COMPANY, 61 Sherman St., Malden, Mass., "National"—AM, COM
 NOBLITT-SPARKS INDUSTRIES, INC., Columbus, Ind., "Arvin"—A, BP, H, PR
 PACENT ENGINEERING CORP., 79 Madison Ave., New York, N. Y., "Pacent"—COM, FM, H, PR, T
 PACKARD BELL CO., 1320 S. Grand Ave., Los Angeles, Calif., "Bell"—BP, H, PR, T
 PHILCO RADIO & TELEVISION CORP., Tioga & C Sts., Philadelphia, Pa.—AM, BP, F, H, P, PA, T
 PHILMORE MFG. CO., 113 University Place, New York, N. Y., "Philmore"—BP, H, K
 PIERCE AIRO—De Wald Radio Mfg. Corp.
 PIERSON-DELANE, INC., 2345 W. Washington Blvd., Los Angeles, Calif.—AM, COM, FM, P, PA
 PILOT RADIO CORP., 37-06 36th St., Long Island City, N. Y., "Pilot"—BP, F, H, PR, AM, COM, T
 PORTOMATIC CORP., 985 Madison Ave., New York, N. Y., "Portomatic"—PR
 PRESTO RECORDING CORP., 242 W. 55th St., New York, N. Y., "Presto"—COM
 RADIOBAR CO. OF AMERICA, 296 Broadway, New York, N. Y.—PR
 RADIO ENGINEERING LABS, INC., 35-54, 36th St., Long Island City, N. Y.—FM, P, PA
 RADIO MFG. ENGINEERS, INC., 111 Harrison St., Peoria, Ill. "RME"—AM
 RADIOMARINE CORP. OF AMERICA, 75 Varick St., New York, N. Y.—COM, M
 RADIO NURSE—Zenith Radio Corp.
 RADIO PRODUCTS CORP., 3800 W. Cortland St., Chicago, Ill.—A, BP, H, PR
 RADIO RECEPTOR CO., INC., 251 W. 19th St., New York, N. Y.—AV, COM, FM
 RADIO TRANSCEIVER LABS., 86-27 115th St., Richmond Hill, N. Y., "Radio Transceiver Labs"—AM, BP
 RADIO WIRE TELEVISION, INC., 100 6th Ave., New York, N. Y., "Lafayette"—AM, A, BP, F, H, PR
 RADOLEK CO., 601 W. Randolph St., Chicago, Ill., "Radolek"—AM, A, BP, F, H, PR
 RCA MFG. CO., Front & Cooper Sts., Camden, N. J., "RCA," "RCA Victor"—AM, A, AV, BP, COM, F, H, PR, P, PA, T, FAC
 RCA VICTOR—RCA Mfg. Co.
 REMLER CO., LTD., 2101 Bryant St., San Francisco, Calif., "Remler"—BP, F, H, PR
 RME—Radio Mfg. Engineers, Inc.
 E. M. SARGENT CO., 212 9th St., Oakland, Calif., "Sargent"—AM, COM, DF, M
 E. H. SCOTT LABS, INC., 4450 Ravenswood Ave., Chicago, Ill., "Scott"—F, H, PR
 SENTINEL—Electrical Research Lab., Inc.
 SETCHELL-CARLSON, INC., 2233 University Ave., St. Paul, Minn., "Setchell-Carlson"—BP, F, H, M, PA
 SILCOX RADIO & TELEVISION CORP., 60 Wall Tower, New York, N. Y.—A, BP, F, H, PR, T
 SKY CHIEF RADIO CORP., 345 E. 37th St., New York, N. Y.—H, PR
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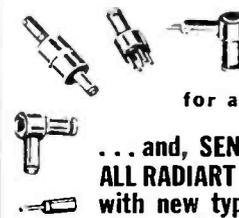
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 SPARKS-WITHINGTON CO., E. Ganson Ave., Jackson, Mich., "Sparton"—BP, F, H, PR, T
 SPARTON—Sparks-Withington Co.
 STEWART-WARNER CORP., 1826 Diversey Pkwy., Chicago, Ill., "Stewart-Warner"—A, BP, F, FM, H, PR, T
 STROMBERG-CARLSON TELEPHONE MFG. CO., 100 Carlson Rd., Rochester, N. Y., "Stromberg-Carlson"—F, FM, H, PR, T
 SUPER-PRO—Hammarlund Mfg. Co.
 TEFFT RADIO CO., Plymouth, Mich.—AM
 TELEVISO CO., 341 N. Pulaski Rd., Chicago, Ill.—M
 TRAV-LER RADIO & TELEVISION CORP., 1036 W. Van Buren St., Chicago, Ill., "Trav-Ler"—A, BP, F, H, PR
 TREBOR RADIO CO., Pasadena, Calif., "Trebtor"—A, H
 TROY RADIO & TELEVISION CO., 1144 S. Olive St., Los Angeles, Calif.—A, BP, F, H, PR, RRC
 TRUETONE—Western Auto Supply Co.
 UNITED CINEPHONE CORP., 43-37 33rd St., Long Island City, N. Y.—AV
 UNITED STATES TELEVISION MFG. CORP., 220 E. 51st St., New York, N. Y.—T
 UNIVERSAL BATTERY CO., 3410 S. LaSalle St., Chicago, Ill., "Universal"—A, F, H
 VICTORY—Champion Radio Laboratories
 WARWICK MFG. CO., 1700 W. Washington Blvd., Chicago, Ill., "Warwick"—A, BP, F, H
 WATTERSON RADIO MFG. CO., Dallas, Texas—F, H
 WELLS-GARDNER & CO., 2701 N. Kildare Ave., Chicago, Ill.—AM, A, BP, F, PR
 WESTERN AUTO SUPPLY CO., 2107 Grand Ave., Kansas City, Mo., "Truetime"—A, BP, F, H, PR
 WESTERN ELEC. CO., 300 Central Ave., Kearny, N. J.—AV, M, P, PA
 WESTINGHOUSE ELECTRIC SUPPLY CO., 150 Varick St., N. Y., "Westinghouse"—BP, F, H, PR, T
 WILCOX ELECTRIC CO., INC., 4014 State Line, Kansas City, Kans.—AV, COM, M, P
 WILCOX-GAY CORP., Charlotte, Mich., "Wilcox-Gay" BP, H, PR, P, RRC
 ZENITH RADIO CORP., 6001 Dickens Ave., Chicago, Ill., "Radio Nurse"—AM, A, BP, COM, F, FM, H, M, PR, P, PA, T
 ZEPHYR RADIO CO., 13139 Hamilton Ave. Detroit, Mich., "Zephyr"—A, F, H, PR

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ANTENNAS & ACCESSORIES



- All-wave (home) AW
- Auto A
- Frequency modulation FM
- Ground clamps G
- Insulators I
- Kits K
- Lightning arresters L
- Loop antennas LA
- Master systems MS
- Noise-reducing broadcast N
- Outlets O
- Television TL
- Towers & supports (home) T

ABC RADIO LABORATORIES, 3334 N. New Jersey St., Indianapolis, Ind., "ABC"—A
 AEROVOX CORP., 740 Bellville Ave., New Bedford, Mass.—antenna eliminator
 AIRLINE—Montgomery Ward & Co.
 AIRPLANE & MARINE DIRECTION FINDER CORP., Clearfield, Pa.—LA (Direction finding)
 ALDEN PRODUCTS CO., 715 Center St., Brockton, Mass.—K
 ALESI & FENER, 132 Nassau St., New York, N. Y.—AW, K, N, TL
 ALLIED RADIO CORP., 833 W. Jackson Blvd., Chicago, Ill., "Knight"—AW, A, K, LA, MS
 AMERICAN COMMUNICATIONS CORP., 123 Liberty St., New York, N. Y.—AW, G, I, K, MS, N, O, TL
 AMERICAN LAVA CORP., Cherokee Blvd., & Manufacturers Rd., Chattanooga, Tenn.—K
 AMERICAN RADIO HARDWARE CO., 476 Broadway, New York, N. Y., "Arhco"—A
 AMY, ACEVES & KING, INC., 11 West 42 St., New York, N. Y.—MS

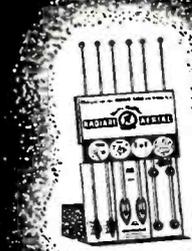
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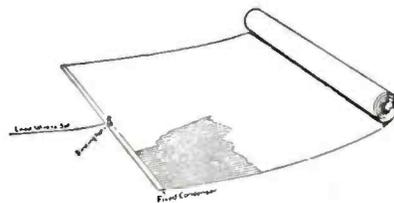
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- ANDREA RADIO CORP., 4820 48th Ave., Woodside, L. I., N. Y.—AW, N, TL
- ARHCO—American Radio Hardware Co.
- ARVIN—Noblitt-Sparks Industries, Inc.
- CHARLES AVNET CO., 156 Chambers St., New York, N. Y.—AW, A
- BASSETT RADIO MFG. CORP., Niles, Mich.—TL
- BEE ENGINEERING CO., 7665 Grand River Ave., Detroit, Mich.—I, K
- BELOEN MFG. CO., 4647 W. Van Buren St., Chicago, Ill.—AW, G, I, K, L, MS, N, TL
- BIRCO—Birnback Radio Co.
- BIRNBACH RADIO CO., INC., 145 Hudson St., New York, N. Y., "Birco"—AW, G, I, K, L, MS, N, O, TL
- BONO PRODUCTS CO., 13139 Hamilton Ave., Detroit, Mich.—G, L
- L. S. BRACH MFG. CORP., 55 Dickerson St., Newark, N. J.—AW, A, G, I, K, L, MS, N, TL
- BUO RADIO, INC., 5205 Cedar Ave., Cleveland, Ohio, "Bud"—G, I, L, O
- BURTON ROGERS CO., 837 Boylston St., Boston, Mass., "Burton Rogers"—A
- CLAMPIPE—Mueller Electric Co.
- CONSOLIDATED WIRE & ASSOC. CORPS., Peoria & Harrison Sts., Chicago, Ill.—A, AW, G, I, K, L, MS
- CORNING GLASS WORKS, Walnut St., Corning, N. Y., "Pyrex"—I
- CORNISH WIRE CO., INC., 15 Park Row, New York, N. Y., "Noise-Master," "Corwico"—AW, G, I, K, L, MS
- CORWICO—Cornish Wire Co., Inc.
- DAVEN CO., 158 Summit St., Newark, N. J.—TL
- D-X RADIO PRODUCTS CO., 1575-1579 Milwaukee Ave., Chicago, Ill.—LA
- EAGLE ELECTRIC MFG. CO., INC., 59 Hall St., Brooklyn, N. Y.—AW, G, I, K, L
- EFFARSEE—Fishwick Radio Co.
- EX-STAT—Tilton Electric Corp.
- FARNSWORTH TELEVISION & RADIO CORP., 3700 Pontiac St. Extended, Fort Wayne, Ind.—AW, A, N, TL
- FEDERAL SALES CO., 26 S. Jefferson St., Chicago, Ill.—G
- FISHWICK RADIO CO., 139 W. 4th St., Cincinnati, Ohio, "Effarsee"—AW, A
- F & H RADIO LABORATORIES, Fargo, N. Dakota—N, antenna eliminator.
- M. M. FLERON & SON, INC., 113 N. Broad St., Trenton, N. J.—"Fleron"—AW, A, G, I, K, L, N, O
- FOWLER MFG. CO., 9 Rutger St., St. Louis, Mo.—AW, K
- FULTON RADIO CORP., 100 6th Ave., New York, N. Y.—A, TL
- GALVIN MFG. CORP., 4545 Augusta Blvd., Chicago, Ill., "Motorola"—AW, A
- GENERAL CEMENT MFG. CO., 1041 Kilburn Ave., Rockford, Ill.—I
- GENERAL CERAMICS CO., 30 Rockefeller Plaza, New York, N. Y.—I
- GE—General Electric Co.
- GENERAL ELECTRIC CO., 1285 Boston Ave., Bridgeport, Conn., "GE", "V-Doublet"—AW, K, N
- GENERAL TELEVISION & RADIO CORP., 512 S. Sangamon St., Chicago, Ill., "Syncretenna"—AW
- GENERAL WINDING CO., 254 W. 31st St., New York, N. Y., "Gen-Win"—AW, K, MS, N
- GEN-WIN—General Winding Co.
- O. H. HARRELL, 1527 E. 74 Place, Chicago, Ill.—N
- HOWARD RADIO CO., 1731 Belmont Ave., Chicago, Ill.—LA (Directional loop)
- ICA—Insuline Corp. of America
- ILLINOIS SEATING CORP., 2138 N. Racine Ave., Chicago, Ill.—AW, G, MS, N, TL, T
- INSULINE CORP. OF AMERICA, 30-30 Northern Blvd., Long Island City, N. Y., "ICA"—AW, A, G, I, K, L, MS, O, TL
- ISOLANTITE, INC., 233 Broadway, New York, N. Y., "Isolantite"—I, Ultra high frequency antennas.
- J. F. O. MFG. CO., 4111 Ft. Hamilton Pkwy., Brooklyn, N. Y., "JFD"—AW, A, K, TL
- KNIGHT—Allied Radio Corp.
- KRAEUTER & CO., INC., 563 18th Ave., Newark, N. J.—A
- LAFAYETTE—Radio Wire Television, Inc.
- LEAR AVIATION, INC., Dayton Municipal Airport, Dayton, Ohio—K
- LITTLEFUSE, INC., 4757 Ravenswood Ave., Chicago, Ill.—Accessories
- P. R. MALLORY & CO., 3029 E. Washington St., Indianapolis, Ind., "Yaxley"—O
- JAMES MILLEN MFG. CO., INC., 150 Exchange St., Malden, Mass.—I
- MIMS RADIO CO., P. O. Box 504, Texarkana, Ark.—TL

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Cont.

MONTGOMERY WARD & CO., 619 W. Chicago Ave., Chicago, Ill., "Airline"—AW, A, G, I, K, L, N, O, TL, T
 MORRIS REGISTER CO., Council Bluffs, Iowa—A, G
 MOTOROLA BOOSTER—Galvin Mfg. Corp.
 MUELLER ELECTRIC CO., 1573 E. 31 St., Cleveland, Ohio, "Clampipe"—ACC, G
 NOBLITT-SPARKS INDUSTRIES, INC., Columbus, Ind., "Arvin"—AW, A, K
 NOISE-MASTER—Cornish Wire Co., Inc.
 NORWEST RADIO LABS., Blaine Ave. & Hill St., Shelby, Mont., "Streamline", "Vertenna"—AW, A
 PACENT ENGINEERING CORP., 79 Madison Ave., New York, N. Y., "Pacent"—AW, N, TL
 PHILCO RADIO & TELEVISION CORP., Tioga & C St., Philadelphia, Pa.—AW, A, K, N
 PHILSON MFG. CO., INC., 156 Chambers St., New York, N. Y.—A, TL
 PREMEX PRODUCTS DIV., Chisholm-Ryder Co., Niagara Falls, N. Y., "Premax"—AW, A, K, T, Ground rods
 PYREX—Corning Glass Works
 QUAM-NICHOLS CO., 33rd Pl. & Cottage Grove Ave., Chicago, Ill.—A, G, K, L
 THE RADIART CORP., 13229 Shaw Ave., E. Cleveland, Ohio—AW, A, I, L, N, TL, T
 RADIO WIRE TELEVISION, INC., 100 Sixth Ave., New York, N. Y., "Lafayette"—AW, A, K, MS
 RADOLEK CO., 601 W. Randolph St., Chicago, Ill., "Radolek"—AW, A, K
 RCA MFG. CO., Front & Cooper Sts., Camden, N. J., "RCA"—AW, A, K, MS, N, TL
 RIVARD MFG. CO., Toledo, Ohio—AW, A, G, I, K, L
 H. B. SHERMAN MFG. CO., 22 Barney St., Battle Creek, Mich.—G
 SNYDER, INC., 813-23 Noble St., Philadelphia, Pa.—A
 SPARKS-WITHINGTON CO., E. Ganson Ave., Jackson Mich., "Sparton"—AW
 SPARTON—Sparks-Withington Co.
 STAR MACHINE MFRS., INC., 1371 E. Bay Ave., Bronx, N. Y.—A
 STREAMLINE—Norwest Radio Labs.
 STROMBERG-CARLSON TELEPHONE MFG. CO., 100 Carlson Rd., Rochester, N. Y., "Stromberg-Carlson"—AW
 SUPERIOR TUBE CO., Norristown, Pa.—A
 TACO—Technical Appliance Corp.
 TECHNICAL APPLIANCE CORP., 17 E. 16th St., New York, N. Y., "Taco"—AW, FM, K, MS, N, TL

TELERADIO ENGINEERING CORP., 484 Broome St., New York, N. Y., "Teleradio"—LA
 TILTON ELECTRIC CORP., 15 E. 26th St., New York, N. Y., "Ex-Stat"—A
 VERTEENNA—Norwest Radio Labs
 THE WARD PRODUCTS CORP., 1523 E. 45 St., Cleveland, Ohio, "Ward"—AW, A, K
 WILCOX ELECTRIC CO., INC., 4014 State Line, Kansas City, Kans.—TL
 YAXLEY—P. R. Mallory & Co.

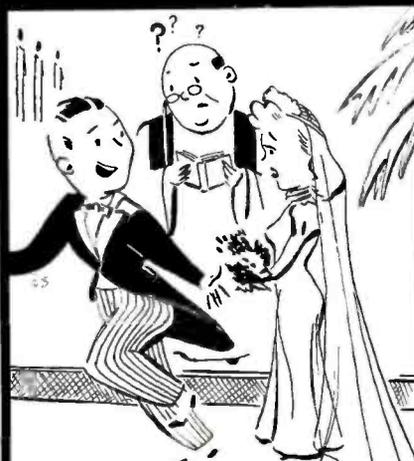
AUTOMATIC TUNING UNITS & PARTS



Face plates (See Escutcheons) . . . IT
 Inductance trimmer units . . . MS
 Mechanical automatic selectors . . . MS
 Push button knobs . . . K
 Push button motor operated units (complete) . . . PM
 Push-button trimmer units comp . . . PT
 Remote controls . . . R
 Station name cards . . . SC
 Switches . . . S
 Temperature compens. cond. . . TC
 Trimmer condenser units . . . CU
 Tuning motors . . . M

ALADDIN RADIO INDUSTRIES, INC., 468 W. Superior St., Chicago, Ill.—IT
 ALDEN PRODUCTS CO., 715 Center St., Brockton, Mass.—K
 ALLIANCE MFG. CO., Alliance, Ohio—M
 AMERICAN EMBLEM CO., INC., P. O. 116-J, Utica, N. Y.—MS, SC
 AMERICAN RADIO HARDWARE CO., 476 Broadway, New York, N. Y., "Arhco"—K
 AMERICAN STEEL PACKAGE CO., Squire Ave., Defiance, Ohio, "Defiance"—MS

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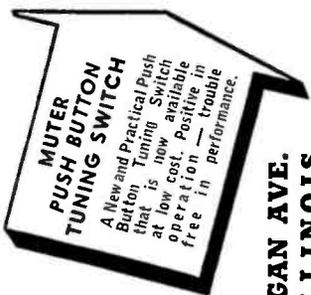
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- AUTOMATIC WINDING CO., INC., 900 Passaic Ave., East Newark, N. J.—IT, PT, CU
- BUD RADIO, INC., 5205 Cedar Ave., Cleveland, Ohio—S, CU
- CENTRALAB, 900 E. Keefe Ave., Milwaukee, Wis., "Centralab"—S, TC
- CONSOLIDATED WIRE & ASSOC. CORPS., Peoria & Harrison Sts., Chicago, Ill.—MS
- CROWE NAME PLATE & MFG. CO., 3701 Ravenswood Ave., Chicago, Ill., "Crowe"—MS, K, SC
- HARRY DAVIES MOLDING CO., 1428 N. Wells St., Chicago, Ill.—K
- DEFIANCE—American Steel Package Co.
- D-X RADIO PRODUCTS CO., 1575 Milwaukee Ave., Chicago, Ill.—IT, CU
- GEMLITE—Gemloid Corp.
- GEMLOID CORP., 79-10 Albion Ave., Elmhurst, L. I., "Gemloid", "Gemlite"—SC
- GENERAL CEMENT MFG. CO., 1041 Kilburn Ave., Rockford, Ill.—SC
- GENERAL INSTRUMENT CORP., 829 Newark Ave., Elizabeth, N. J.—MS
- GENERAL MFG. CO., 1255 S. Michigan Ave., Chicago, Ill.—IT
- GENERAL WINDING CO., 254 W. 31 St., New York, N. Y., "Gen-Win"—IT, PM, PT, CU, M
- GEN-WIN—General Winding Co.
- CARL GORR PRINTING CO., INC., 2615 N. Ashland Ave., Chicago, Ill.—SC
- GUARDIAN ELECTRIC MFG. CO., 1621 W. Walnut St., Chicago, Ill.—R, S
- E. I. GUTHMAN & CO., INC., 400 S. Peoria St., Chicago, Ill., "Guthman"—IT, PT, CU
- HAMMARLUND MFG. CO., INC., 424 W. 33 St., New York, N. Y.—CU
- HEGELER ZINC CO., P. O. Box 599, Danville, Ill.—IT
- ICA—Insuline Corp. of America
- INSULINE CORP. OF AMERICA, 30-30 Northern Blvd., Long Island City, N. Y., "ICA"—R, S, CU
- P. R. MALLORY & CO., 3029 E. Washington St., Indianapolis, Ind., "Yaxley", "Mallory"—K, S, CU
- MEISSNER MFG. CO., 7th & Belmont, Mt. Carmel, Ill., "Meissner"—IT, PT, R, S, CU
- JAMES MILLEN MFG. CO., INC., 150 Exchange St., Malden, Mass.—CU
- THE MUTER CO., 1255 South Michigan Ave., Chicago, Ill., "Muter"—MS, PT, S, TC
- OAK MFG. CO., 1260 Clybourn Ave., Chicago, Ill., "Oak"—MS, S
- F. W. SICKLES CO., P. O. Box 920, Springfield, Mass.—IT, PT, CU
- SPARKS-WITHINGTON CO., E. Ganson Ave., Jackson, Mich., "Sparton"—PT
- SPARTON—Sparks-Withington Co.
- SPEEDWAY MFG. CO., 1834 S. 52 St., Cicero, Ill.—M
- STACKPOLE CARBON CO., Tannery St., St. Marys, Pa., "Stackpole"—S
- F. W. STEWART MFG. CORP., 340 W. Huron St., Chicago, Ill., "Stewart"—MS, K, PM, R, SC, S
- TELERADIO ENGINEERING CORP., 484 Broome St., New York, N. Y., "Teleradio"—IT, PT, TC, CU
- UTAH RADIO PRODUCTS CO., 820 Orleans St., Chicago, Ill., "Utah"—M, S
- YAXLEY—P. R. Mallory & Co.

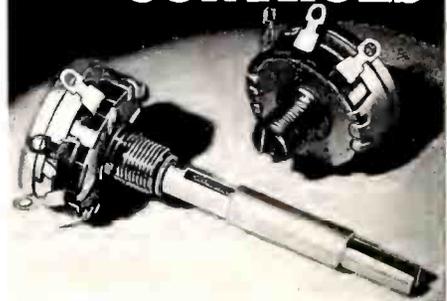
AUTO RADIO CONTROLS



- Cable replacement tools . . . T
- Control units (complete) . . . CU
- Control heads . . . CH
- Fittings . . . F
- Flexible shafts . . . FS

- ALDEN PRODUCTS CO., 715 Center St., Brockton, Mass., "Alden"—F
- AMERICAN RADIO HARDWARE CO., 476 Broadway, New York, N. Y., "Arhco"—T, F
- ARHCO—American Radio Hardware Co.
- ARVIN—Noblitt-Sparks Industries, Inc.
- BUD RADIO, INC., 5205 Cedar Ave., Cleveland, Ohio—FS
- CROWE NAME PLATE & MFG. CO., 3701 Ravenswood Ave., Chicago, Ill., "Crowe"—CU, CH, F, FS
- DELCO—United Motors Service
- DUAL REMOTE CONTROL CO., 31776 W. Warren St., Wayne, Mich., "Ducon"—CU, CH, F, FS
- DUCON—Dual Remote Control Co.

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 GEMLITE—Gemloid Corp.
 GEMLOID CORP., 79-10 Albion Ave., Elmhurst, L. I., "Gemloid," "Gemlite"—F
 HUNTER PRESSED STEEL CO., Lansdale, Pa.—CU, CH
 ICA—Insuline Corp. of America
 INSULINE CORP. OF AMERICA, 30-30 Northern Blvd., Long Island City, N. Y., "ICA"—FS
 J. F. D. MFG. CO., 4111 Ft. Hamilton Pkwy., Brooklyn, N. Y., "JFD"—T, FS
 MOTOROLA—Galvin Mfg. Corp.
 NOBLITT-SPARKS INDUSTRIES, INC., Columbus, Ind., "Arvin"—CU, FS
 PHILCO RADIO & TELEVISION CORP., Tioga & C Sts., Philadelphia, Pa.—CU, CH, FS
 STAR MACHINE MFRS., INC., 1371 E. Bay Ave., Bronx, N. Y.—T, CU, CH, F, FS
 F. W. STEWART MFG. CORP., 340 W. Huron St., Chicago, Ill., "Stewart"—T, CU, CH, F, FS
 UNITED MOTORS SERVICE, 3044 W. Grand Blvd., Detroit, Mich., "Delco"—CU

AMERICAN COMMUNICATIONS CORP., 123 Liberty St., New York, N. Y.—G, M, PU
 AMERICAN TELEVISION & RADIO CORP., 300 E. 4th St., St. Paul, Minn., "ATR"—BE, M, PU
 AMPLIFIER CO. OF AMERICA, 17 W. 20th St., New York, N. Y., "ACA"—PU
 VICTOR J. ANDREW, 6429 S. Laverne Ave., Chicago, Ill.—PU
 ARCO TUBE CO., 227 Central Ave., Newark, N. J.—B, V
 ARLAB—Arlavox Mfg. Co.
 ARLAVOX MFG. CO., 430 S. Green St., Chicago, Ill.—G
 ATR—American Television & Radio Corp.
 AUTO RADIO FILTERPAC—The Benwood Linze Co.
 AUDIO DEVICES INC., 1600 Broadway, New York, N. Y., "Audio"—1 phase 110v. to 3 phase 220v. converter
 BEE ENGINEERING CO., 7665 Grand River Ave., Detroit, Mich.—PU
 THE BENWOOD LINZE CO., 1832 Washington Ave., St. Louis, Mo., "B-L," "Auto Radio Filterpac"—M, PU
 B-L—The Benwood Linze Co.
 CINEMA ENGINEERING CO., 1508 S. Verdugo Ave., Burbank, Calif., "Cinema"—PU
 COLLINS RADIO CO., 2920 First Ave., Cedar Rapids, Ia.—PU, V
 DELCO—United Motors Service
 DE VRY CORP., 1111 Armitage Ave., Chicago, Ill.—B, G, MA, PU
 ECCO HIGH FREQUENCY CORP., 120 W. 20th St., New York, N. Y.—PU
 ELECTRICAL PRODUCTS CO., 6535 Russell St., Detroit, Mich.—M
 ELECTRONIC LABORATORIES, INC., 122 W. New York St., Indianapolis, Ind.—PU
 ELECTRONIC PRODUCTS CO., St. Charles, Ill.—PU
 ELECTRO PRODUCTS LABORATORIES, 549 W. Randolph St., Chicago, Ill.—BE, PU
 FANSTEEL METALLURGICAL CORP., 46 W. 22nd St., N. Chicago, Ill.—M
 FEDERAL TELEGRAPH CO., 200 Mt. Pleasant Ave., Newark, N. J., "Federal"—B
 FERRANTI ELECTRIC, INC., 30 Rockefeller Plaza, New York, N. Y.—PU
 FERRIS INSTRUMENT CORP., Boonton Ave., Boonton, N. J., "Ferris"—PU
 GENERAL ELECTRIC CO., Schenectady, N. Y.—MA
 GENERAL ELECTRIC CO., West Lynn, Mass.—B, G, M, V

GENERAL TRANSFORMER CORP., 1250 W. Van Buren St., Chicago, Ill., "Porta-Power"—BE, PU (Power packs for portables)
 THOMAS B. GIBBS & CO., 900 W. Lake St., Chicago, Ill.—PU
 ROBERT M. HADLEY CO., 709 E. 61st St., Los Angeles, Calif., & P. O. Box 456, Newark, Del., "Hadley"—PU
 INTERNATIONAL TRANSFORMER CO., 17 W. 20th St., New York, N. Y.—PU
 P. R. MALLORY & CO., INC., 3029 E. Washington St., Indianapolis, Ind., "Mallory Dry Disc"—M, PU
 PORTA-POWER—General Transformer Corp.
 THE RADIART CORP., 13229 Shaw Ave., E. Cleveland, Ohio—PU
 RADIO ENGINEERING LABS, INC., 35-54 36th St., Long Island City, N. Y.—PU
 RADIO RECEPTOR CO., INC., 251 W. 19th St., New York, N. Y., "Radio Receptor"—PU
 RADIOTRON—RCA Mfg. Co.
 RAYTHEON MFG. CO., 190 Willow St., Waltham, Mass., "Rectifier"—PU
 RCA MFG. CO., Front & Cooper Sts., Camden, N. J., "RCA," "Radiotron"—B, G, PU, V
 RECTIFIER—Raytheon Mfg. Co.
 SKAGGS TRANSFORMER CO., 5894 Broadway, Los Angeles, Calif.—PU
 MAXWELL SMITH CO., 1027 N. Highland Ave., Hollywood, Calif.—PU
 STANCOR—Standard Transformer Corp.
 STANDARD TRANSFORMER CORP., 1500 N. Halsted St., Chicago, Ill., "Stancor"—M, PU
 TALK-A-PHONE MFG. CO., 1847 S. Millard Ave., Chicago, Ill.—PU
 UNITED CINEPHONE CORP., 43-37 33rd St., Long Island City, N. Y.—MA, PU, V
 UNITED MOTORS SERVICE, 3044 W. Grand Blvd., Detroit, Mich., "Delco"—PU
 UNITED TELEPHONE CORP., 150 Varick St., New York, N. Y.—PU
 WESTERN ELECTRIC CO., 300 Central Ave., Kearny, N. J.—G, V
 WESTINGHOUSE ELECTRIC & MFG. CO., E. Pittsburgh, Pa.—MA
 WILCOX ELECTRIC CO., INC., 4014 State Line, Kansas City, Kans.—PU
 WILLARD STORAGE BATTERY CO., 246 E. 131st St., Cleveland, Ohio, "Willard"—B

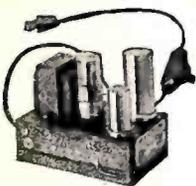
BATTERY ELIMINATORS & RECTIFIERS



- Battery charging tubes B
- Battery eliminators BE
- Gas filled tubes G
- Metallic rectifiers M
- Mercury arc MA
- Power units complete PU
- Vacuum tubes (receiving excluded) V

ACA—Amplifier Co. of America
 AIRPLANE & MARINE DIRECTION FINDER CORP., Clearfield, Pa.—PU

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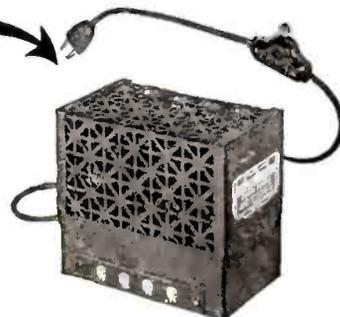
Model "L" Porta-Power supplies "A", "B", and "C" power to any 4- to 8-tube farm battery set using 2-volt tubes. List \$9.95. Dealers \$5.97 net price.

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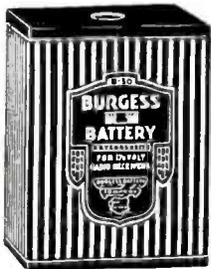
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"B"	B
"C"	C
Bias cells	BC
Dry cells	DC
Flashlight cells	FL
Portable A & B	PB
Storage	S

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 BRIGHT STAR BATTERY CO., 200 Crooks Ave., Clifton, N. J., "Unneed-it," "Eclipse"—A, B, C, BC, DC, FL, PB
 BURGESS BATTERY CO., Freeport, Ill., "Burgess"—A, B, C, DC, FL, PB
 OE VRY CORP., 1111 Armitage Ave., Chicago, Ill.—S
 ECLIPSE—Bright Star Battery Co.
 ELECTRIC STORAGE BATTERY CO., Allegheny Ave. and 19th St., Philadelphia, Pa., "Exide"—S
 EVEREADY—National Carbon Co.
 EXIDE—Electric Storage Battery Co.
 GENERAL DRY BATTERIES, INC., 13100 Athens Ave., Cleveland, Ohio, and Dubuque, Iowa—B, C, FL, PB
 GLOBE-UNION, INC., 900 E. Keefe Ave., Milwaukee, Wis., "Globe-Union"—S
 JUMBO BATTERY MFRS., Ellsworth, Iowa, "Jumbo"—S
 KNIGHT—Allied Radio Corp.
 LAYER-BILT—National Carbon Co., Inc.
 MINI-MAX—National Carbon Co., Inc.
 MONARK BATTERY CO., INC., 4556 W. Grand Ave., Chicago, Ill., "Monark"—S
 MONTGOMERY WARD & CO., 619 W. Chicago Ave., Chicago, Ill., "Airline"—A, B, C, DC, FL, PB, S
 NATIONAL CARBON CO., INC., 30 E. 42nd St., New York, N. Y., "Air Cell," "Eveready," "Layer-Bilt," "Mini-Max"—A, B, C, DC, FL, PB
 NATIONAL UNION RADIO CORP., 57 State St., Newark, N. J., "National Union"—PB
 PHILCO RADIO & TELEVISION CORP., Tioga and C Sts., Philadelphia, Pa.—A, B, C, DC, FL, PB, S
 RAY-O-VAC CO., 2317 Winnebago St., Madison, Wis., "Ray-O-Vac"—A, B, C, DC, FL
 SILLCOX RADIO & TELEVISION CORP., 60 Wall Tower, New York, N. Y.—A, B, C, DC, FL, PB, S
 STROMBERG-CARLSON TELEPHONE MFG. CO., 100 Carlson Rd., Rochester, N. Y., "Stromberg-Carlson"—S, DC
 UNNEED-IT—Bright Star Battery Co.
 UNITED STATES ELECTRIC MFG. CORP., 222 W. 14th St., New York, N. Y., "Usalight"—DC, FL, PB
 UNIVERSAL BATTERY CO., 3410 S. LaSalle St., Chicago, Ill., "Universal"—S
 U S L BATTERY CORP., Niagara Falls, N. Y., "U-S-L"—S
 USALIGHT—United States Electric Mfg. Corp.
 WILLARD STORAGE BATTERY CO., 246 E. 131st St., Cleveland, Ohio, "Willard"—A, B, C, DC, FL, PB, S
 WIND-IMPELLER ELECTRIC WORKS, Ellsworth, Iowa—S

CAPACITORS, FIXED



Ceramic	C
Electrolytic dry	ED
Electrolytic wet	EW
Industrial	I
Mica receiving	M
Paper (receiving)	P
Polystyrene	PO
Transmitting	T

AEROVOX CORP., 740 Belleville Ave., New Bedford, Mass.—ED, EW, I, M, P, PO, T

AMERICAN CONDENSER CORP., 2508 S. Michigan Ave., Chicago, Ill.—ED, I, P, T
 VICTOR J. ANDREW, 6429 South Lavergne Ave., Chicago, Ill.—T
 ATLAS CONDENSER PRODUCTS CO., 548 Westchester Ave., New York, N. Y.—ED, P
 ATOMS—Sprague Products Co.
 AUTOMATIC WINDING CO., INC., 900 Passaic Ave., East Newark, N. J.—C, M, T
 BOND PRODUCTS CO., 13139 Hamilton Ave., Detroit, Mich.—P
 BUD RADIO, INC., 5205 Cedar Ave., Cleveland, Ohio—M
 ALLEN D. CARDWELL MFG. CORP., 81 Prospect St., Brooklyn, N. Y.—T (Air)
 CENTRALAB, 900 E. Keefe Ave., Milwaukee, Wis.—C
 CONDENSER CORP. OF AMERICA, 1000 Hamilton Blvd., South Plainfield, N. J.—ED, EW, I, M, P, T
 CONDENSER PRODUCTS, 1375 N. Branch St., Chicago, Ill.—ED, P, PO
 CONSOLIDATED WIRE & ASSOC. CORP., Peoria & Harrison Sts., Chicago, Ill.—ED, P, T
 CORNELL-DUBILIER ELEC. CORP., 1000 Hamilton Blvd., South Plainfield, N. J.—ED, EW, I, M, P, T
 COSMIC RADIO CORP., 699 E. 135th St., New York, N. Y., "Cosmic," "Megrite"—ED, P
 TOBE DEUTSCHMANN CORP., Canton, Mass.—ED, I, P, T
 DOMINO—Solar Mfg. Corp.
 DUMONT ELECTRIC CO., INC., 514 Broadway, New York, N. Y., "Dumont"—ED, EW, I, M, P, T
 D-X RADIO PRODUCTS CO., 1575 Milwaukee Ave., Chicago, Ill.—C
 ECCO HIGH FREQUENCY CORP., 120 W. 20th St., New York, N. Y., "Ecco H.F."—T
 ELECTRO MOTIVE MFG. CO., INC., So. Park & John Sts., Willimantic, Conn.—M
 ELMENCO—Electro Motive Mfg. Co., Inc.
 ERIE RESISTOR CORP., Erie, Pa.—C, M
 EX-STAT—Tilton Electric Corp.
 J. E. FAST & CO., 3101 N. Pulaski Ave., Chicago, Ill.—I, P, PO, T
 GENERAL ELECTRIC CO., Pittsfield, Mass.—I, T
 GENERAL MFG. CO., 1255 S. Michigan Ave., Chicago, Ill.—C, M, P
 GENERAL RADIO CO., 30 State St., Cambridge, Mass., "G-R"—Precision M, Special
 G-H—Girard-Hopkins
 GIRARD-HOPKINS, 1437 23rd Ave., Oakland, Calif., "G-H"—ED, EW, I, P, PO, T
 G-R—General Radio Co.
 HEINTZ & KAUFMAN, LTD., South San Francisco, Calif.—T (compressed gas filled)
 HK—Heintz & Kaufman, Ltd.
 H. R. S. PRODUCTS, 703 N. Cicero Ave., Chicago, Ill.—ED, I, P, PO, T
 ICA—Insuline Corp. of America
 ILLINOIS CONDENSER CO., 1160 N. Howe St., Chicago, Ill., "Illinois"—ED, I, P
 INDUSTRIAL CONDENSER CORP., 4045 W. Diversey Ave., Chicago, Ill., "Industrial"—ED, I, P, T
 INSULINE CORP. OF AMERICA, 30-30 Northern Blvd., Long Island City, N. Y., "ICA"—T
 E. F. JOHNSON, Waseca, Minn., "Johnson"—T
 KODACAP—Micomold Radio Corp.
 LEEDS & NORTHRUP CO., 4970 Stenton Ave., Philadelphia, Pa.—Precision M
 LITTLE GIANT—Solar Mfg. Corp.
 MAGNAVOX CO., 2131 Bueter Rd., Ft. Wayne, Ind., "Magnarox"—ED
 P. R. MALLORY & CO., 3029 E. Washington St., Indianapolis, Ind., "Mallory"—ED, EW, I, M, P, T
 MICAMOLD RADIO CORP., 1087 Flushing Ave., Brooklyn, N. Y., "Kodacap"—ED, I, M, P, PO, T
 MEGRITE—Cosmic Radio Corp.
 JAMES MILLEN MFG. CO., INC., 150 Exchange St., Malden, Mass.—C, I, PO, T
 MINICAP—Solar Mfg. Corp.
 MUTER CO., 1255 South Michigan Ave., Chicago, Ill., "Muter"—C, M
 PHILCO RADIO & TELEVISION CORP., Tioga & C Sts., Philadelphia, Pa.—ED, EW, M, P
 THE POTTER CO., 1950 Sheridan Rd., North Chicago, Ill., "Potter"—ED, I, P, T
 RCA FARADON—RCA Mfg. Co.
 RCA MFG. CO., Front & Cooper Sts., Camden, N. J., "RCA," "RCA Faradon"—C, M, P, T
 SANGAMO ELECTRIC CO., Springfield, Ill., "Sangamo"—M, T
 SEALDTITE—Solar Mfg. Corp.
 SEVISION MAGNETO ENG. CO., 379 Phillips Ave., Toledo, Ohio—P
 F. W. SICKLES CO., P. O. Box 920, Springfield, Mass., "SilverCap"—M (silvered mica)
 SILVERCAP—F. W. Sickles Co.
 SOLAR MFG. CORP., Bayonne, N. J., "Solar," "Domino," "Sealdtite," "Tom Thumb," "Transoll," "Transmica," "Minicap," "Little Giant"—ED, EW, I, M, P, PO, T
 SPRAGUE PRODUCTS CO., N. Adams, Mass., "Sprague 600 Line," "Atoms"—ED, EW, I, M, P, T
 STROMBERG-CARLSON TELEPHONE MFG. CO., 100 Carlson Rd., Rochester, N. Y.—P
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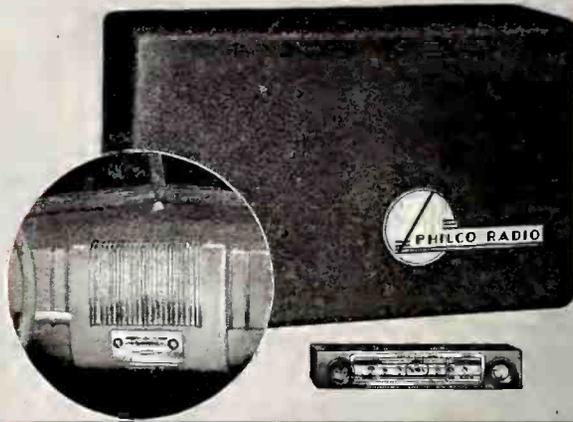
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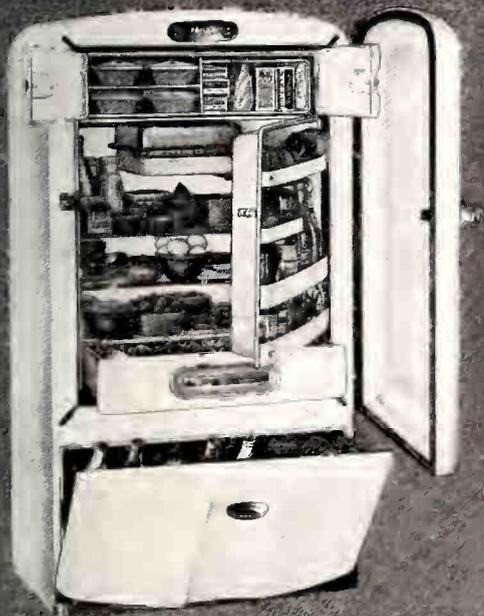
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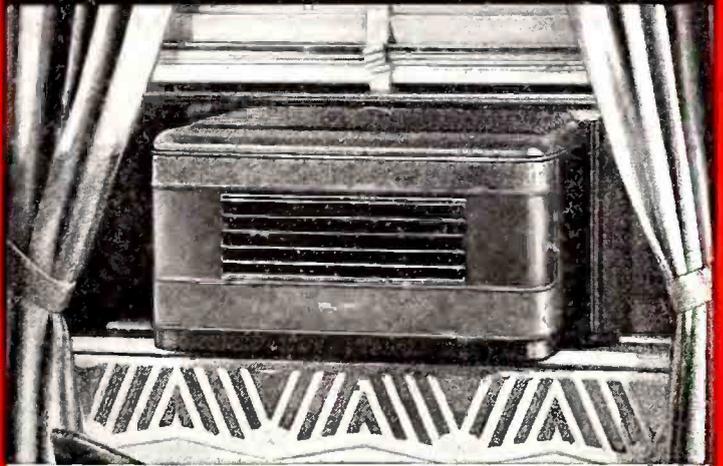
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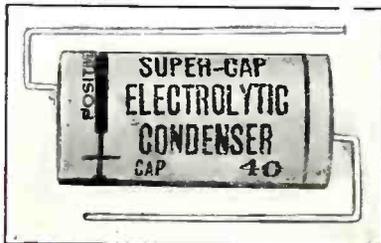
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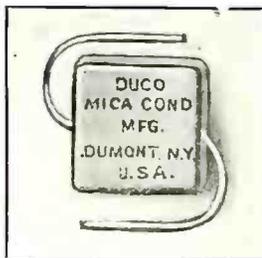
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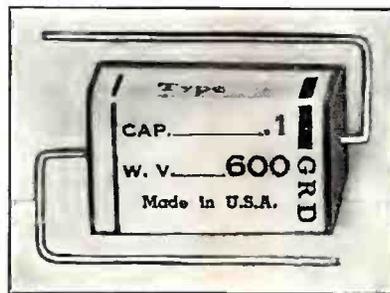
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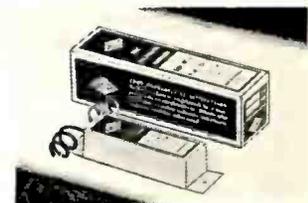


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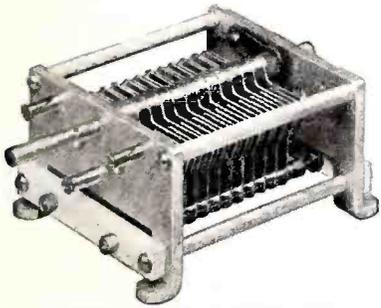
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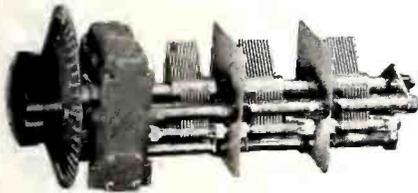
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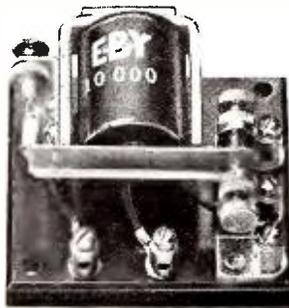
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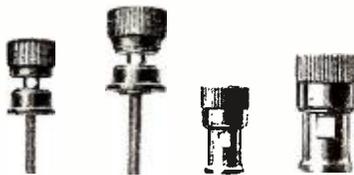
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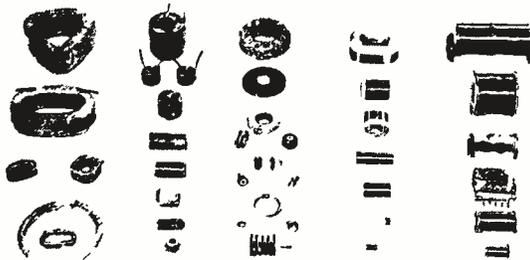
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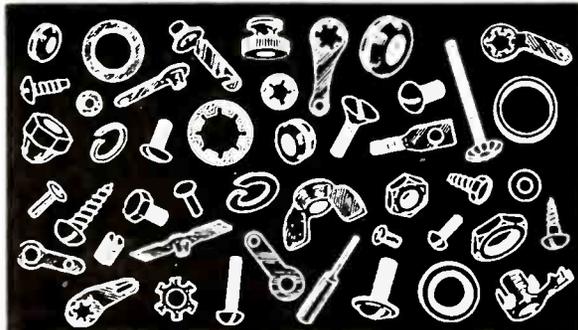
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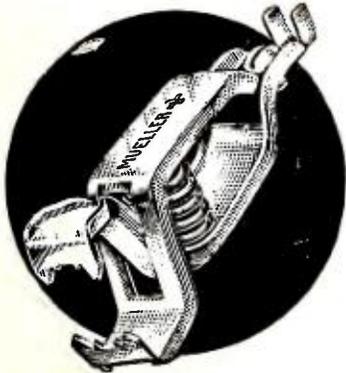
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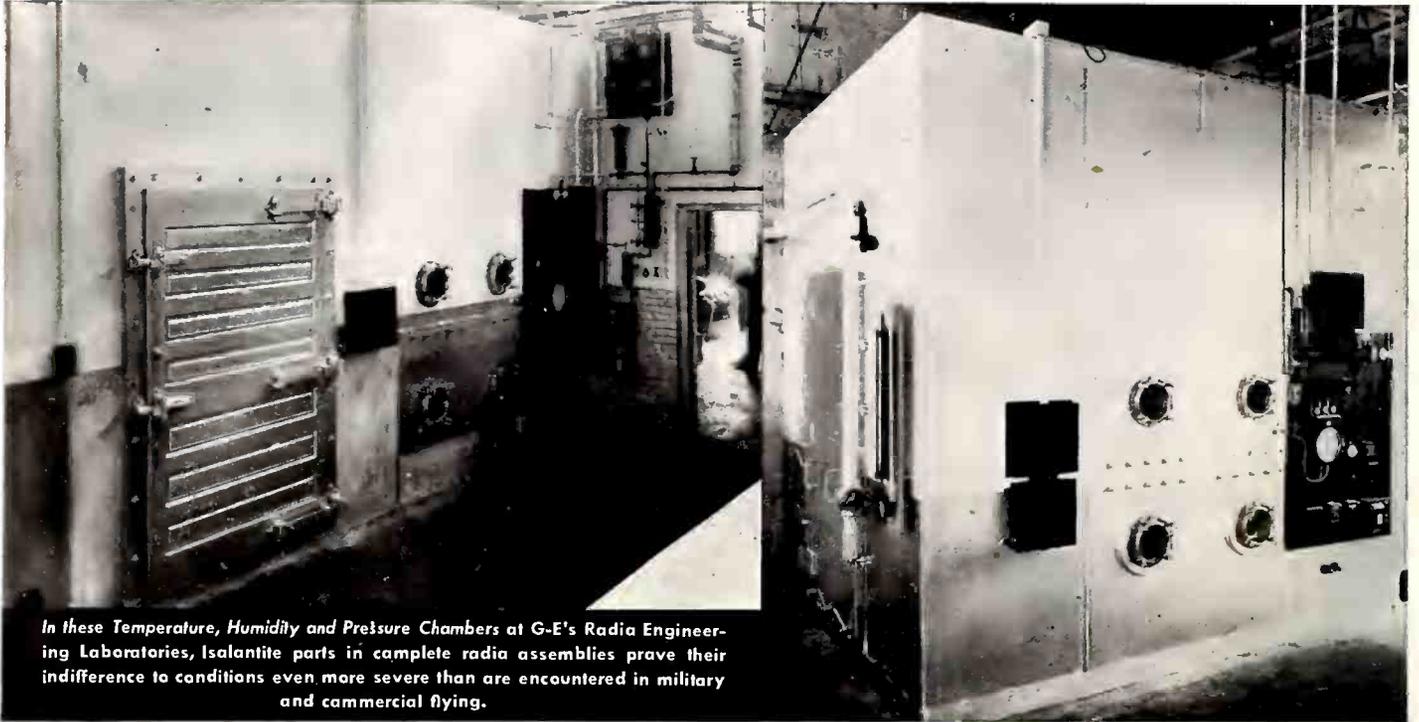
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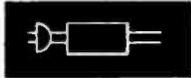
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 BELDEN MFG. CO., 4647 W. Van Buren St., Chicago, Ill.—S
 BENDIX RADIO CORP., 920 E. Fort Ave., Baltimore, Md.—I
 L. S. BRACH MFG. CORP., 55 Dickerson St., Newark, N. J.—S
 BUD RADIO INC., 5205 Cedar Ave., Cleveland, Ohio, "Bud"—P
 CONSOLIDATED WIRE & ASSOC. CORPS., Peoria & Harrison Sts., Chicago, Ill.—S
 CONTINENTAL CARBON INC., 13900 Lorain Ave., Cleveland, Ohio, "Continental," "Filtemoys"—P, S
 CORNELL DUBILIER Elec. CORP., South Plainfield, N. J., "Quietone"—P, S
 ELECTRO PRODUCTS LABORATORIES, 549 W. Randolph St., Chicago, Ill.—P, S
 ELIM-O-STAT—Solar Mfg. Corp.
 FERRIS INSTRUMENT CORP., Boonton Ave., Boonton, N. J., "Ferris"—IA, I
 FILTERNOYS—Continental Carbon Inc.
 GENERAL ELECTRIC CO., Pittsfield, Mass.—P
 GENERAL WINDING CO., 254 W. 31st St., New York, N. Y., "Gen-Win"—P, S
 GEN-WIN—General Winding Co.
 GIRARD-HOPKINS, 1437 23rd Ave., Oakland, Calif.—S
 THE HALLDORSON CO., 4500 Ravenswood Ave., Chicago, Ill.—S
 ICA—Insuline Corp. of America
 INSULINE CORP. OF AMERICA, 30-30 Northern Blvd., Long Island City, N. Y., "ICA"—P, S
 INTERNATIONAL TRANSFORMER CO., 17 W. 20th St., New York, N. Y.—P
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 J. W. MILLER CO., 5917 S. Main St., Los Angeles, Calif., "Miller"—IA, I, P, S
 OHMITE MFG. CO., 4835 W. Flournoy St., Chicago, Ill.—P
 PHILCO RADIO & TELEVISION CORP., Tioga & C Sts., Philadelphia, Pa.—P, S
 PHILMORE MFG. CO., 113 University Place, New York, N. Y., "Philmore"—P, S
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 QUIETONE—Cornell-Dubilier Elec. Corp.
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 TECHNICAL APPLIANCE CORP., 17 E. 16th St., New York, N. Y., "Taco"—S
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- Enamel E
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- Paper P
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- Stand-off insulators SO
- Tubing (varnished) T
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 AMPHENOL—American Phenolic Corp.
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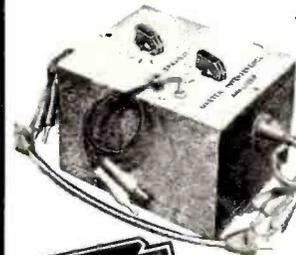
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Panels	P
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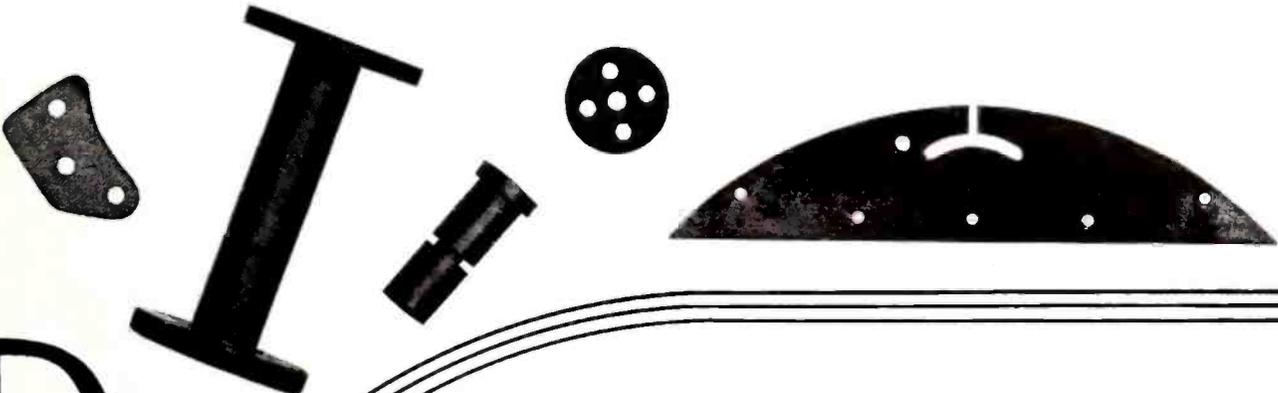
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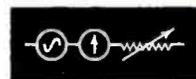
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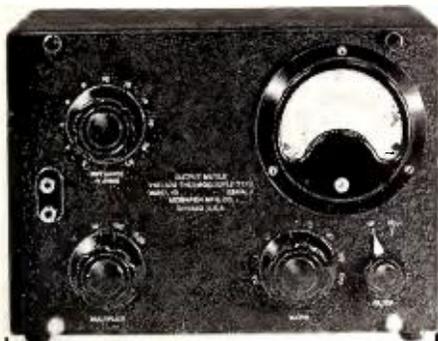
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 JONES-ORME CO., 2233 University Ave., St. Paul, Minn.—FM, FS, O, SA
 LAMPKIN LABS., Bradenton, Fla.—FM
 LEEDS & NORTHRUP CO., 4970 Stenton Ave., Philadelphia, Pa.—B, F, R
 JOHN MECK INDUSTRIES, 1313 W. Randolph St., Chicago, Ill., "Meck"—B, SL
 MEISSNER MFG. CO., 7th & Belmont, Mt. Carmel, Ill.—SR
 JAMES MILLEN MFG. CO., INC., 150 Exchange St., Malden, Mass.—FM, L
 MILLION RADIO & TELEVISION, 685 W. Ohio St., Chicago, Ill.—M, VT
 MONARCH MFG. CO., 3341 Belmont Ave., Chicago, Ill., "Monarch"—B, M, MV, SR, VT
 MOTOR MIKE—Sprague Products Co.
 MUTER CO., 1255 S. Michigan Ave., Chicago, Ill., "Muter"—B, R
 TED NAGLE EQUIPMENT CORP., General Motors Bldg., Detroit, Mich.—O
 NORWALK TRANSFORMER CORP., South Norwalk, Conn., "Norwalk"—VT
 OHMITE MFG. CO., 4835 W. Flournoy St., Chicago, Ill., "Ohmite"—DA
 POTTER CO., 1950 Sheridan Rd., N. Chicago, Ill., "Potter"—C
 PREMIER CRYSTAL LABS., INC., 55 Park Row, New York, N. Y.—FM, FS
 Q METER—Boonton Radio Corp.
 QX CHECKER—Boonton Radio Corp.
 RADIO DESIGN CO., 1353 Sterling Pl., Brooklyn, N. Y., "Radio Design"—M
 RADIO INSTRUMENTS MFG. CO., 1131 Terry Rd., Jackson, Miss.—FM
 RCA MFG. CO., Front & Cooper Sts., Camden, N. J.
 "RCA"—B, C, DM, F, FM, FS, M, O, R, SA, SR
 SHALLCROSS MFG. CO., 10 Jackson Ave., Collingdale, Pa., "Shallcross"—B, M, R
 MAXWELL SMITH CO., 1027 N. Highland Ave., Hollywood, Calif.—F, SL
 SOUND APPARATUS CO., 150 W. 46th St., New York, N. Y.—SL
 SPRAGUE PRODUCTS CO., N. Adams, Mass., "Motor Mike"—C
 SUNDT ENGINEERING CO., 4757 Ravenswood Ave., Chicago, Ill.—O
 SUPREME INSTRUMENTS CORP., 414 Howard St., Greenwood, Miss., "Supreme"—B, O
 TECH LABORATORIES, 7 Lincoln St., Jersey City, N. J., "Tech Lab"—B, R, SL
 TEFIT RADIO CO., Plymouth, Mich.—B, F, FM, SA, SR, VT
 TELEVISIO CO., 341 N. Pulaski Rd., Chicago, Ill.—FM, FS, MV, SA, SR, VT, WA
 THORDARSON ELECTRIC MFG. CO., 500 W. Huron St., Chicago, Ill.—L
 TOBE DEUTSCHMANN CORP., Canton, Mass.—B, C
 TRIPLET ELECTRICAL INSTRUMENT CORP., 122 Main St., Bluffton, Ohio, "Triplet"—B, M, O, VT
 TRIUMPH MFG. CO., 4017 W. Lake St., Chicago, Ill.—MV, O, SR
 UNITED CINEPHONE CORP., 43-37 33rd St., Long Island City, N. Y., "United Cinephone Research Labs."—B, SL
 VIBROTEST—Associated Research Inc.
 EARL WEBBER CO., 1313 W. Randolph St., Chicago, Ill., "Webber"—B, C, FM, L, M, MV, O, R, SL, SA, SR
 WESTERN SOUND & ELEC. LABS., INC., 311 W. Kilbourn Ave., Milwaukee, Wis.—Surge generator
 WESTINGHOUSE ELECTRIC CO., Orange St., Newark, N. J.—M
 WESTON ELECTRICAL INSTRUMENT CORP., 614 Frelinghuysen Ave., Newark, N. J.—M, SL, VT
 WILCOX ELECTRIC CO., INC., 4014 State Line, Kansas City, Kans.—FM, FS
 WRIGHT'S ELEC. INST. LAB., Reed College, Portland, Ore.—M

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- Cement C
- Coil dopes CD
- Enamels E
- Insulating compounds I
- Lacquers L
- Paint P
- Resins R
- Solvents S
- Varnish V
- Wax W

ALDEN PRODUCTS CO., 715 Center St., Brockton, Mass.—C, CD, E, L



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AMPHENOL—American Phenolic Corp.
CARRON MFG. CO., 415 S. Aberdeen St., Chicago, Ill.—C, E, I
CELLULOID CORP., 10 E. 40th St., New York, N.Y.—C
CROLITE—Henry L. Crowley & Co.
HENRY L. CROWLEY & CO., 1 Central Ave., West Orange, N. J., "Crolite"—C
D-X RADIO PRODUCTS CO., 1575 Milwaukee Ave., Chicago, Ill.—C
G-C—General Cement Mfg. Co.
GENERAL CEMENT MFG. CO., 1041 Kilburn Ave., Rockford, Ill., "G-C"—C, CD, E, L, P, V, W
GENERAL ELECTRIC CO., 1285 Boston Ave., Bridgeport, Conn., "GE"—C
HARVEL—Irrington Varnish & Insulator Co.
ICA—Insuline Corp. of America
INSULATION MANUFACTURERS CORP., 565 W. Washington Blvd., Chicago, Ill.—V, W
INSULINE CORP. OF AMERICA, 30-30 Northern Blvd., Long Island City, N. Y., "ICA"—C, L
IRVINGTON VARNISH & INSULATOR CO., 18 Argyle Terrace, Irvington, N. J., "Irvington," "Harvel"—E, P, R, V
J. F. D. MFG. CO., 4111 Ft. Hamilton Pkwy., Brooklyn, N. Y., "JFD"—C
MAAS & WALDSTEIN CO., 438 Riverside Ave., Newark, N. J.—C, E, L, P, V, W
MEISSNER MFG. CO., 7th & Belmont, Mt. Carmel, Ill.—C
MICA INSULATOR CO., 200 Varick St., New York, N. Y., "Mico"—V
MICO—Mica Insulator Co.
NASH RADIO PRODUCTS CO., 6267 Gravois Ave., St. Louis, Mo.—C, E, L, P, V, W
ROXALIN FLEXIBLE LACQUER CO., Elizabeth, N. J.—E, L, P
WALTER L. SCHOTT CO., 5264 W. Pico Blvd., Los Angeles, Calif., "Walsco"—C, E, L, S, W
WALSCO—Walter L. Schott Co.
ZOPHAR MILLS, INC., 112 26th St., Brooklyn, N. Y.—C, I, W

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Condenser CON
Contact CT
Crystal CRY
Dynamic DYN
Home broadcasting HB
Velocity VEL
Accessories ACC
Connectors CTR
Stands STD
Springs SPR

AIRPLANE & MARINE DIRECTION FINDER CORP., Clearfield, Pa.—CAR
ALDEN PRODUCTS CO., 715 Center St., Brockton, Mass.—CTR
ALLIED BURNS CO., 1008 Madison Ave., Toledo, Ohio—CAR, DYN, VEL, ACC
ALLIED ENGINEERING INSTITUTE, 85 Warren St., New York, N. Y.—HB (wireless)
AMERICAN MICROPHONE CO., INC., 1915 Western Ave., Los Angeles, Calif., "American"—CAR, CON, CRY, DYN, HB, VEL, ACC, CTR, STD, SPR
AMERICAN PHENOLIC CORP., 1250 Van Buren St., Chicago, Ill., "Amphenol"—ACC, CTR
AMPERITE CO., 561 Broadway, New York, N. Y., "Amperite"—CT, VEL, ACC, STD
AMPHENOL—American Phenolic Corp.
ART SPECIALTY CO., 1115 N. Franklin St., Chicago, Ill.—ACC, STD
ASTATIC MICROPHONE LABORATORY, 830 Market St., Youngstown, Ohio, "Astatic"—CRY, STD
ATLAS SOUND CORP., 1451 39th St., Brooklyn, N. Y., "Atlas Velvet Action"—ACC, CTR, STD, SPR
BANK'S MFG. CO., 5019 N. Winthrop Ave., Chicago, Ill.—DYN, HB
BELFONE—Bell Sound Systems, Inc.
BELL SOUND SYSTEMS, INC., 1183 Essex Ave., Columbus, Ohio, "Belfone"—CRY, DYN, VEL, STD
BIRNBACH RADIO CO., INC., 145 Hudson St., New York, N. Y.—ACC, CTR
W. C. BRAUN, INC., 601 W. Randolph St., Chicago, Ill.—STD
BRUNO LABORATORIES, INC., 30 W. 15th St., New York, N. Y., "Bruno," "Velotron"—VEL, ACC, CTR, STD
BRUSH DEVELOPMENT CO., 3311 Perkins Ave., Cleveland, Ohio—CRY, ACC, CTR, STD
BUD RADIO, INC., 5205 Cedar Ave., Cleveland, Ohio—ACC, CTR, STD, SPR
BULLET—Transducer Laboratories
CANNON ELECTRIC DEVELOPMENT CO., 420 West Ave. 33, Los Angeles, Calif.—ACC, CTR

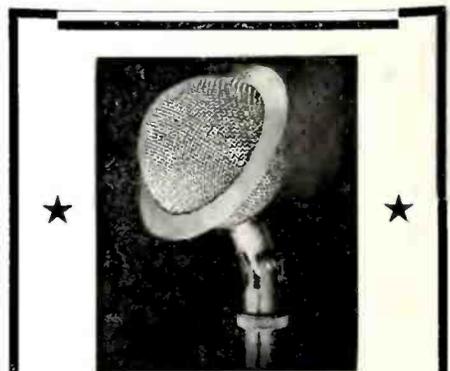


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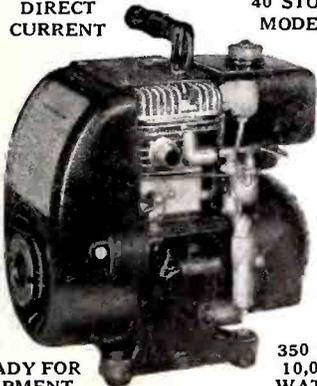
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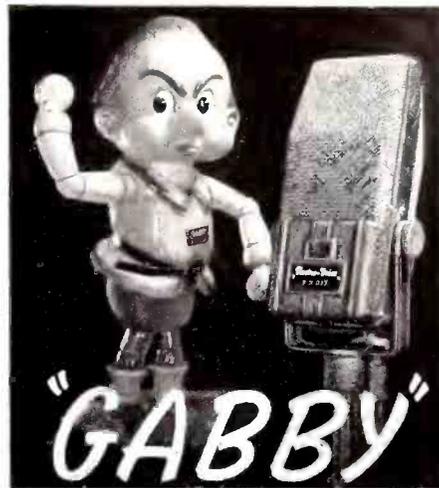
CARRIER MICROPHONE CO., 439 S. La Brea Ave., Inglewood, Calif., "Carrier"—DYN, VEL
CINEMA ENGINEERING CO., 1508 S. Verdugo Ave., Burbank, Calif., "Cinema"—CON, STD
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ELECTRO-VOICE MFG. CO., 1239 South Bend Ave., South Bend, Ind., "Electro-Voice"—CAR, DYN, VEL, ACC, CTR, STD, SPR
GALVIN MFG. CORP., 4545 Augusta Blvd., Chicago, Ill., "Motorola"—CAR
THE HALLDORSON CO., 4500 Ravenswood Ave., Chicago, Ill.—STD
ICA—Insuline Corp. of America
INSULINE CORP. OF AMERICA, 30-30 Northern Blvd., Long Island City, N. Y., "ICA"—CAR
KAAR ENGINEERING CO., 619 Emerson St., Palo Alto, Calif., "Kaar"—CAR
JOHN MECK INDUSTRIES, 1313 W. Randolph St., Chicago, Ill., "Audiograph"—CRY, DYN, VEL, ACC, CTR, STD
MOTOROLA—Galvin Mfg. Corp.
MONTGOMERY WARD & CO., 619 W. Chicago Ave., Chicago, Ill.—CAR, CRY, VEL
MYSTIC MIKE—Olson Mfg. Co.
OLSON MFG. CO., 362 Wooster Ave., Akron, Ohio, "Mystic Mike"—CAR, HB
PERMANIC—Quam-Nichols Co.
PHILMORE MFG. CO., 113 University Place, New York, N. Y., "Philmore"—HB
QUAM-NICHOLS CO., 33rd Pl. & Cottage Grove Ave., Chicago, Ill., "Permanic"—DYN
RACON ELEC. CO., INC., 52 E. 19th St., New York, N. Y.—DYN
RADIO RECEPTOR CO., INC., 251 W. 19th St., New York, N. Y., "Radio Receptor"—DYN
RADIOTONE, INC., 7356 Melrose Ave., Hollywood, Calif.—CRY, DYN, STD
RCA MFG. CO., Front & Cooper Sts., Camden, N. J., "RCA"—CAR, CON, DYN, HB, VEL, ACC, CTR, STD
REMLER CO., LTD., 2101 Bryant St., San Francisco, Calif., "Remler"—CRY, ACC, CTR, STD
SETCHELL-CARLSON, INC., 2233 University Ave., St. Paul, Minn.—CTR
SHURE BROS., 225 W. Huron St., Chicago, Ill., "Shure"—CAR, CRY, DYN, HB, ACC, STD
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SPEAK-O-PHONE RECORDING & EQUIPMENT CO., 23 W. 60th St., New York, N. Y., "Speakophone"—CRY, STD
STROMBERG-CARLSON TELEPHONE MFG. CO., 100 Carlson Rd., Rochester, N. Y.—CAR
TIBBETTS LABS., Camden, Maine—CRY
TRANSDUCER LABORATORIES, 42 West 48th St., New York, N. Y., "Bullet"—DYN, ACC, STD
TURNER CO., Cedar Rapids, Iowa, "Turner"—CRY, DYN
UNIVERSAL MICROPHONE CO., Inglewood, Calif.—CAR, CON, CRY, DYN, VEL, ACC, STD, SPR
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VIBRALOC MFG. CO., 1273 Mission St., San Francisco, Calif.—DYN, VEL
WEBSTER-CHICAGO, 5622 Bloomingdale Ave., Chicago, Ill.—CRY, DYN, ACC, STD
WESTERN ELECTRIC CO., 300 Central Ave., Kearny, N. J.—CAR, CON, DYN, ACC, CTR, STD

ROTARY MACHINES



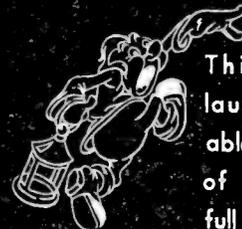
AC plants (gas engine) . . . AC
Converters CON
DC generators DC
Dynamotors DYN
Gas engines ENG
Motor generator MG

BODINE ELECTRIC CO., 2254 W. Ohio St., Chicago, Ill.—CON, DYN
CARTER MOTOR CO., 1608 N. Milwaukee Ave., Chicago, Ill.—CON, DC, DYN, MG
DE VRY CORP., 1111 Armitage Ave., Chicago, Ill.—AC, CON
DIEHL MFG. CO., Elizabethport, N. J., "Diehl"—CON, MG
EICOR, INC., 515 S. Laflin St., Chicago, Ill.—AC, CON, DC, DYN, ENG, MG
ELECTRIC SPECIALTY CO., Stamford, Conn., "Esco"—CON, DYN, DC
ESCO—Electric Specialty Co.
GENERAL ELECTRIC CO., Schenectady, N. Y.—CON, DC, MG
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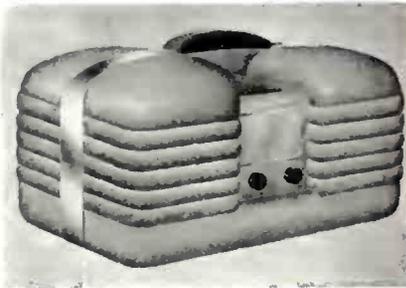
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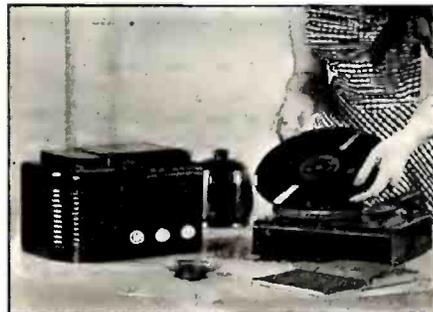
practically unlimited. Few restrictions as to form, finish, decoration, color. Consider ease of production... housings shaped and finished in a single swift molding operation—complete with embossed effects, recesses, grilles, mortices. Then add to these the following important advantages which versatile Durez plastics bring to *any* product:

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 LAUSON CO., New Holstein, Wis.—ENG
 MIDCO MFG. & DIST. CO., INC., S. 13th & Kentucky Ave., Sheboygan, Wis.—AC, ENG
 MONTGOMERY WARD & CO., 619 W. Chicago Ave., Chicago, Ill.—AC, CON, DC, ENG, MG
 D. W. ONAN & SONS, 43 Royalston Ave., Minneapolis, Minn.—AC, DC, ENG
 PIONEER GEN-E-MOTOR CORP., 466 W. Superior St., Chicago, Ill.—AC, CON, DYN
 POTTER CO., 1950 Sheridan Rd., North Chicago, Ill.—AC
 RCA MFG. CO., Front & Cooper Sts., Camden, N. J., "RCA Photophone"—CON
 RCA PHOTOPHONE—RCA Mfg. Co.

PLASTICS

Cellulose acetate C
 Phenols PH
 Polystyrene P

BAKELITE CORP., 247 Park Ave., New York, N. Y., "Bakelite"—C, PH, P
 BUD RADIO, INC., 5205 Cedar Ave., Cleveland, Ohio, "Bud"—Lucite
 CELLULOID CORP., 10 E. 40th St., New York, N. Y.—C
 E. I. DUPONT DE NEMOURS & CO., INC., Plastics Dept., 626 Schuyler Ave., Arlington, N. J.—Lucite
 DUREZ PLASTICS & CHEMICALS, INC., North Tonawanda, N. Y., "Durez"—PH
 GENERAL ELECTRIC CO., Schenectady, N. Y., "Textolite"
 INSUROK—Richardson Co.
 NATIONAL VULCANIZED FIBRE CO., Wilmington, Del., "Phenolite"—PH
 PHENOLITE—National Vulcanized Fibre Co.
 RICHARDSON CO., 27th & Lake Sts., Melrose Park, Ill., "Insurok"
 TEXTOLITE—General Electric Co.

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Carrying bags CB
 Cloth covered CC
 Console (wood) C
 Metal M
 Plastic (see plastic molders)
 Portable P
 Rawhide R
 Table (wood) T

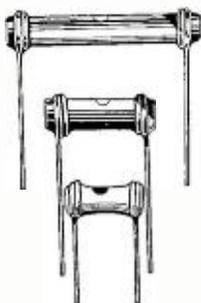
ADLER MFG. CO., 2901 W. Chestnut St., Louisville, Ky.—C, T
 AMERICAN COMMUNICATIONS CORP., 123 Liberty St., New York, N. Y.—M, T
 AMERICAN RADIO HARDWARE CO., 476 Broadway, New York, N. Y., "Arhco"—M
 ANSLEY RADIO CORP., 4377 Bronx Blvd., New York, N. Y., "Dynaphone"—C, T
 ARCADIA—Wells-Gardner & Co.
 ARHCO—American Radio Hardware Co.
 BUD RADIO, INC., 5205 Cedar Ave., Cleveland, Ohio, "Bud"—M
 CASTLEWOOD MFG. CO., INC., 12th & Burnett Sts., Louisville, Ky.—C, T
 CASWELL-RUNYAN CO., Huntington, Ind.—C, T
 CHICAGO NOVELTY FURNITURE CO., 1750 N. Campbell Ave., Chicago, Ill.—C
 CHURCHILL CABINET CO., 2119 W. Churchill St., Chicago, Ill.—C, T
 DYNAPHONE—Ansley Radio Corp.
 ERIE CAN CO., 816 Erie St., Chicago, Ill.—M
 FLOCK PROCESS CORP., 17 W. 31st St., New York, N. Y.—Flock covered
 ROBERT M. HADLEY CO., 709 E. 61st St., Los Angeles, Calif., & P. O. Box 456, Newark, Del., "Hadley"—M
 ICA—Insuline Corp. of America
 ILLINOIS CABINET CO., Rockford, Ill.—CC, C, P, T
 ILLINOIS WOOD PRODUCTS CORP., 2512 S. Damen Ave., Chicago, Ill.—C, T
 INSULINE CORP. OF AMERICA, 30-30 Northern Blvd., Long Island City, N. Y., "ICA"—M
 LE FEBURE CORP., 716 Oakland Blvd., Cedar Rapids, Iowa—M
 LINCROPHONE CO., 1661 Howard Ave., Utica, N. Y.—P
 J. W. MILLER CO., 5917 S. Main St., Los Angeles, Calif.—M
 NASH RADIO PRODUCTS CO., 6267 Gravois Ave., St. Louis, Mo.—C, T
 PAR METAL PRODUCTS CORP., 35-25 41st St., Long Island City, N. Y., "Par-Met"—M
 RADIOTONE, INC., 7356 Melrose Ave., Hollywood, Calif.—C, P
 RCA MFG. CO., Front & Cooper Sts., Camden, N. J., "RCA"—C, M
 STEGER FURNITURE MFG. CO., Steger, Ill.—C, T

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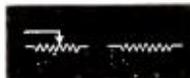
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Variable . . . V
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CORDOHM—Ohmite Mfg. Co.
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DEPENDABLE—Radio City Products Co., Inc.
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DIVIDOHM—Ohmite Mfg. Co.
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ELECTRO PRODUCTS LABORATORIES, 549 W. Randolph St., Chicago, Ill.—VC
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G-R—General Radio Co.
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HYGRADE-SYLVANIA CORP., Emporium, Pa., "Sylvania"—PT
HYTRON CORP., 76 Lafayette St., Salem, Mass., "Hytron"—PT
ICA—Insuline Corp. of America
INSTRUMENT RESISTORS, INC., 379 Main St., Little Falls, N. J.—FW, I, PRE, V
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PART NUMBER	WATT RATING	RESISTANCE RANGE	LENGTH	DIAMETER
763-A	1/3	1 OHM TO 15 MEGOHMS	1/2"	1/8"
759-A	1/2	1 OHM TO 15 MEGOHMS	5/8"	3/16"
766-A	1	1 OHM TO 15 MEGOHMS	1"	3/16"
792-A	3	10 OHMS TO 150,000 OHMS	1-3/4"	3/8"
774-A	5	10 OHMS TO 250,000 OHMS	2-1/2"	3/8"

STANDARD RESISTANCE (Tolerances 5%—10%—20%)
ALL RESISTORS COLOR CODED according to R.M.A. Standard.

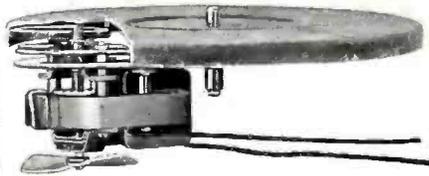
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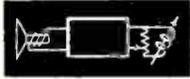


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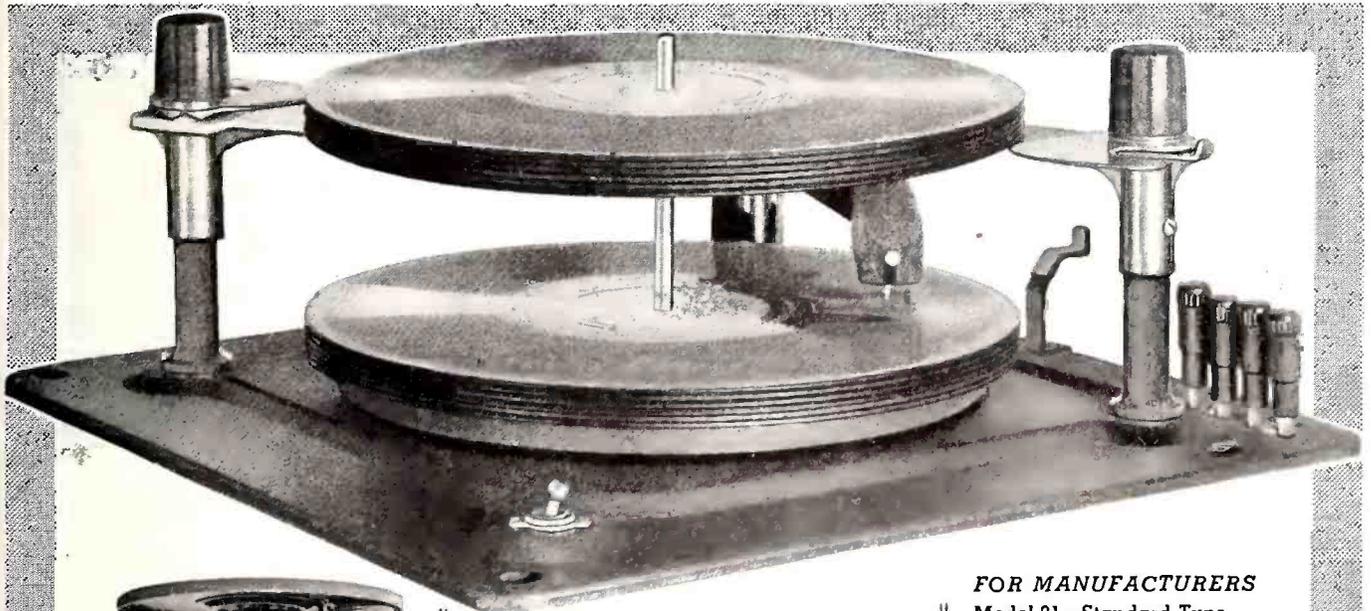
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- Needles N
- Pick-ups (crystal) PC
- Pick-ups (magnetic) PM
- Records R
- Record albums RA
- Record cabinets RC
- Record compounds RO
- Record player attachments RP
- Store equipment SE
- Transcription record players TR
- Turntables TT
- Wireless players WP
- Coin record players CM

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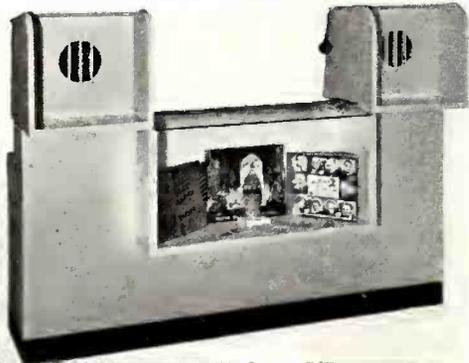
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BITTER

RECORD MERCHANDISING EQUIPMENT

Our Planning Division will gladly plan your Record Dept.—Send us your requirements and space allotted for same, or write for our new catalog, showing latest ideas in record merchandising.

A. BITTER CONSTRUCTION CORP.
27-01 BRIDGE PLAZA NORTH
Long Island City New York
Established 1920

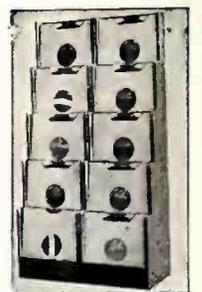


RECORD UNIT 101-A-REAR

Perfect set-up for free-standing floor display and selling unit. Upper part has 2-side display with space for 240 10" records; also circulars and album display. Lower section subdivided for record or album stock. Capacity 650 10" or 12" records. Size 44" wide, 58" high, 17 1/2" deep.

Record Merchandise

No. 28—For display and storage. May be set on a low counter or hung on a wall. Sprayed Duco finish, walnut color, on sheet steel. Capacity 140 10" records. Size 21" long, 37" high, 9" deep.



RANGERTONE, INC., 201 Verona Ave., Newark, N. J.
 —N
 RAY LAB, INC., 211 Railroad Ave., Elmira, N. Y.,
 "Ray Lab"—TR (for silent film)
 RCA MFG. CO., Front & Cooper Sts., Camden, N. J.,
 "RCA," "Victor," "Bluebird"—ARC, EL, M, N,
 PC, PM, R, RA, RC, RP, TR, TT, WP
 RECOTON CORP., 178 Prince St., New York, N. Y.
 —N
 REGAL AMPLIFIER MFG. CORP., 14 W. 17th St.,
 New York, N. Y.—ARC, EL, WP
 REK-O-KUT CORP., 254 Canal St., New York, N. Y.
 —R
 REMLER CO., LTD., 2101 Bryant St., San Francisco,
 Calif., "Remler"—TR
 ROCK-OLA MFG. CORP., 800-867 N. Kedzie Ave.,
 Chicago, Ill.—CM
 ROYALE—U. S. Record Corp.
 SCHLOSS BROS. CORP., 301 E. 135th St., New
 York, N. Y.—RC
 J. P. SEEBURG CORP., 1510 N. Dayton St., Chicago,
 Ill.—CM
 SHURE BROS., 225 W. Huron St., Chicago, Ill.,
 "Zephyr"—PC
 SILLCOX RADIO & TELEVISION CORP., 60 Wall
 Tower, New York, N. Y.—ARC, EL
 MAXWELL SMITH CO., 1027 N. Highland Ave., Hol-
 lywood, Calif.—TR
 SONORA RADIO & PHONOGRAPH CORP., 2626 W.
 Washington St., Chicago, Ill., "Sonora"—EL, RP
 SONATA PHONO. MFG. CO., INC., 410 E. 32nd St.,
 New York, N. Y.—EL, WP
 SOUND APPARATUS CO., 150 W. 46th St. New
 York, N. Y.—EL, M, N, PM, R, TR, TT
 SOUND-ON-FILM—Miles Reproducer Co., Inc.
 SPARKS-WITHINGTON CO., E. Ganson Ave., Jackson,
 Mich., "Sparton"—WP
 SPARTON—Sparks-Withington Co.
 SPEAK-O-PHONE RECORDING & EQUIPMENT CO.,
 23 W. 60th St., New York, N. Y., "Speakophone"
 —EL, N, PC, TR, TT
 STROMBERG-CARLSON TELEPHONE MFG. CO., 100
 Carlson Rd., Rochester, N. Y., "Stromberg-Carlson"
 —ARC, RP
 SUNDT ENGINEERING CO., 4757 Ravenswood Ave.,
 Chicago, Ill.—ARC, R (Musical tower)
 SUPREME—Phonograph Needle Mfg. Co., Inc.
 TALK-A-PHONE MFG. CO., 1847 S. Millard Ave.,
 Chicago, Ill.—EL, RP, TR, WP
 TALKING DEVICES CO., 4451 Irving Park Blvd.,
 Chicago, Ill.—ARC, R, TT
 TONK MFG. CO., 1975 N. Magnolia Ave., Chicago,
 Ill.—RC
 TRANSFORMER CORP. OF AMERICA, 69 Wooster St.,
 New York, N. Y., "Clarion"—ARC, EL, RC, RP,
 TR, TT, WP
 TROY RADIO & TELEVISION CO., 1144 S. Olive
 St., Los Angeles, Calif.—EL, RP, WP
 TUNNIS BROS., 726 Lake St., Oak Park, Ill.—Record
 Index Systems
 UNITED CINEPHONE CORP., Sound Equip. Div., 43-
 37 33rd St., Long Island City, N. Y., "United
 Cinephone"—PM, TR, TT
 UNITED STATES RECORD CORP., 1780 Broadway,
 N. Y., "Royale," "Varsity"—R, RC, N
 UNIVERSAL MICROPHONE CO., Inglewood, Calif.,—
 M, N, PC, PM, R, TR, TT
 VARSITY—U. S. Record Corp.
 VICTOR—RCA Mfg. Co.
 VOCALION—Columbia Recording Corp.
 J. J. WARNER CO., 1244 Larkin St., San Francisco,
 Calif.—R, TR, TT
 WEBSTER-CHICAGO, 5622 Bloomingdale Ave., Chi-
 cago, Ill.—ARC, EL, M, PM, RP, TT
 WEBSTER ELECTRIC CO., Racine, Wis., "Webster-
 Electric"—PC, PM, RP
 WESTERN ELEC. CO., 300 Central Ave., Kearny,
 N. J.—EL, PM, TR
 WESTERN SOUND & ELECTRIC LABS. INC., 311
 W. Kilbourn Ave., Milwaukee, Wis.—N
 WILCOX ELECTRIC CO., INC., 4014 State Line,
 Kansas City, Kans.—RC
 WILCOX-GAY CORP., Charlotte, Mich.—N, R, RA, WP
 RUDOLPH WURLITZER MFG. CO., North Tonawanda,
 New York—CM
 ZENITH RADIO CORP., 6001 Dickens Ave., Chicago,
 Ill.—WP
 ZEPHYR—Shure Bros.

RECORDING EQUIPMENT AND BLANKS



Cutting heads	CH
Discs (blank)	D
Magnetic tape recorders	MT
Motors	M
Needles (cutting)	CN
Recording machines	RM
Recording machine assem.	RA
Recording supplies	RS
Screws	S
Turntables	TT

H. W. ACTON CO., INC., 370 7th Ave., New York,
 "Actone"—CN
 ACTONE—H. W. Acton Co., Inc.
 AIR KING PRODUCTS CO., INC., 1523 63rd St.,
 Brooklyn, N. Y., "Air King"—RM

When you THINK of Needles THINK of PERMO POINT — The Most Complete Line of Phonograph Needles Available!

For 11 years Permo Products Corporation has been the leading manufacturer of needles for use in automatic phonographs. In fact, the 2,000 Play PERMO POINT Needle is the Only needle recommended by every phonograph manufacturer. It is only logical then that PERMO POINT should manufacture the most complete line of long play needles for home use!



The Transcri-tone PERMO POINT NEEDLE

—perfect for transcription—gives even response over entire audio frequency range. Specially designed to transmit all frequencies useful in modern broadcasting and recording work. Fits standard record groove. Valuable in playback and dubbing work. Permo Metal tip gives 35-50 hours service. Won't wear acetate, nitrate coated or commercial records—prolongs life with self-lubricating Permo Metal Point.



The Fidelitone PERMO POINT NEEDLE

—ideal for home record players and changers. Keeps surface noise at a minimum. Permo Metal point assures finest full range reproduction. Record wear is negligible due to self-lubricating action of Permo Metal point. Gives 50 hours service on standard recordings. Long play for use in home, salon, sound distributing systems, schools, etc.

FOR RECORDING — Permo offers a new cutting stylus equalling ability of sapphire on nitrate coated blanks. Cuts clean grooves, free from surface noises. Regards entire frequency range. Minimum loss of high frequencies—no "peaks." Rugged Permo Metal point gives long life. MICROSPPECTED for uniformity and packed in a special protective metal container.



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TO INSURE PERFECT PERFORMANCE
 Every Permo Point Needle sold is subjected to the rigid Permo MICROSPJECTION process before it leaves the Permo laboratories. This process is a positive check on the precious Permo Metal point for uniformity and performance. The above and other Permo Point Needles for Professional and home use are available at all leading suppliers.

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Outstanding Recording Values RK RECORDER Another First by REK-O-KUT



This NEW assembly is one of the outstanding values for 1940. It is the FIRST recorder with a 12" OVERHEAD FEED to be offered in a price range that is lower than that of other recognized professional instruments.

This value is only made possible by the use of the nationally famous "REK-O-KUT" Mechanism hailed by the professional and amateur for its accurate and trouble-free performance.

SPECIFICATIONS: Designed for use with your own amplifier or radio, equipped with 8 ohm cutter. RECORDING 100 LINES TO THE INCH. Records inside out. Available outside in at no extra cost.

Dimensions: — 19 x 17½ x 10½; weight—30 lbs., consists of portable case, overhead feed mechanism, governor controlled motor, weighted turntable, crystal Pickup. Available at either 78 r.p.m. or 33 1/3 r.p.m.

RK RECORDER... \$69.50

REK-O-KUT Recording Mechanism PATENT PENDING

Consists of a spindle and worm gear, driven at the center of the turntable, feed screw, cutting head mount and High Fidelity cutting head. The cutter impedance of 8 ohms matches the secondary of the output transformer and cooperates with less than 2 volts driving power from your own amplifier. Standard units are equipped with either 8 or 500 ohm cutting heads. Other impedances on special order.

The mechanism is constructed so that it can be attached easily and aligned with the turntable without any extensive mechanical changes, and can be operated at either 33 1/3 or 78 r.p.m.

SPECIAL EQUIPMENT—Turntables, feed screws, etc., made to order to your specifications. Feedscrews—120 lines per inch can be made to order for the Rek-O-Kut mechanism.
ACCESSORIES—Write for literature describing our complete line of recording discs and accessories.

DEALER'S NET PRICE

R12	\$29.55
R16	36.00
RK recording motor with heavy 12-inch turntable	18.00
C-3 Cutter	9.50

REK-O-KUT CORPORATION
 254 CANAL STREET • NEW YORK, N. Y. • Cables: MORHANS

**RECORDING EQUIPMENT &
BLANKS—Cont.**

ALLIANCE MFG. CO., Alliance, Ohio—M, TT
 ALLIED RECORDING PRODUCTS CO., 21-09 43rd Ave., Long Island City, N. Y.—CH, D, M, CN, RM, RS, S, TT
 AMPLITONE PRODUCTS CO., 135 Liberty St., New York, N. Y.—CH, D, M, CN, RM, RS, S, TT
 AUDIO DEVICES, INC., 1600 Broadway, New York, N. Y., "Audiodesics", "Audiopoints"—D, CN, RS
 AUDIODISCS—Audio Devices
 AUDIOPOINTS—Audio Devices, Inc.
 AUDIOGRAPH—John Meck Industries
 BATEMAN SOUND SYSTEMS, 680 Johnston St., Akron, Ohio—RM, RS, S, TT
 BELFONE—Bell Sound Systems, Inc.
 BELL SOUND SYSTEMS, INC., 1183 Essex Ave., Columbus, Ohio, "Belfone"—D, CN, RM
 DAVID BOGEN CO. INC., 663 Broadway, New York, N. Y.—RM
 BROWN ELECTRIC CO., 65 Atlantic Ave., Rochester, N. Y.—CH, RM, TT

BRUSH DEVELOPMENT CO., 3311 Perkins Ave., Cleveland, Ohio—CH, CN, MT
 DE VRY CORP., 1111 Armitage Ave., Chicago, Ill.—RM, RS
 DUPLEX RECORDING DEVICES CO., 514 W. 36th St., New York, N. Y.—M, RM, RS, S, TT
 DURALITE—Musicraft Records, Inc.
 ELECTRICAL INDUSTRIES MFG. CO., Red Bank, N. J.—CH, D, M, CN, RM, RS, S, TT
 FAIRCHILD AERIAL CAMERA CORP., 88-06 Van Wyck Blvd., Jamaica, L. I., N. Y., "Fairchild"—CH, D, CN, RM, RS, TT
 FEDERAL RECORDER CO. INC., 50 W. 57th St., New York, N. Y.—D, CN, RM
 FLEX RECORD CO., 9 Rockefeller Plaza, New York, N. Y.—D, CN, RM, RS
 FLOCK PROCESS CORP., 17 W. 31st St., New York, N. Y.—Turntables flocked
 M. A. GERETT CORP., 2947 N. 30th St., Milwaukee, Wis.—CN
 GENERAL INDUSTRIES CO., 3537 Taylor St., Elyria, Ohio—M, TT
 JOHN MECK INDUSTRIES, 1313 W. Randolph St., Chicago, Ill., "Audiograph"—CH, RM
 MILES REPRODUCER CO., INC., 812 Broadway, New York, N. Y.—D, CN
 MIRROR RECORD CORP., 58 W. 25th St., New York, N. Y.—D, CN, RM, RS, TT
 MUSICRAFT RECORDS, INC., 10 W. 47th St., New York, N. Y., "Duralite"—D, CN
 NASH RADIO PRODS. CO., 6267 Gravois Ave., St. Louis, Mo.—M, CN, RS
 PERMO POINT—Permo Products Corp.
 PERMO PRODUCTS CORP., 6415 Ravenswood Ave., Chicago, Ill., "Permo Point"—CN, RS
 PHONOGRAPH NEEDLE MFG. CO., INC., 42 Dudley St., Providence, R. I.—CN
 POINSETTIA, INC., Pitman, N. J.—D, RM, RS
 PRESTO RECORDING CORP., 242 W. 55th St., New York, N. Y., "Presto"—D, CN, RM
 RADIO ENGINEERING LABS, INC., 35-54 36th St., Long Island City, N. Y.—TT
 RADIOTONE, INC., 7356 Melrose Ave., Hollywood, Calif.—CH, D, M, CN, RM, RS, S, TT
 RANGERTONE, INC., 201 Verona Ave., Newark, N. J., D, CN, RM
 RCA MFG. CO., Front & Cooper Sts., Camden, N. J., "RCA"—CH, D, M, CN, RM, RS, S, TT
 RECOTON CORP., 178 Prince St., New York, N. Y.—D, CN, RS
 REK-O-KUT CORP., 254 Canal St., New York, N. Y.—M, CN, RM, S, TT
 REMLER CO., LTD., 2101 Bryant St., San Francisco, Calif., "Remler"—RM
 SOUND APPARATUS CO., 150 W. 46th St., New York, N. Y.—CH, D, M, CN, RM, RS, TT
 SOUND DEVICES CO., 160 E. 116th St., New York, N. Y.—D
 SPEAK-O-PHONE RECORDING & EQUIPMENT CO., 23 W. 60th St., New York, N. Y., "Speakophone"—CH, D, M, CN, RM, RA, RS, TT
 TALKING DEVICES CO., 4451 Irving Park Blvd., Chicago, Ill.—CH
 UNIVERSAL MICROPHONE CO., Inglewood, Calif.—CH, D, M, CN, RM, RS, S, TT
 VIBRALOC MFG. CO., 1273 Mission St., San Francisco, Calif.—RM
 J. J. WARNER CO., 1244 Larkin St., San Francisco, Calif.—CH, D, RM, RS, S, TT
 WESTERN SOUND & ELECTRIC LABS. INC., 311 W. Kilbourn Ave., Milwaukee, Wisc.—CH, D, CN, RM
 WILCOX ELECTRIC CO., INC., 4014 State Line, Kansas City, Kans.—CH
 WILCOX GAY CORP., Charlotte, Mich., "Wilcox-Gay"—D, CN, RM, RS



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 65 Atlantic Avenue Rochester, New York

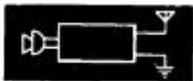


Perfect Reflection calls for A Flawless Original-- 'Mirror Records' are Consistently so!

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TRANSMITTERS & EQUIPMENT



Amateur (xmitters)	AM
Amateur kits	AK
Antennas	A
Antenna tuners	AT
Aviation (xmitters)	AV
Broadcast (xmitters)	BC
Commercial (xmitters)	COM
Control consoles	CC
Crystals	CR
Facsimile	FAC
Frequency control equip.	FC
Frequency measurements	FM
Ground screens	GS
Insulators	I
Marine (xmitters)	M
Police (xmitters)	P
Speech amplifiers	SA
Towers	T
Transmission monitor equip.	TM
Vertical radiators	VR

AIRPLANE & MARINE DIRECTION FINDER CORP., Clearfield, Pa.—AV, COM, FC, M, P, SA
 ALDEN PRODUCTS CO., 715 Center St., Brockton, Mass.—I
 ALLIED RADIO CORP., 833 W. Jackson Blvd., Chicago, Ill., "Knight"—AK, AM
 AMERICAN COMMUNICATIONS CORP., 123 Liberty St., New York, N. Y.—AM, AV, BC, COM, CC, M, P, SA
 AMERICAN LAVA CORP., Cherokee Blvd. & Manufacturers Rd., Chattanooga, Tenn.—I
 AMERICAN PHENOLIC CORP., 1250 Van Buren St., Chicago, Ill., "Amphenol"—I
 AMERICAN RADIO HARDWARE CO., 476 Broadway, New York, N. Y., "Arheo"—AK, A
 AMPHENOL—American Phenolic Corp.
 AMPLEX ENGINEERING INC., New Castle, Ind.—A (rotary beam)
 VICTOR J. ANDREW, 6429 S. Laverne Ave., Chicago, Ill.—A, AT
 ARHCO—American Radio Hardware Co.
 BASSETT RADIO MFG. CORP., Niles, Mich.—AM, A, AV, COM, M, P, SA
 BENDIX RADIO CORP., 920 E. Fort Ave., Baltimore, Md.—AV, COM, FC, FM, M, P, TM
 BIRNBACH RADIO CO., INC., 145 Hudson St., New York, N. Y.—A, I
 BLAW-KNOX CO., Blaxnox, Allegheny Co., Pa.—VR
 BLILEY ELECTRIC CO., Union Station Bldg., Erie, Pa.—FC
 BROWNING LABORATORIES, INC., 750 Main St., Winchester, Mass.—AM, AK, FM
 BUD RADIO, INC., 5205 Cedar Ave., Cleveland, Ohio—AM, AK, I
 WM. W. L. BURNETT RADIO LABORATORY, 4814 Idaho St., San Diego, Calif.—FM
 CINEMA ENGINEERING CO., 1508 S. Verdugo Ave., Burbank, Calif., "Cinema"—CC, SA, TM
 CLARION—Transformer Corp. of America
 COLLINS RADIO CO., 2920 First Ave., Cedar Rapids, Ia.—AM, A, AV, BC, COM, CC, FC, FM, I, M, P, SA, T, TM, VR
 CORNING GLASS WORKS, Walnut St., Corning, N. Y., "Pyrex"—I
 COTO-COIL CO., INC., 71 Willard Ave., Providence, R. I.—AM, I
 DAVEN CO., 158 Summit St., Newark, N. J.—TM (gain)
 DOOLITTLE & FALKNER, INC., 7421 S. Loomis Blvd., Chicago, Ill.—A, AV, BC, COM, CC, FC, FM, P, SA, TM
 D-X RADIO PRODUCTS CO., 1575 Milwaukee Ave., Chicago, Ill.—AK
 ELECTRICAL INDUSTRIES MFG. CO., Red Bank, N. J.—COM, M
 FARNSWORTH TELEVISION & RADIO CORP., 3700 Pontiac St. Extended, Fort Wayne, Ind.—AV, BC, COM, CC, FC, TM
 FEDERAL TELEGRAPH CO., 200 Mt. Pleasant Ave., Newark, N. J., "Federal"—BC, COM
 FERRANTI ELECTRIC INC., 30 Rockefeller Plaza, New York, N. Y.—AV, BC, COM, M, P, SA
 M. M. FLERON & SON, INC., 113 N. Broad St., Trenton, N. J., "Fleron"—A, I
 GALVIN MFG. CORP., 4545 Augusta Blvd., Chicago, Ill., "Motorola"—AM, A, AV, BC, COM, CC, M, P
 GENERAL ELECTRIC CO., Schenectady, N. Y.—BC, P, frequency mod., television
 THOMAS B. GIBBS & CO., 900 W. Lake St., Chicago, Ill., "Gibbs"—SA
 ROBERT M. HADLEY CO., 709 E. 61st St., Los Angeles, Calif., & P. O. Box 456, Newark, Del., "Hadley"—AK

HALLICRAFTERS, INC., 2611 S. Indiana St., Chicago, Ill., "Skyrider"—AM
 HAMMARLUND MFG. CO., INC., 424 W. 33rd St., New York, N. Y.—AK
 D. H. HARRELL, 1527 E. 74th Place, Chicago, Ill.—A, VR
 HARVEY RADIO LABS., INC., 25 Thorndike St., Cambridge, Mass., "Harvey"—AM, AV, COM, M, P, SA
 HARVEY-WELLS COMMUNICATIONS, INC., Southbridge, Mass.—AM, AV, COM, M, P
 H-B INSTRUMENT CO., INC., 2518 N. Broad St., Philadelphia, Pa.—FC
 HEINTZ & KAUFMAN, LTD., South San Francisco, Calif.—COM
 HOWARD RADIO CO., 1731 Belmont Ave., Chicago, Ill.—FM
 ICA—Insuline Corp. of America
 IDECO—International-Stacey Corp.
 ILLINOIS SEATING CORP., 2138 N. Racine Ave., Chicago, Ill.—A, VR
 INSULINE CORP. OF AMERICA, 30-30 Northern Blvd., Long Island City, N. Y., "ICA"—AM, AK, A, I
 INTERNATIONAL-STACEY CORP., International Derrick & Equip. Div., 910 Michigan Ave., Columbus, Ohio, "Ideco"—A, GS, T, VR
 ISOLANTITE, INC., 233 Broadway, New York, N. Y., "Isolantite"—I
 CHARLES F. JACOBS, 270 Lafayette St., New York, N. Y.—Antenna and feeder spreader
 JEFFERSON-TRAVIS RADIO MFG. CORP., 198 Milburn Ave., Baldwin, L. I., N. Y.—M, P
 E. F. JOHNSON, Waseca, Minn., "Johnson Q"—A
 KAAR ENGINEERING CO., 619 Emerson St., Palo Alto, Calif., "Kaar"—AM, M, P
 KENYON TRANSFORMER CO., INC., 840 Barry St., New York, N. Y.—AK
 KNIGHT—Allied Radio Corp.
 LEAR AVIATION, INC., Dayton Municipal Airport, Dayton, Ohio—AV
 JOHN E. LINGO & SON, INC., Camden, N. J.—A, T, VR
 LOCKE INSULATOR CORP., S. Charles & Cromwell Sts., Baltimore, Md.—I
 MANSLEY RADIO CORP., 182 Milburn Ave., Baldwin, N. Y.—AV, M, P
 MARINE RADIO CORP., 117-19 168th St., Jamaica, N. Y., "Marine"—AM, AV, BC, COM, M, SA
 MEISSNER MFG. CO., Mt. Carmel, Ill., "Meissner"—FC, TM
 MILES REPRODUCER CO., INC., 812 Broadway, New York, N. Y.—AM, COM, P, SA
 JAMES MILLEN MFG. CO., INC., 150 Exchange St., Malden, Mass.—AM, AK, FC, I
 MIMS RADIO CO., P. O. Box 504, Texarkana, Ark., "Signal Squirter"—AM, AK, A, I, T
 MONTGOMERY WARD & CO., 619 W. Chicago Ave., Chicago, Ill.—AM, AK, A, COM, I, SA
 MOTOROLA—Galvin Mfg. Corp.
 N-C—National Company
 NATIONAL CO., 61 Sherman St., Malden, Mass.—AM, I, TM
 NORWALK TRANSFORMER CORP., South Norwalk, Conn., "Norwalk"—AM, AV, BC, COM, M, P, SA, TM
 PIERSON-DELANE, INC., 2345 W. Washington Blvd., Los Angeles, Calif.—BC, FC, FM, P, TM
 PREMEX PRODUCTS DIV., Chisholm-Ryder Co., Inc., Niagara Falls, N. Y., "Premex"—A, T, VR
 PREMIER CRYSTAL LABS., INC., 55 Park Row, New York, N. Y.—FC, FM, TM
 PYREX—Corning Glass Works
 RADHART CORP., 13229 Shaw Ave., E. Cleveland, Ohio—A, I, VR
 RADIO ENGINEERING LABS., INC., 35-54 36th St., Long Island City, N. Y.—AV, BC, COM, M, P, TM
 RADIO MARINE CORP. OF AMERICA, 75 Varick St., New York, N. Y.—COM, M
 RADIO RECEPTOR CO., INC., 251 W. 19th St., New York, N. Y., "Radio Receptor"—A, AV, COM, CC, FC, M, P, SA, T, TM, VR

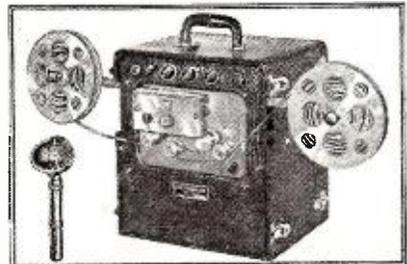
RADIO TRANSCEIVER LABS., 86-27 115th St., Richmond Hill, N. Y., "Radio Transceiver Labs"—AM, COM
 RADIO WIRE TELEVISION, INC., 100 Sixth Ave., New York, N. Y., "Trutest"—AM
 RAULAND CORP., 3333 Belmont Ave., Chicago, Ill.—AV, COM, M, P, SA
 RCA MFG. CO., Front & Cooper Sts., Camden, N. J.—A, AV, AM, BC, CC, P, SA, TM, FAC
 REMLER CO., LTD., 2101 Bryant St., San Francisco, Calif., "Remler"—SA
 SIGNAL SQUIRTER—Mims Radio Co.
 SKAGGS TRANSFORMER CO., 5894 Broadway, Los Angeles, Calif.—AM, AK, AV, BC, COM, CC, M, P, SA, TM
 SKYRIDER—Hallcrafters, Inc.
 MAXWELL SMITH CO., 1027 N. Highland Ave., Hollywood, Calif.—AM, AK, A, AV, BC, COM, CC, FC, M, P, SA, TM, VR
 STANCO—Standard Transformer Corp.
 STANDARD TRANSFORMER CORP., 1500 N. Halsted St., Chicago, Ill., "Stanco"—AK
 TECHNICAL PRODUCTS INTERNATIONAL, 135 Liberty St., New York, N. Y., "Technipower"—AM, AK, SA

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Lowest price ever for a Western-Quality combination Recorder-P.A.-Phonograph; opens up a vast, new market for aggressive merchandising

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Milwaukee, Wisconsin

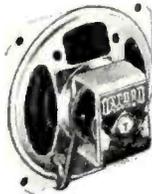
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&
Electrodynamic

Sizes

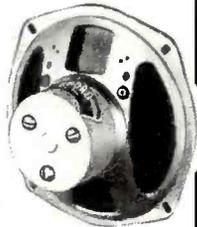
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TRANSDUCER LABORATORIES, 42 W. 48th St., New
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TRANSFORMER CORP. OF AMERICA, 69 Wooster
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TRANSMITTER EQUIPMENT MFG. CO., 130 Cedar
St., New York, N. Y., "Temeo"—AM, AV, BC,
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TRIUMPH MFG. CO., 4017 W. Lake St., Chicago,
Ill.—AV, FC, M, TM
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—AV, BC, SA
UNITED TELEPHONE CORP., 150 Varick St., New
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UTAH RADIO PRODUCTS CO., 820 Orleans St., Chi-
cago, Ill., "Utah"—AK
VIBRALOC MFG. CO., 1273 Mission St., San Fran-
cisco, Calif., "Topping"—AM, M, P, SA
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N. J.—AV, BC, COM, CC, CR, FC, M, P, SA
WESTINGHOUSE ELECTRIC CO., E. Pittsburgh, Pa.
—COM, P
WILCOX ELECTRIC CO., INC., 4014 State Line,
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Stands	ST

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Ky.—B
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ALLIED RADIO CORP., 833 W. Jackson Blvd., Chi-
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PM, ST
AMERICAN COMMUNICATIONS CORP., 123 Liberty
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AMPLITONE PRODUCTS CO., 135 Liberty St., New
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ARLAVOX MFG. CO., 430 S. Green St., Chicago, Ill.,
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BANK'S MFG. CO., 5019 N. Winthrop Ave., Chicago,
Ill.—ACC, CH, B, C, D, F, FE, GC, HF, M, PM,
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BEST MFG. CO., INC., 1200 Grove St., Irvington,
N. J.—D, F, M, PM
BRUSH DEVELOPMENT CO., 3311 Perkins Ave.,
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BUD RADIO, INC., 5205 Cedar Ave., Cleveland, Ohio
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CARRON MFG. CO., 415 S. Aberdeen St., Chicago,
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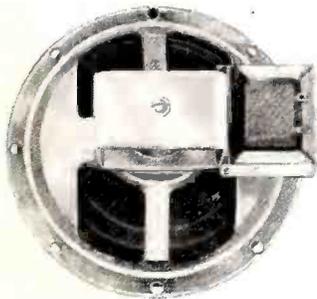
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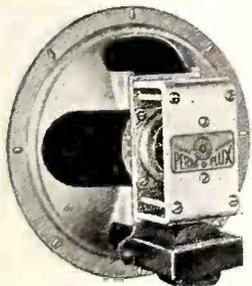
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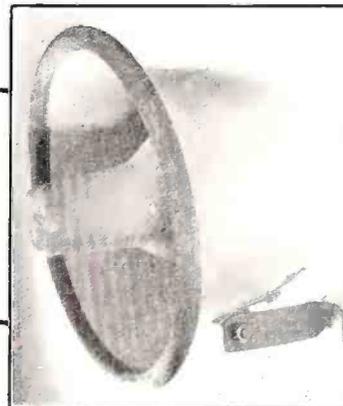
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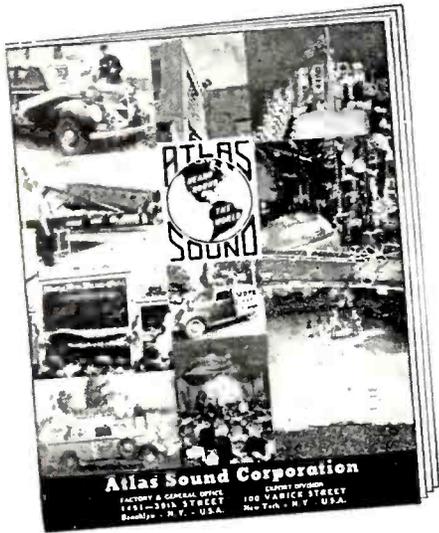
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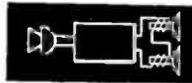
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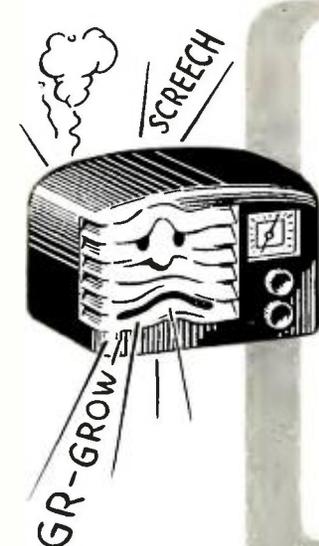
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Patent No.	Inventor	Date Issued
1,580,112	Bone, E. T.	April 13, 1920
1,886,687	Jacobs, C. T.	November 8, 1932
1,906,607	Jacobs	May 2, 1933
1,912,293	Miessner, B. F.	May 30, 1933
1,915,858	Miessner	June 27, 1933
1,915,859	Miessner & Jacobs	June 27, 1933
1,915,860	Miessner & Jacobs	June 27, 1933
1,915,861	Jacobs	June 27, 1933
1,929,027	Miessner	October 3, 1933
1,929,028	Miessner	October 3, 1933
1,929,029	Miessner	October 3, 1933
1,929,030	Miessner	October 3, 1933
1,929,031	Miessner	October 3, 1933
1,929,032	Miessner & Jacobs	October 3, 1933
1,933,294	Jacobs	October 31, 1933
1,933,295	Miessner	October 31, 1933
1,933,296	Jacobs	October 31, 1933
1,933,297	Miessner	October 31, 1933
1,933,298	Miessner	October 31, 1933
1,933,299	Vierling, O.	October 31, 1933
1,961,159	Miessner	June 5, 1934
1,963,668	Miessner & Jacobs	June 19, 1934
1,977,832	Miessner	October 23, 1934
1,979,633	Miessner	November 6, 1934
1,992,438	Miessner	February 26, 1935
2,001,391	Miessner	May 14, 1935
2,001,392	Miessner	May 14, 1935
2,007,302	Miessner	July 9, 1935
2,027,073	Vierling	January 7, 1936
2,027,074	Miessner	January 7, 1936
2,027,075	Jacobs	January 7, 1936
2,033,440	Miessner	March 10, 1936
2,045,917	Miessner	June 30, 1936
RE21,225	Miessner	October 3, 1939
2,088,205	Jacobs	July 27, 1937
2,138,500	Miessner	November 29, 1938
2,140,025	Miessner	December 13, 1938
2,165,707	Jacobs	July 11, 1939
2,168,823	Miessner	August 8, 1939
2,187,611	Miessner	January 16, 1940
2,187,612	Miessner	January 16, 1940

and numerous pending patents.

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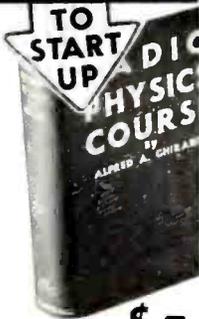


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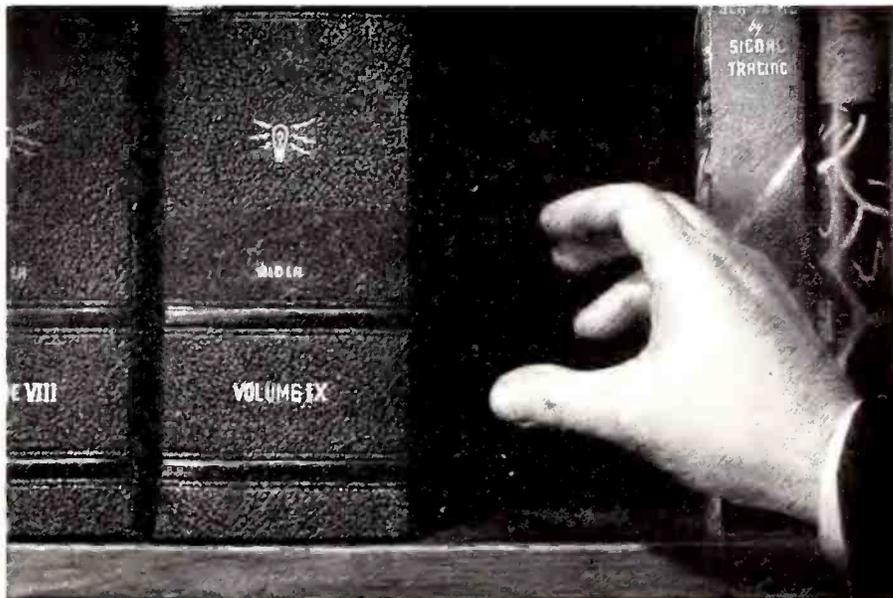
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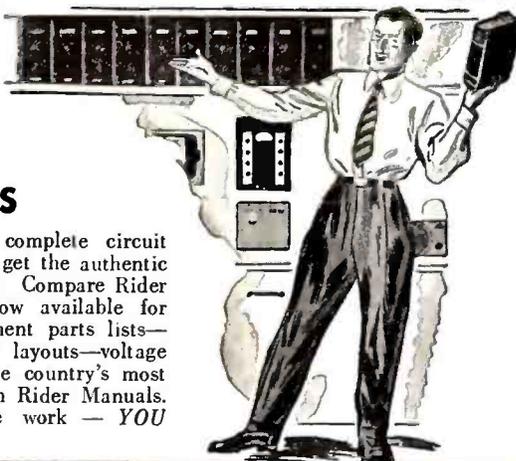
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Circuit breakers	CB
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Electric eyes	EE
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Power	P
Protective	PR
Push button	PB
Relays	R
Switch keys	SK
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Time	TE
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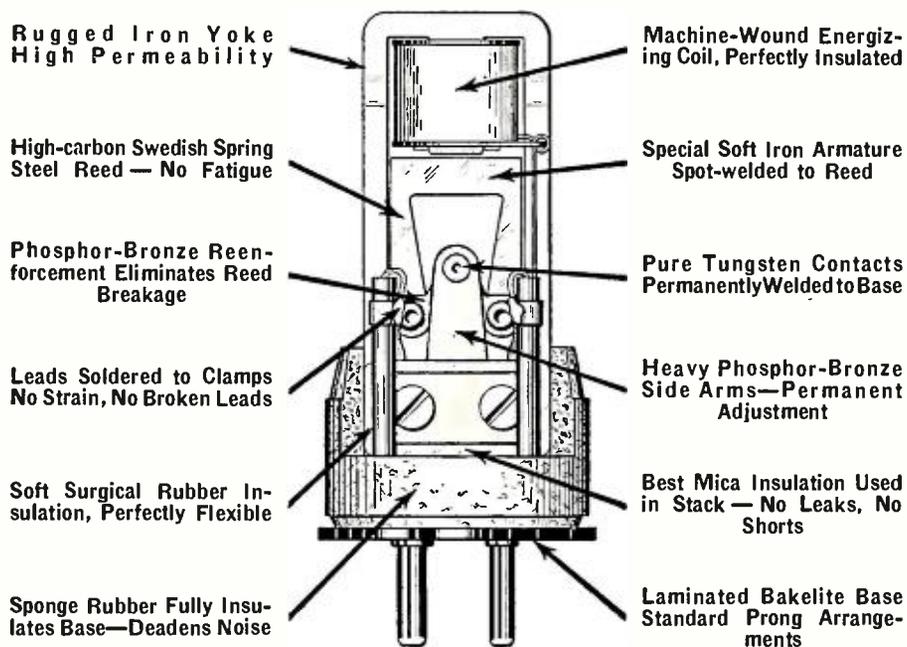
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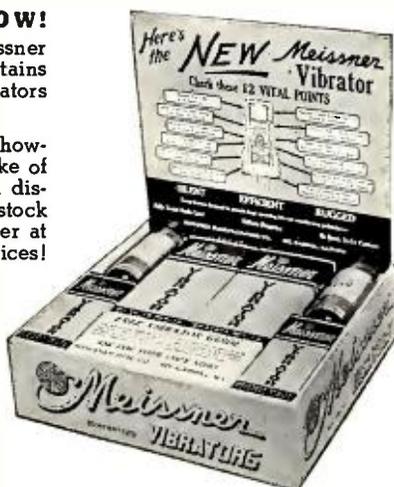
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 HEINEMANN CIRCUIT BREAKER CO., 610 Plum St., Trenton, N. J.—CB
 HEINTZ & KAUFMAN, LTD., South San Francisco, Calif.—WT
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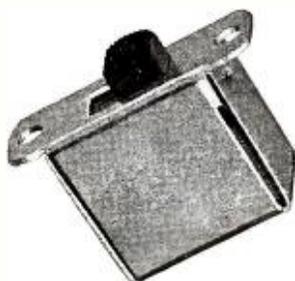


Auto radio A
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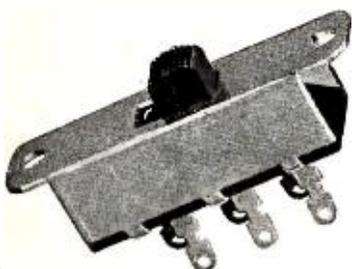
TYPE SS 1A



TYPE SS 1



TYPE SS 3



TYPE SS 3A



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TYPE SS-1A is identical with SS-1 except it has a snap-on shield approved by the Underwriters' as a terminal enclosure.

Type SS-3 is a double pole double throw switch which suggests itself for the following uses:

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City State

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RT-340

YOUR 50 PROSPECTS FOR "SOUND"—WHAT AND WHY THEY BUY

—Where to go and what to say—

—the products in demand—

SUGGESTED SELLING ARGUMENTS	TYPE OF INSTALLATION	Microphone	Extra mikes	Contact mikes	Stands for mikes	Permanent amplifier	Portable amplifier	Mobile amplifier	Pre-amplifier	Remote amplifier control	Centralized control-distribution system	Horn speakers	Cabinet speakers	Built-in speakers	Stands for speakers	2-way intercommunicator	Chimes	Turntable and pick-up	Recording machine	Radio	Wireless record player	Class engine generator
Accommodate more passengers	Advertising trucks	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Amplify individual instruments	Airports	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Announce schedules	Alarm systems	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Attract larger audiences	Athletic fields	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Better supervision	Auction rooms	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Broadcast advertisements	Audition studios	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Broadcast messages	Auditoriums	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Connect all rooms	Band stands	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Control crowds	Bathing beaches	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Create pleasant atmosphere	Beer gardens	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Decrease complaints	Cabarets	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Demonstrate more equipment	Cemeteries	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Distribute radio programs	Churches	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Enforce safety measures	Civic centers	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Explain displays	Colleges	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Execute orders faster	Courts	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Feature soloists	Dance halls	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Flash news bulletins	Eating places	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Foster musical appreciation	Exchanges	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Furnish pleasing chimes	Exhibitions	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Give instructions accurately	Factories	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Handle crowds easily	Fairs	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Improve labor relations	Gymnasiums	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Increase "hearing" capacity	Hospitals	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Inform participants	Hotels	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Instruct spectators	Lawns	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Keep guests happy	Lodges	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Make it easier for speakers	Markets	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Meet emergencies	Military posts	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Offer faster service	Naval bases	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Overcome poor acoustics	Offices	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Pinch-hit for live talent	Orchestras	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Promote safety	Playgrounds	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Provide for overflow crowds	Prisons	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Publicize features	Race tracks	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Reduce loss risks	Schools (classrooms)	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Reduce policing costs	Ships	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Regulate discipline	Skating rinks	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Report scores promptly	Sound trailers	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Save time for patrons	Sporting clubs	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Simplify entertainment work	Stadiums	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Social relations improved	Steamship piers	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Stage special sales	Stores	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Stop thieving	Swimming pools	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Supply background music	Talking displays	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Use sound effects	Theaters	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Widen space of activity	Transportation terminals	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
	Undertaking parlors	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
	Weighing stations	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
	Yacht clubs	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
	Yards	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A



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SMALL TUBING!

Superior makes the jewel-like tubing that is used in every type of electron tube needing cathode sleeves.

In radio, television, communication and motion pictures—in every scientific use of the electron tube—much depends upon the almost invisible piece of precision—the SUPERIOR CATHODE SLEEVES, of pure nickel, made in Seamless and Lockseam types.

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Our undivided attention has been given the entire field of metals and alloys which can be, or should be, drawn to small sizes. As each new analysis is added to the list, the peculiarities in handling are solved, so that there are no metallurgical problems when production displaces experimental work.

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VIBRATORS—Cont.

ATR—American Television & Radio Corp.
DELCO—United Motors Service
ELECTRICAL PRODUCTS CO., 6535 Russell St., Detroit, Mich.—A, F, INV
ELECTRONIC LABORATORIES, INC., 122 W. New York St., Indianapolis, Ind.—INV, VP
GALVIN MFG. CORP., 4545 Augusta Blvd., Chicago, Ill., "Motorola"—A
KNIGHT—Allied Radio Corp.
P. R. MALLORY & CO., 3029 E. Washington St., Indianapolis, Ind., "Mallory"—A, F, INV, VP
MEISSNER MFG. CO., Mt. Carmel, Ill.—A, F
MOTOROLA—Galvin Mfg. Corp.
OAK MFG. CO., 1260 Clybourn Ave., Chicago, Ill., "Oak"—A, F
THE RADIART CORP., 13229 Shaw Ave., E. Cleveland, Ohio—A, F
UNITED MOTORS SERVICE, 3044 W. Grand Blvd., Detroit, Mich., "Delco"—A, F
UTAH RADIO PRODUCTS CO., 820 Orleans St., Chicago, Ill.—A, F

TUBES & PARTS



Ballast (regulating)	B
Cathode-ray	CR
Electron multiplier	EM
Industrial	I
Photo cells	PC
Receiving (including rectifiers)	R
Television	TV
Transmitting	T
Tube machinery	TM
Tube parts	TP
Voltage control	VC

ALLIED RADIO CORP., 833 W. Jackson Blvd., Chicago, Ill., "Knight"—B, R
AMERICAN LAVA CORP., Cherokee Blvd. & Manufacturers Rd., Chattanooga, Tenn.—TP
AMERICAN RADIO HARDWARE CO., 476 Broadway New York, N. Y., "Arhco"—TP
AMERICAN TELEVISION CORP., 130 W. 56th St., New York, N. Y.—CR, TT
AMPEREX ELECTRONIC PRODUCTS CORP., 79 Washington St., Brooklyn, N. Y., "Amperex"—I, PC, T
AMPERITE CO., 561 Broadway, New York, N. Y., "Amperite"—B, VC
AMPLITONE PRODUCTS CO., 135 Liberty St., New York, N. Y.—R
ARCO TUBE CO., 227 Central Ave., Newark, N. J.—R, T
ARCTURUS RADIO TUBE CO., 720 Frelinghuysen Ave., Newark, N. J., "Arcturus"—R, TT
ARHCO—American Radio Hardware Co.
ART RADIO CORP., 135 Liberty St., New York, N. Y.—R
CHAMPION RADIO WORKS, Div. of Consolidated Electric Lamp Co., Danvers, Mass., "Champion"—R
COLLINS RADIO CO., 2920 First Ave., Cedar Rapids, Ia.—R, T
CUNNINGHAM—RCA Mfg. Co.
THE CROSLEY CORP., 1329 Arlington St., Cincinnati, Ohio—R
DE VRY CORP., 1111 Armitage Ave., Chicago, Ill.—PC
WILBUR B. DRIVER CO., 150 Riverside Ave., Newark, N. J.—TP
ALLEN B. DuMONT LABS., INC., Passaic, N. J.—CR, TT
HUGH H. EBY, INC., 4700 Stenton Ave., Philadelphia, Pa.—PC
EIMAC—Eitel-McCullough, Inc.
EISLER ELECTRIC CORP., 534 39th St., Union City, N. J.—I, TT, TM
EITEL-McCULLOUGH, INC., 798 San Mateo Ave., San Bruno, Calif., "Eimac"—I, T
ELECTRONIC PRODUCTS CO., St. Charles, Ill.—PC
FARNSWORTH TELEVISION & RADIO CORP., 3700 Pontiac St., Extended, Port Wayne, Ind.—CR, EM, TT, T
FEDERAL TELEGRAPH CO., 200 Mt. Pleasant Ave., Newark, N. J., "Federal"—T
M. M. FLERON & SON, INC., 113 N. Broad St., Trenton, N. J., "Fleron"—VC
GAMMATRON—Heintz & Kaufman, Ltd.
GENERAL ELECTRIC CO., 1285 Boston Ave., Bridgeport, Conn.—R
GENERAL ELECTRIC CO., Schenectady, N. Y.—CR, I, TT, T
GOAT RADIO TUBE PARTS, INC., 314 Dean St., Brooklyn, N. Y.—TP
HEINTZ & KAUFMAN, LTD., South San Francisco, Calif., "HK" "Gammatron"—T
HK—Heintz & Kaufman, Ltd.
HYGRADE SYLVANIA CORP., 500 Fifth Ave., New York, N. Y.—CR, R, TT

What's in a Name?

When the name's CHAMPION—and the product is Radio Tubes—it means highest quality and customer satisfaction.

Champion invites your attention to its position in the industry, not merely from pride, but because of its significance to the user of Champion Radio Tubes. Ample financial resources—private ownership management—means that Champion brings to its customers the finest in Radio Tubes and an assured source of supply.

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We invite you to write us regarding any vacuum or rectifier tube problems you may have.

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HYTRONIC LABORATORIES, 76 Lafayette St., Salem, Mass., "Hytron"—I, T
HYTRON CORP., 76 Lafayette St., Salem, Mass., "Hytron"—B, R
INTERNATIONAL NICKEL CO., INC., 67 Wall St., New York, N. Y.—TP
ISOLANTITE, INC., 233 Broadway, New York, N. Y., "Isolantite"—TP
J. F. D. MFG. CO., 4111 Ft. Hamilton Pkwy., Brooklyn, N. Y., "JFD"—B, VC
KAHLE ENGINEERING CORP., 941 De Mott St., North Bergen, N. J.—TM
KEN-RAD TUBE & LAMP CORP., INC., Owensboro, Ky., "Ken-Rad"—R
KING LABORATORIES, INC., 205 Onelda St., Syracuse, N. Y.—TP
KNIGHT—Allied Radio Corp.
NATIONAL UNION RADIO CORP., 57 State St., Newark, N. J., "National Union"—CR, I, PC, R
PAUL & BEEKMAN, 4250 Wissahickon Ave., Philadelphia, Pa.—TP
PHILCO RADIO & TELEVISION CORP., Tioga & C Sts., Philadelphia, Pa.—R
PHOTRONIC—Weston Electrical Instrument Corp.
RADIOTRON—RCA Mfg. Co.
RAYTHEON PRODUCTION CORP., 55 Chapel St., Newton, Mass.—R, T
RCA MFG. CO., Front & Cooper Sts., Camden, N. J., "RCA Radiotron," "RCA-Victor," "Cunningham"—B, CR, I, PC, R, TT, T, VC (special purpose)
SIGMUND COHN, 44 Gold St., New York, N. Y.—TP
SILCOX RADIO & TELEVISION CORP., 60 Wall Tower, New York, N. Y.—B, R
SPARKS-WITHINGTON CO., E. Ganson Ave., Jackson, Mich., "Sparton"—R
SPARTON—Sparks-Withington Co.
SPEER RESISTOR CORP., St. Marys, Pa.—TP
SUPERIOR TUBE CO., Norristown, Pa.—TP
SYLVANIA—Hygrade Sylvania Corp.
TAYLOR TUBES, INC., 2341 Wabansia Ave., Chicago, Ill., "Taylor"—I, T
TRIAD MFG. CO., INC., Blackstone & Fountain Sts., Pawtucket, R. I. "Triad"—R
TUNG-SOL LAMP WORKS INC. Radio Tube Div. 95 8th Ave., Newark, N. J., "Tung-Sol"—R
UNITED ELECTRONICS CO., 42 Spring St., Newark, N. J.—I, T
VACUTRON, INC., 2819 12th St., S., Arlington, Va.—CR, I, PC, R, TT, T, VC
VICTOR—RCA Mfg. Co.
WESTERN ELEC. CO., 300 Central Ave., Kearny, N. J.—B, CR, I, PC, T, VC
WESTINGHOUSE ELECTRIC SUPPLY CO., 150 Var- ick St., New York, N. Y., "Westinghouse"—I
WESTON ELECTRICAL INSTRUMENT CORP., 614 Frelinghuysen Ave., Newark, N. J., "Photronic"—PC
ZENITH RADIO CORP., 6001 Dickens Ave., Chicago, Ill., "Zenith"—R

Reps Lined Up By Pleasantaire

The list of district representatives for Pleasantaire Corp., Tower Bldg., Washington, D. C., makers of window-type summer air conditioning units, has been announced for 1940:

H. C. Guterman, 687 Boylston St., Boston; John V. Blake, 250 N. 11th St., Philadelphia; R. G. Klemeyer, 1401 K St. Northwest, Washington, D. C.; Fred H. Sides, 415 W. Fourth St., Charlotte, N. C.; Brower Murphy, 291 Peachtree St. N.E., Atlanta; John Cota, same address; James C. Erback, P. O. Box 1654, Ft. Lauderdale, Fla.; H. A. Daum, 2116 East St., Pittsburgh, Pa.; Charles H. Dolfuss, 21st and Payne Ave., Cleveland; Charles A. Pipenhagen, 4115 Ravenswood Ave., Chicago; L. J. Heran, 211 N. 7th St., St. Louis, Mo.; William Bailey, 323 Brush Creek Blvd., Kansas City, Mo.; O. K. Spurrier, Spurrier's, Inc., Oklahoma City, Okla.; T. E. Hafer, 707 S. Ervay St., Dallas, Tex.; Leonard C. Kohn, 422 Wilkinson Bldg., Omaha, Neb.; Albert Baldwin, 621 Celeste St., New Orleans, La.; Wallace R. Lynn, 2048 Market St., San Francisco, Calif.; J. J. Perlmut, 225 E. Pice St., Los Angeles, and R. A. Adams, 9440 Dexter Blvd., Detroit.

New Exec at Ansley

Ernest J. Adams has been named vice-president and general manager of Ansley Radio Corp., 4377 Bronx Blvd., New York, N. Y., according to news from Arthur C. Ansley, president of the company.

FOR THOSE WHO WANT THE BEST

OUR 20TH YEAR! OF MAKING RADIO TUBES

Up here on the rock bound New England Coast we have been manufacturing radio tubes exclusively for 19 years. As time goes, that isn't very long—but in this instance it bridges the entire life span of the Radio Industry itself!

During these years we have seen tube companies come and go... yet HYTRON has quietly, unobtrusively grown—always pioneering better designs, new constructions, new ideas. With native Yankee shrewdness, policy has directed a slow but sturdy growth—out of profits; nominal profits accrued from honestly merchandising an honest product.



Such growth naturally is conducive to producing fruit in kind as witness the BANTAM* GT (the present preferred type of tube construction) which was originated by HYTRON. Today this modern GT type of tube is being produced by all manufacturers.

BANTAM - 50

And on the advent of our 20th year, HYTRON scores again with the Bantam-50** cabinet assortment which has been designed to solve the dealer's and service-men's tube stock problem... an idea that has become a success over night.

HYTRONIC LABORATORIES DIV.

Another development from the laboratories of our experience has been the Bantam Junior—the first, practical miniature tube now used by many leading hearing-aid manufacturers. Bantam Juniors are now just two years old—past the critical stage, a lusty offspring.

Hytronic Laboratories boast a completely Hytron-designed line of medium and small-size power tubes for both transmitter and diathermy applications as well as tubes for specialized receiving and industrial uses, made to specifications.

LEADERSHIP

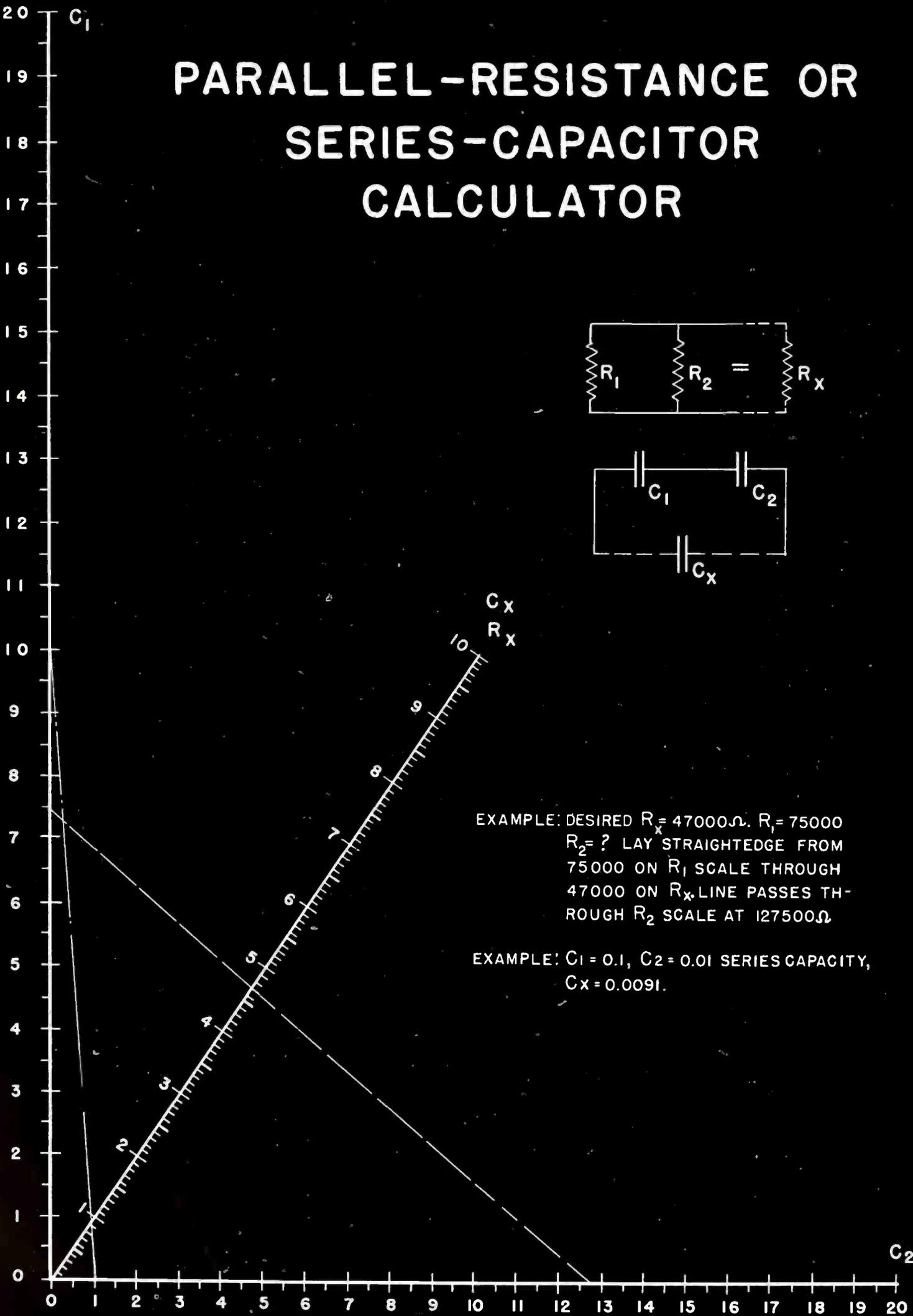
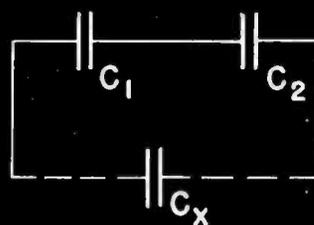
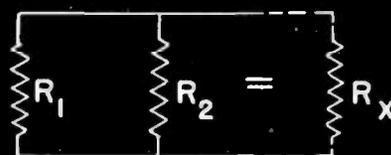
These, then, are the facts. Proof of Leadership is not so much a matter of size but rather of integrity. Our customers in every part of the world recognize our KIND of leadership. In this recognition lies much of the success which has brought us over the road from those early days in 1921 when Bruce and Lloyd Coffin started making a few tubes a day to the present modern Hytron Organization of 750 employees.

*Trade Name Registered

**Bantam-50 assortment of 50 fast-selling types complete with cabinet costs \$23.15.



PARALLEL-RESISTANCE OR SERIES-CAPACITOR CALCULATOR



EXAMPLE: DESIRED $R_x = 47000\Omega$. $R_1 = 75000$
 $R_2 = ?$ LAY STRAIGHTEDGE FROM
 75000 ON R_1 SCALE THROUGH
 47000 ON R_x LINE PASSES TH-
 ROUGH R_2 SCALE AT 127500 Ω

EXAMPLE: $C_1 = 0.1$, $C_2 = 0.01$ SERIES CAPACITY,
 $C_x = 0.0091$.

SERVICING EQUIPMENT

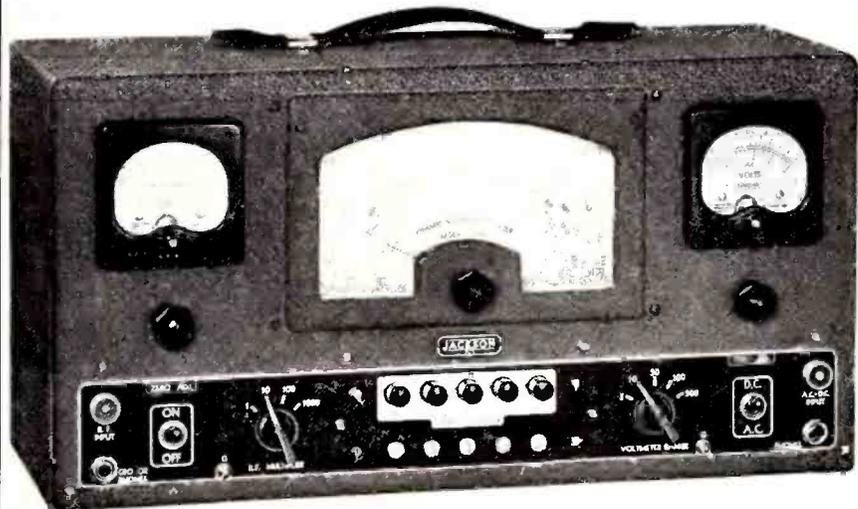
Adapters	AD
Audio oscillators	AO
Cabinet touch-up kit	CU
Cathode ray oscillographs	CRO
Condenser testers	CT
Contact cleaner	CF
Crystal calibrators	CC
Decade boxes (resistance)	DB
Dial oil	DO
Dummy antenna	DA
Frequency meters	FM
Impedance bridges	IB
Instrument fuses	F
Meters	M
Multi-meters	MM
Neon indicators	NI
Osc. frequency modulators	MOD
Ohmmeters	OHM
Output indicators	OI
Resistance bridges	RB
Set analyzers	SA
Signal generators	SG
Signal tracers	ST
Speaker testers	SPK
Tube testers	TT
Tuning wands	TW
Vacuum tube voltmeters	VTV
Vibrator testers	VT

AEROVOX CORP., 740 Belleville Ave., New Bedford, Mass., "L-C Checker"—CT, FM, SA
 AIRPLANE & MARINE DIRECTION FINDER CORP., Clearfield, Pa.—FM
 ALDEN PRODUCTS CO., 715 Center St., Brockton, Mass.—AD
 AMERICAN COMMUNICATIONS CORP., 123 Liberty St., New York, N. Y.—AO
 AMERICAN PHENOLIC CORP., 1250 Van Buren St., Chicago, Ill., "Amphenol"—AD
 AMERICAN RADIO HARDWARE CO., 476 Broadway, New York, N. Y., "Arhco"—AD, TW
 AMPHENOL—American Phenolic Corp.
 ANALYST—Meissner Mfg. Co.
 VICTOR J. ANDREW, 6429 S. Laverne Ave., Chicago, Ill.—SG
 APPROVED TECHNICAL APPARATUS CO., 123 Liberty St., New York, N. Y.—CT, MM, OHM, RB, SA, SG, ST, TT, VTV
 ARHCO—American Radio Hardware Co.
 ASSOCIATED RESEARCH, INC., 16 N. May St., Chicago, Ill.—CT, DB, FM, IB, M, MM, NI, OHM, RB, SA, SPK, TT, VTV, VT
 AUDIOGRAPH—John Meck Industries
 AUDOLYZER—Supreme Instruments Corp.
 BLILEY ELECTRIC CO., Union Station Bldg., Erie, Pa.—CC
 BROWNING LABORATORIES, INC., 750 Main St., Winchester, Mass.—FM
 BUD RADIO, INC., 5205 Cedar Ave., Cleveland, Ohio, "Bud"—AD
 WM. W. L. BURNETT RADIO LABORATORY, 4814 Idaho St., San Diego, Calif.—CC, FM
 BURTON-ROGERS CO., 857 Boylston St., Boston, Mass., "Hoyt," "Burton-Rogers"—M
 CHANALYST—RCA Mfg. Co.
 CLOUGH-BREngle CO., 5501 N. Broadway, Chicago, Ill., "Clough-Brengle"—AO, CRO, CT, FM, MM, MOD, OHM, RB, SA, SG, SPK, TT, VT
 CONSOLIDATED WIRE & ASSOC. CORPS., Peoria & Harrison Sts., Chicago, Ill.—CT, OI, RB, TT
 CORNELL-DUBILIER ELEC. CORP., 1000 Hamilton Blvd., S. Plainfield, N. J.—CT
 DAVEN CO., 158 Summit St., Newark, N. J.—DB, IB, OI, RB
 DAYCO RADIO CORP., 915 Valley St., Dayton, Ohio—SG, TT
 DAYTON ACME CO., 2339 Gilbert Ave., Cincinnati, Ohio—AO, CRO, MOD, OHM, SA, SG, ST, TT, VTV
 DEPENDABLE—Radio City Products Co., Inc.
 DETERMOHM—Ohmite Mfg. Co.
 TOBE DEUTSCHMANN CORP., Canton, Mass.—CT, IB, RB
 ALLEN B. DU MONT LABS., INC., Passaic, N. J.—CRO
 DYNALYZER—Radio Instrument Mfg. Co.

EXAM-ETER—Solar Mfg. Corp.
 EXCEL—Hickok Electrical Instrument Co.
 FERRANTI ELECTRIC INC., 30 Rockefeller Plaza, New York, N. Y., "Ferranti"—Electrostatic voltmeter.
 FERRIS INSTRUMENT CORP., Boonton Ave., Boonton, N. J., "Ferris"—CC, SG
 GENERAL CEMENT MFG. CO., 1041 Kilburn Ave., Rockford, Ill.—CU, DO
 THOMAS B. GIBBS & CO., 900 W. Lake St., Chicago, Ill.—AO, CC
 HEWLETT-PACKARD CO., 367 Madison Ave., Palo Alto, Calif.—AO
 HICKOK ELECTRICAL INSTRUMENT CO., 10514 Dupont Ave., Cleveland, Ohio, "Excel," "Hickok"—AO, CRO, CT, FM, M, MM, MOD, OHM, OI, SA, SG, SPK, TT, VTV, VT
 HOYT—Burton-Rogers Co.
 ICA—Insuline Corp. of America
 INSULINE CORP. OF AMERICA, 30-30 Northern Blvd., Long Island City, N. Y., "ICA"—AD, AO, M, TW, VTV, VT
 JACKSON ELECTRICAL INSTRUMENT CO., 129 Wayne Ave., Dayton, Ohio, "Jackson"—CRO, CT, MM, MOD, OHM, SA, SG, ST, TT

JONES-ORME CO., 2233 University Ave., St. Paul, Minn.—AO, CRO, SG
 L-C CHECKER—Aerovox Corp.
 LITTLEFUSE, INC., 4757 Ravenswood Ave., Chicago, Ill.—F, NI
 MARION ELECTRICAL INSTRUMENT CO., Manchester, N. H., "Marion"—M
 JOHN MECK INDUSTRIES, 1313 W. Randolph St., Chicago, Ill., "Meck," "Audiograph"—AO, OHM, OI, RB, SA, SG, SPK, VT
 MEISSNER MFG. CO., 7th & Belmont, Mt. Carmel, Ill.—CC, ST, TW
 MILLION RADIO & TELEVISION LABORATORIES, 685 W. Ohio St., Chicago, Ill., "Million"—AD, AO, MM, OHM, OI, SA, SG, ST, TT, VTV
 MONARCH MFG. CO., 3341 Belmont Ave., Chicago, Ill., "Monarch"—SG
 MUTER CO., 1255 S. Michigan Ave., Chicago, Ill., "Muter"—DB, RB
 TED NAGLE EQUIPMENT CORP., General Motors Bldg., Detroit, Mich.—CRO
 OHMITE MFG. CO., 4825 W. Fluornoy St., Chicago, Ill., "Determohm"—DB, DA

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JACKSON MODEL 660 Dynamic Signal Analyzer

This amazing radio signal analyzer gives you full and complete tests, yet it is actually simple and easy to use. Shows ALL results instantly on direct reading meters. Checks signals, stage by stage, from antenna to speaker, using the improved Jackson DYNAMIC* method. Saves hours of work and solves the toughest service problems.

Not only does it do the COMPLETE job of signal testing, but it

makes all tests without disturbing receiver operation. Model 660 quickly finds those "hard-to-locate" troubles. Tests for AVC and AFC voltages, noise, hum, oscillator operation, antenna efficiency, gain per stage, etc.

Has complete built-in vacuum tube voltmeter. Ranges AC and DC to 500 volts. Price only \$79.50 complete.

Ask your Jobber for FREE DEMONSTRATION today!

*Trade-mark Reg.



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SERVICING EQUIPMENT—Cont.

PHILCO RADIO & TELEVISION CORP., Tioga & C Sts., Philadelphia, Pa.—AO, MM, OI, SG, SPK, TT
 POTTER CO., 1950 Sheridan Rd., North Chicago, Ill.—CT
 PRECEPTOR ELECTRICAL EQUIPMENT, 301 Hubbard Bldg., Pontiac, Mich., "Preceptor"—TT
 PRECISION APPARATUS CO., 647 Kent Ave., Brooklyn, N. Y., "Precision"—MM, OHM, SA, SG, TT, VTV
 THE RADIART CORP., 13229 Shaw Ave., E. Cleveland, Ohio—VT

RADIO CITY PRODUCTS CO., INC., 88 Park Pl., New York, N. Y., "Dependable"—AD, AO, CRO, CT, MM, OHM, OI, RB, SA, SG, ST, TT, VTV
 RADIO DESIGN CO., 1353 Sterling Pl., Brooklyn, N. Y., "Radio Design"—CT, MM, OHM, OI, SA
 RADIO ENGINEERING LABS., INC., 35-54 36th St., Long Island City, N. Y.—FM, SG
 RADIO INSTRUMENT MFG. CO., 1131 Terry Rd., Jackson, Miss., "Rimco"—FM, MM, OHM, ST, VTV
 RADIOTECHNIC LABORATORY, 1328 Sherman Ave., Evanston, Ill., "R-T-L"—TT
 R-T-L—Radiotechnic Laboratory
 RANGER-EXAMINER—Readrite Meter Works
 RCA MFG. CO., Front & Cooper Sts., Camden, N. J., "RCA"—AD, AO, CRO, CT, CC, FM, NI, MOD, OI, RB, SG, ST, TT, TW, VTV
 READRITE METER WORKS, 136 E. College Ave., Bluffton, Ohio, "Ranger-Examiner," "Readrite"—AD, CRO, CT, M, MM, OHM, OI, SA, SG, TT
 RIMCO—Radio Instrument Mfg. Co.
 ROTO-RANGER—Simpson Electric Co.
 WALTER L. SCHOTT CO., 5264 W. Pico Blvd., Los Angeles, Calif., "Walsco"—CU, DO, CF
 SHALLCROSS MFG. CO., 10 Jackson Ave., Collingdale, Pa., "Shallcross"—DB, IB, MM, OHM, OI, RB, SA
 SIGNALIZER—Million Radio & Telev. Labs.
 SIGNALYST—RCA Mfg. Co.
 SIMPSON ELECTRIC CO., 5216 W. Kinzie St., Chicago, Ill., "Simpson," "Roto-Ranger"—M, MM, OHM, SA, SG, TT
 SOLAR MFG. CORP., Bayonne, N. J., "Solar"—CT
 SPRAGUE PRODUCTS CO., N. Adams, Mass., "Tel-Ohmike"—CT
 STANDARD TECHNICAL DEVICES, INC., 3008 Ave. M, Brooklyn, N. Y.—High voltage test leads
 SUNDT ENGINEERING CO., 4757 Ravenswood Ave., Chicago, Ill.—NI, TW
 SUPERIOR INSTRUMENTS CO., 136 Liberty St., New York, N. Y.—CT, M, MM, OHM, OI, SA, SG, ST, TT
 SUPREME INSTRUMENTS CORP., 414 Howard St., Greenwood, Miss., "Supreme"—AD, AO, CRO, CT, DB, IB, M, MM, MOD, OHM, OI, RB, SA, SG, ST, TT, VTV
 TACO—Technical Appliance Corp.
 TECHNICAL APPLIANCE CORP., 17 E. 16th St., New York, N. Y., "Taco"—OI
 TEFFT RADIO CO., Plymouth, Mich.—AO, CT, FM, IA, MOD, SA, SG, TT
 TELEVISO CO., 341 N. Pulaski Rd., Chicago, Ill.—AO, CC, DB, SG, VTV
 TEL-OHMIKE—Sprague Products Co.
 THORPARSON ELECTRIC MFG. CO., 500 W. Huron St., Chicago, Ill.—CRO kit, VTV
 TRACEOMETER—Hickok Elec'l. Instr. Co.
 TRIPLETT ELECTRICAL INSTRUMENT CORP., 122 Main St., Bluffton, Ohio, "Triplet"—AD, AO, CRO, CT, M, MM, MOD, OHM, OI, SA, SG, ST, TT, VTV, VT
 TRIUMPH MFG. CO., 4017 W. Lake St., Chicago, Ill., "Triumph"—AD, AO, CRO, CT, IB, MM, MOD, OHM, OI, RB, SA, SG, TT, VTV, VT
 VEDOLYZER—Supreme Instruments Corp.
 WALSCO—Walter L. Schott Co.

EARL WEBBER CO., 1313 W. Randolph St., Chicago, Ill., "Webber"—AD, AO, CRO, CT, M, MM, MOD, OHM, OI, RB, SA, SG, ST, SPK, TT, TW, VT
 WESTERN ELEC. CO., 300 Central Ave., Kearny, N. J.—CRO
 WESTINGHOUSE ELECTRIC CO., Orange St., Newark, N. J.—MI, MM
 WESTON ELECTRICAL INSTRUMENT CORP., 614 Frelinghuysen Ave., Newark, N. J., "Weston"—AD, CT, M, MM, OHM, OI, SA, SG, TT, VTV
 WHEELCO INSTRUMENTS CO., 1933 S. Halsted St., Chicago, Ill.—M
 WILCOX ELECTRIC CO., INC., 4014 State Line, Kansas City, Kans.—FM

WALSCO



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- CABINET PATCHING KITS
- REFINISHING MATERIALS
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- POLISH RENEWER
- DIAL CABLES
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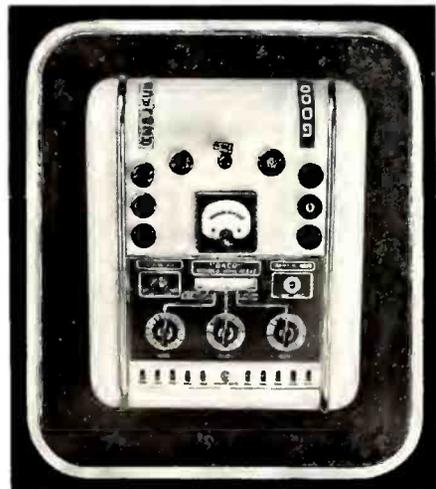
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 North Adams, Mass.

SEE DACO FIRST AND STOP LOOKING SEE DACO LAST AND BE GLAD YOU WAITED

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Portable Tube Testers

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 303 P5 DeLUXE 29.90
 303 PV DeLUXE with Voltmeter.. 29.90

Counter Tube Testers

303 C STANDARD \$19.90
 303 C5 DeLUXE 29.90
 303 VC DeLUXE with Voltmeter.. 29.90
 303 C7 DeLUXE with 7" Meter... 39.90

303 C IMPERIAL COUNTER TUBE TESTER TUBE SELLER \$39.90
 303 C IMPERIAL CONSOLE TUBE TESTER TUBE SELLER 59.90

These models have automatic flashing of red and green windows that flash words GOOD or REPLACE simultaneously with Meter Reading. Radio plug receptacle operates radio automatically if tube is good.—The Most Amazing Testers Ever Made.—Console openly displays up to 400 tubes.

401 ALL WAVE SIGNAL GENERATOR \$ 34.90
 521 AC VOLT OHM MILLIAMETER 39.90
 600 DACO RADIOMETER (Analyst) 149.90

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 Please send information on all models.
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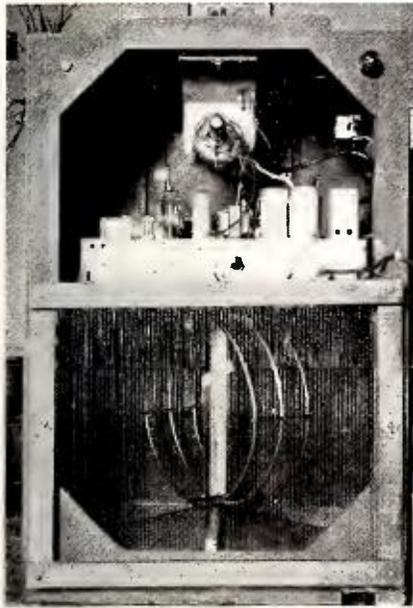
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 LET US MODERNIZE YOUR
 BENDIX OR DAYRAD UNITS

Television Clicks in New York

(Continued from page 18)



Philco's special loop antenna for television receiver on vertical polarization, designed to cut out interference.

"One such diathermy machine," Mr. Grimditch pointed out, "ruins television reception for miles around. However, with vertical transmission, the directional property of the loop under control of the user gives the possibility of eliminating this serious interference, which is not practical by any other means. Until the development of the vertical television loop, a climb to the roof in all sorts of weather was the lot of the television user who wished to change the direction of his roof antenna to eliminate the diathermy interference.

The Philco company operates Television Station W3XE, Philadelphia's only television station.

Craven Sees Du Mont Television

Previously demonstrated to other FCC members, the Du Mont flexible system of television and the new Du Mont 20-inch Teletron, have just been inspected by Commissioner T. A. M. Craven, at the laboratories in Passaic, N. J.

The latest Du Mont demonstration included comparisons between the present R.M.A. standard 441-line 30-pictures-per-second images, and the Du Mont 625-line 15-pictures-per-second images, using the exclusive Du Mont "memory" type screen for eliminating flicker.

Of a decidedly technical turn of mind, Commissioner Craven was critical of image definition or resolution, of line pattern, and of any possible blurring of images at the slower repetition rate, while at the same time

weighing the "elbow room" required by the present R.M.A. system calling for 6 megacycles band width, and the Du Mont system with 3 megacycles with equivalent pictorial detail or, if operating on 6 megacycles, greater pictorial detail and quite without flicker at a repetition rate slashed in half.

Push Room-Coolers for Bedrooms

"There is one pre-eminent opportunity for room-cooler sales during the coming season," declares Richard F. Roper, president of the Pleasantaire Corp., Tower Bldg., Washington, D. C., "and that is the bedroom.

"The sleeping room is usually fully enclosed on four sides; it does not usually contain more than two people, and it is occupied at night when sun load is not a problem—although mother and a child or two can escape the heat of the day there. The average well-designed room cooler on the market will do a satisfactory job in the bedroom.

"The local utility is interested in such off-peak-load sale of current. What other major appliance can the power company promote which will use half a kilowatt an hour at night?

"By concentrating on the bedroom market, the retailer can go to the public with real confidence that he has an item that will really do the job in 90 per cent of the cases. We can readily weed out the other 10 per cent by taking a look at the bedroom to be air-conditioned, or even by asking the prospect to give him a rough sketch and the dimensions. There are enough bedrooms in this country to make a market adequate for all room-cooler manufacturers. We don't have to tell the public that these units will work equally well in small offices, dens, etc. Those sales will come about automatically.

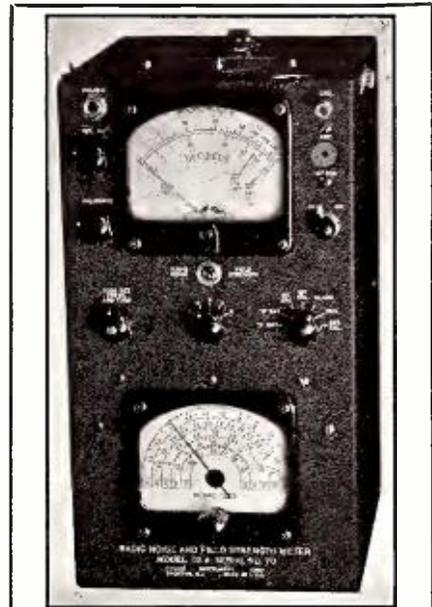
"There is one beautiful argument for bedroom air conditioning that has a terrific appeal. It is this: If you can get a good night's sleep in a properly air-conditioned bedroom, you can stand the heat the next day.

"By this approach to the distributor and the dealer, we change what has been a rather complicated story into one that is exceedingly simple."

Mr. Roper urges that every utility company in the United States include a folder in its May and June bills this Spring, describing the benefits of air-conditioning for the sleeping room, and pointing out that time-tested consumer-proved units are on the market retailing for less than \$150.

Espey Markets WQXR Jobs

Espey Mfg. Co. Inc., the makers of WQXR radio and radio-phonograph combinations, have now taken over the distribution and sale of these products and will offer them to leading musical dealers throughout the U. S., on an exclusive basis. Espey recently moved to a new home at 305 E. 63rd St., New York City.



Ferris Model 32 Radio Noise and Field Strength Meter

A Universal Direct Reading Microvoltmeter for Measuring all Types of Radio Noise and Carrier Fields.

Coverage 150-350 and 550-20,000 kilocycles—direct reading logarithmic scale on output meter—built in calibrating generator. Send for bulletin T 32 for complete details.

Write for complete general catalogue on Ferris Signal Generators.

FERRIS INSTRUMENT CORP.
BOONTON, NEW JERSEY

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Mail AUDEL'S NEW RADIOMANS GUIDE for free examination. If O. K., I will send you \$1 in 7 days; then remit \$1 monthly until price of \$4 is paid. Otherwise, I will return it.

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NEW SERVICE EQUIPMENT



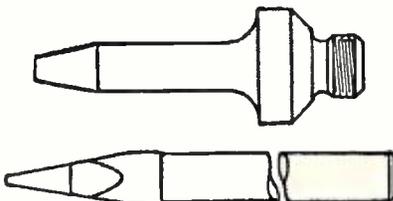
Ducon soldering iron

★ This soldering iron and dispenser eliminates need for "third hand." Lever, when depressed, releases drop of solder on joint. Available in 60-watt size listing at \$3.00. Dual Remote Control Co., 505 Guaranty Bldg., Detroit, Mich.—RADIO TODAY.



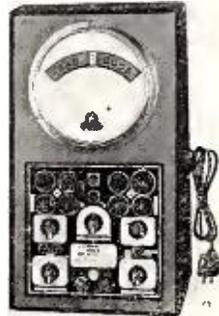
Zenith test speaker

★ PM speaker in carrying case is heavy duty type with 10-inch cone. Substitution field resistance may be varied from 275 to 3,000 ohms. Wide range of load impedances. Output meter may be connected directly across voice coil. Common types of plugs are supplied for connections. Net, \$21.95. Zenith Radio Corp., 6001 Dickens Ave., Chicago, Ill.—RADIO TODAY.



Stanley soldering iron tips

★ Armor clad tip prevents corrosion and oxidation common to all-copper tips. New tips for all Stanley irons need not be filed in order to tin and will retain its shape. Variety of sizes in both screw and plug types. Stanley Tools, New Britain, Conn.—RADIO TODAY.

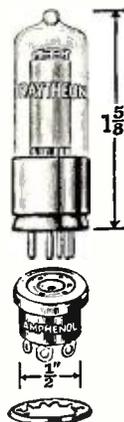


Radio City testers

★ Model 308 Series D tube tester checks all tubes including new miniatures. Line voltage control from 103 to 135 with meter indication. Tests for shorts, leakage, and noise. A new Master Multitester includes direct reading capacity measurement from 0.0001 to 300 mfd. Five linear AC voltage and 6 DC voltage ranges to 5,000. Resistance to 15 megohms. Model 414. Radio City Products Co., Inc., 88 Park Pl., New York, N. Y.—RADIO TODAY.

C-D capacitor decades

★ CDA-5 box has 100 different capacity combinations from .0001 to .011. CDB-5 has range from .01 to 1.1 mfd, and CDC-5 has ten steps from 1.0 to 10.0 mfd. The three boxes give total range from .0001 to 11.1 mfd. in 100,000 different capacity values. Rated voltage, 220 AC, and 600 DC. Cornell-Dubilier Electric Corp., S. Plainfield, N. J.—RADIO TODAY.



Amphenol molded sockets

★ Tiny sockets to fit new Raytheon hearing aid tubes have body diameter of only 1/2-inch. Spring steel retainer is used to hold socket in hole. Special contacts keep pin resistance low. American Phenolic Corp., 1250 Van Buren St., Chicago, Ill.—RADIO TODAY.



Ohmite 'multivolt'

★ Fifty watt resistance units in 10,000 and 25,000 ohms have 10 equal resistance sections for proper matching in cathode modulation circuits and for voltage dividers. Other resistance ranges also available in 75, and 150 watts. Ohmite Mfg. Co., 4835 Flournoy St., Chicago, Ill.—RADIO TODAY.

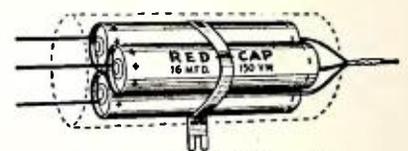
ATR vibrator

★ New line of replacement vibrators feature 3/16-inch tungsten contacts, perforated steel reed, and more efficient magnetic circuit. New vibrators are completely covered in 1940 Guide available free from American Television & Radio Co., 300 E. 4th St., St. Paul, Minn.—RADIO TODAY.



Triumph instruments

★ Model 632 Percent-O-Meter checks dry batteries from 1.5 to 135 volts. Three-inch meter calibrated in percent of new battery voltage also gives English readings of condition. Model 443 tube tester checks old and new tubes including miniatures. Push button operation, 3-inch meter, price \$23.95. Triumph Mfg. Co., 4017 W. Lake St., Chicago, Ill.—RADIO TODAY.

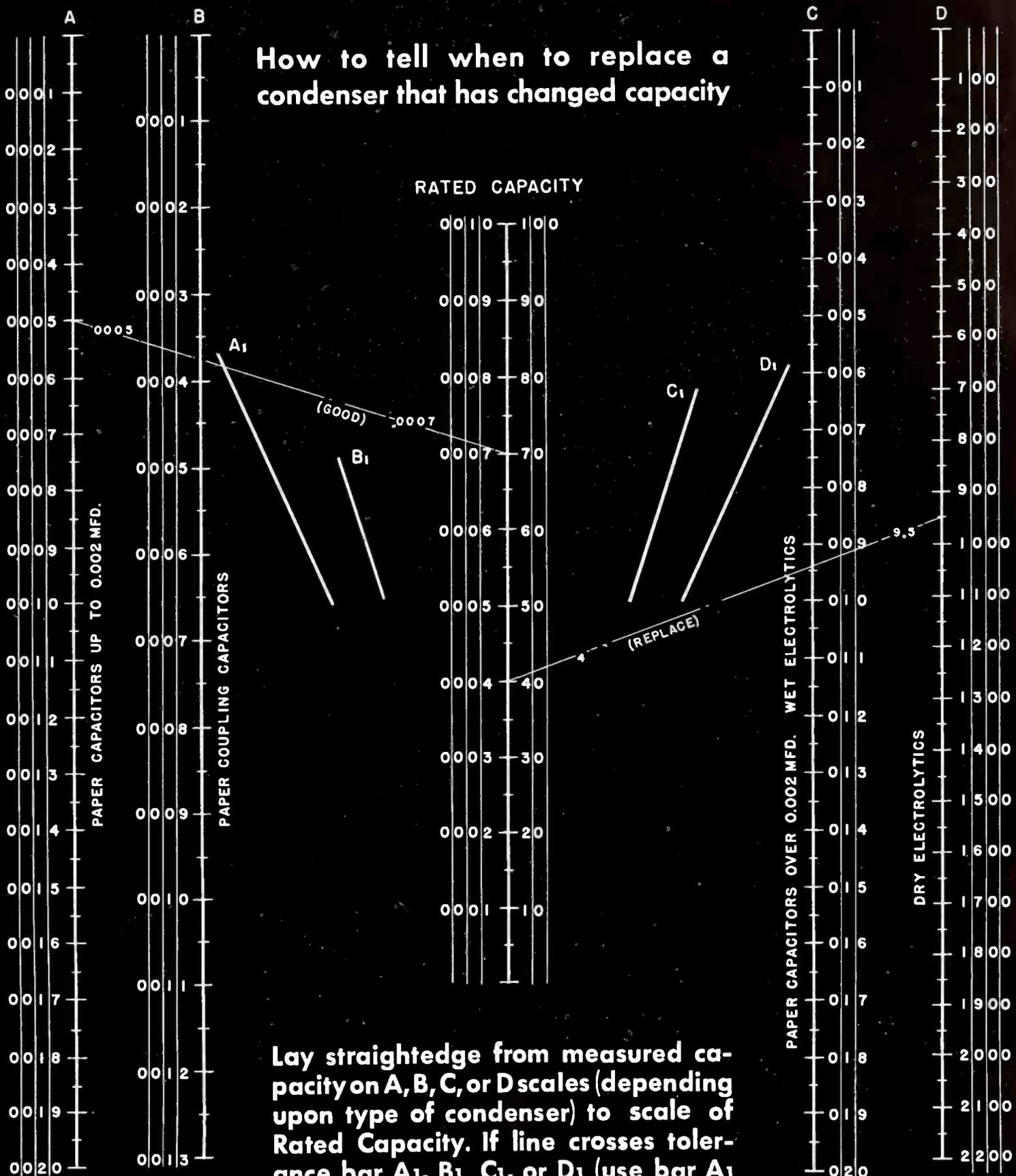


Solar "Red Caps"

★ Twelve ratings of electrolytic capacitors in minimum diameters have uniform lengths and may be strapped together to form almost any filter block combination. Number of units required for replacement is reduced. Solar Mfg. Corp., Bayonne, N. J.—RADIO TODAY.

CAPACITY TOLERANCE CHART

How to tell when to replace a condenser that has changed capacity



Lay straightedge from measured capacity on A, B, C, or D scales (depending upon type of condenser) to scale of Rated Capacity. If line crosses tolerance bar A₁, B₁, C₁, or D₁ (use bar A₁ for scale A, etc.) capacitor is good. If line does not cross correct tolerance bar, capacitor should be replaced.

SERVICE NOTES

"NO TROUBLE

when you use
OHMITE
Resistors!"



— because dependability and long life go hand in hand with Ohmite vitreous-enameled wire-wound Resistors! It's *proved* by servicemen, amateurs and prominent manufacturers

everywhere who specify Ohmite for their resistor requirements.

—so be sure of your installations too, Mr. Serviceman—Use OHMITE! See your jobber today.

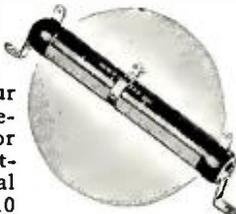
OHMITE BROWN DEVILS

Tough, dependable, vitreous - enameled resistors for voltage dropping, bias units, bleeders, etc. 10 and 20 watt sizes; 1 to 100,000 ohms.



OHMITE DIVIDOHMS

Keep 'em in your kit for quick replacements or change of resistance value. Ideal voltage dividers. 10 to 200 watts. Resistance to 100,000 ohms.



New Ohmite Tapped Cordohms



Line-cord resistors with extra tap for pilot lights on AC-DC radio receivers. Replaces voltage dropping resistors and ordinary line cord. Eliminates generated heat from set.

Ask Your Jobber for Ohmite Parts

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OHMITE

RHEOSTATS RESISTORS TAP SWITCHES



Board of Radio Technicians Guild recently held meeting at Myles Standish Hotel, Boston. L to R; G. Batt, J. Cabral, W. Staples, E. Maginot, pres., A. Saunders, F. Kennes, N. Baratta, S. Di Russo, E. Glynn, V.P.

Signal Tracing

(Continued from page 42)

of 1940, servicing has tried to keep pace by presenting a whole host of methods, and ever changing equipment, for finding the faults in radio which fail to function properly.

No matter how simple, or how complex a radio receiver may be, whether made in the U.S.A. or darkest Africa, they all have one thing in common. In every radio ever made, or to be made, the signal is the common denominator.

And so it is both logical, and practical, to follow the signal, step by step, and know that when we find the signal departing from normal, we have found where the trouble is.

SPEED IN SERVICING

With the trouble isolated to a definite section of the radio, finding the component part, adjustment, or connection which is causing the trouble is a comparatively simple job.

Locating the trouble by following the signal, is servicing by signal tracing.

It is a new servicing technique which will never be obsolete, which is independent of circuit design, of tube design, or of the number of circuits or tubes.

It is tomorrow's servicing method for today's use.

Servicing by signal tracing has been conceived by John F. Rider, and explained in his book of the same name, in a logical, interesting and very readable manner. Presented so that any radio technician may readily understand what it's all about, John has certainly made another contribution to servicing and service men, more important and far-reaching than any which have gone before.

WIDELY USED

This method of servicing is being adopted all over the world, by communications companies, by govern-

ments, and because it is basically right, it is destined one day to send all other methods into the "ash can."

RADIO TODAY recognizes that this is so, and proposes in following issues to present step-by-step details of servicing by signal tracing, in a continuing series of articles, so that every serviceman may see and understand just what it is, what it does, and how to do it.

New Ken-Rad Tube

A high mutual conductance pentode, the 6S6GT, has just been announced by the Ken-Rad Tube & Lamp Corp., Owensboro, Ky. The new tube is of the remote cut-off type, and it has low output capacity thus making it suitable for use as RF amplifier in all-wave receivers. The mutual conductance is 4,000 micromhos, and the amplification factor is 1,400. A negative bias of 30 volts is necessary to reduce the conductance to 20 micromhos.

Coil Re-wind Service Available

Barber & Howard, East Ave., West-erly, R. I., are offering a new service to radio men. This firm will duplicate any defective coil sent to them. Experimental coils for various radio applications will also be designed and built to order.

Mallory Phono Radio Supplement Out

The fifth of the series of supplemental service information booklets has just been released by the P. R. Mallory Co., Indianapolis, Ind. Extending the wide range of application of the MYE, Mallory-Yaxley Encyclopedia, this new 40-page book covers the principles of operation and servicing methods for well-known automatic record changers and wireless phono oscillators.

Circuit diagrams for various wireless players, and part identification

diagrams and photos of the changer mechanisms, make the servicing of these units a simple task.

The supplement bulletins are a part of the service offered to the purchaser of the MYE.

NEW VIBRATOR GUIDE

Complete vibrator replacement guide has just been released by the P. R. Mallory & Co. Inc., Indianapolis, Ind. The new book is fully cross-referenced by make and model number of receiver, for both home and auto models. Along with the complete and accurate vibrator replacement tables a wealth of information is included in the form of servicing and testing information. Oscillographs of various vibrator conditions, connection charts, and auto interference elimination data for 1940 cars round out this free book.

Tiny Raytheon Tubes Announced



Four filament type pentodes include the CX 501, a voltage amplifier, CX 502, CX 504, crystal phone output tubes, and CX 503, a bone conductor and magnetic phone output tube. The new tubes operate at 1.25 volts on the filament and draw 33 ma. The plate and screen may be operated from 30 to 45 volts. The load resistances for the output tubes vary from 20,000 to 80,000 ohms, the crystal phone drivers having the higher load impedance.

The four new tubes may also be obtained with tinned leads for soldering direct into the circuit. These have the same serial numbers with an additional "X."

Sylvania Engineer Talks On New Tubes

Dedicated to the idea that the aggressive radio serviceman will want to go in for special and continued study of new radio tubes and their applications, two meetings were conducted by Walter Jones, Hygrade Sylvania commercial engineer, in Toledo and in Cincinnati, Ohio, last month.

The meetings were sponsored by local radio tube jobbers, who assisted Mr. Jones in planning the well-attended meets.

Ward Leonard Reps Move

The Northwestern Agencies, representatives for Ward Leonard Electric Co. have a new and larger office at 2411 First Ave., Seattle, Washington. The new home includes a larger warehouse for electric controls.

**THOUSANDS
of users BOOST
MODEL 1200-A**

**TRIPLET
VOLT - OHM -
MILLIAMMETER**



Model 1200-A

Model 1200-A has separate AC and DC instruments in tilting twin case, accuracy of each within 2%.

Only \$23.84

DEALER NET

This exclusive Triplet tilting feature permits adjustment of twin instrument to angle in direct alignment with reader's line of vision. AC-DC volts, 0-10-50-250-500-1000 (2000 ohms per volt DC); DC Ma. 0-1-10-50-250; low ohms, 1/2-500; 1500 ohms; 1 1/2 and 3 megohms. Has two RED • DOT Lifetime Guaranteed Instruments. Sturdy Portable Metal Case with black suede enamel finish. . . . Etched panel is silver and red on black. Net Price \$23.84

MODEL 1200-C is the same as 1200-A but has 5000 ohms per volt D.C. \$26.84 Dealer Net Price

MODEL 1200-E is similar to 1200-A but has 25,000 ohms per volt D.C. and resistance range to 40 Megohms. Dealer Net Price \$31.17

WITH RED • DOT LIFETIME GUARANTEED INSTRUMENTS

POCKET SIZE VOLT - OHM - MILLIAMMETER

A complete pocket-size Volt-Ohm-Milliammeter with AC-DC Voltage ranges; 0-10-50-250-500-1000 at 1000 ohms per volt; DC Milliampers 0-1-10-50-250; Low Ohms, 1/2 to 300; High Ohms to 250,000 with provisions for higher readings by external batteries. . . . Black molded case and panel, completely insulated. MODEL 666 Dealer Net Price \$14.00
MODEL 666-II—Same as Model 666 but with AC-DC Voltage ranges to 5000 volts (self-contained). Dealer Net Price, \$14.50.



Write for Catalog, Section 193 Harmon Drive

THE TRIPLET ELECTRICAL INSTRUMENT COMPANY
Bluffton, Ohio

MANUFACTURERS' "REPS"

A Nationwide Listing of Men and Organizations Serving as
Manufacturers' Representatives for Radio and Electronic Products

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Phoenix
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1809 N. 5th Ave.

CALIFORNIA

Hollywood
COHN, S. H.,
814 N. Sweetzer Ave.
NEELY RADIO, NORMAN B.,
5334 Hollywood Blvd.

Long Beach

WALLACE, DON C.,
4214 Country Club Drive

Los Angeles

CONSOLIDATED SALES CORP.,
742 Merchant St.
DEMAREST, E. P.,
1630 S. Flower St.
EMMET CO., FRANK A.,
1264 S. Fedora St.
FOX ASSOCIATES,
1157 South Hill St.
GROESCHKE, B.,
P. O. Box 1376
HILL SALES CO., J. T.,
1101 W. Olympic Blvd.
HITT, W. C.,
1341 S. Hope St.
JORDAN & CO.,
650 S. Grand Ave.
KNIGHT, INC., W. BERT,
908 Venice Blvd.
LASURE, HARRY A.,
2216 W. 11th St.
LMBARD SMITH CO.,
2032 Santa Fe Ave.
LYNCH, C. R.,
332 Van Nuys Bldg.
MARSH & WILSON,
711 Mitchell Place
MARSHANK SALES CO.,
2022 W. 11th St.
MILLER, GERALD B.,
8208 Santa Monica Blvd.
PERLMUTH, J. J.,
225 E. Pico Blvd.
POPE, JR., JAMES C.,
1341 S. Hope St.
SANFORD CO., D. E.,
656 S. Los Angeles St.
SAUL, HOWARD M.,
1406 S. Grand Ave.
STONE CO., CARL A.,
1406 S. Grand Ave.
STRASSNER, CONRAD R.,
1623 S. Hill St.
SUTTON & LANDAY, INC.,
3625 S. Grand Ave.
WILLIS, LOU M.,
6534 1/2 Olympic Blvd.

San Francisco

DETSCH, INC.,
341 10th St.
HERMANS CO., JAMES P.,
235 9th St.
HUBER, RICHARD,
26 Ninth St.
KNIGHT, INC., W. BERT.,
234 9th St.
LOGAN CO., LES,
646 Jessie St.
OTIS, W. I.,
905 Mission St.
PURDY, WM. J.,
420 Market St.
SINAI, ARNOLD A.,
1280 Mission St.
SMODT CO., C. C.,
246 Van Ness St.
SPECTOR CO.,
174 Stanton St.
TOPPING, JR., JOSEPH,
3695 Mission St.
TOTTEN, E. J. & JACK,
79 9th St.
WATKINS, E. J.,
580 Market St.

West Los Angeles

SWARTZ, WM. P.,
10792 Ashton Ave.

COLORADO

Colorado Springs

HARVEY, FRANCIS M.,
P. O. Box 193

Denver

HALLIDAY, GAIL,
1526 Ivy St.
MOUNTAIN STATES SALES CO.,
2610 Dexter St.
MUELLER, MARK G.,
1644 Blake St.

Greeley

MDSS. GDRDON G.,
P. O. Box 428

CONNECTICUT

Hartford

HATTON, A. T.,
410 Asylum St.

WASHINGTON, D. C.

COOKE, D. I.,
319 Newport Ave.

FLORIDA

Lutz

WALLACE, STANLEY K.,

GEORGIA

Atlanta

BURWELL, HENRY W.,
415 Peachtree St., N. E.
DRURY, C. H.,
Box 319
HOLLINGSWORTH & STILL,
Norris Bldg.
MILLAR, JAMES,
P. O. Box 116
MURPHY & COTA,
291 Peachtree St., N. E.
SMITH, MAITLAND K.,
645 N. Highland Ave., N. E.
TAYLOR CO., MORRIS F.,
440 W. Peachtree St., N. W.

ILLINOIS

Chicago

ARKIN CO., I. L.,
1525 Newberry St.
BOMKE SALES CO., W. F. E.,
605 Washington Blvd.
BOYD & CO., W. W.,
9 South Clinton St.
BRUNING, ALBERT H.,
208 N. Wells St.
CAINE SALES COMPANY,
605 W. Washington St.
CHURCH, JOHN F.,
4753 Broadway
COLE, G. McL.,
43 E. Ohio St.
CUSHING CO., L. G.,
640 N. Michigan Ave.
DARMSTADER, S. B.,
520 N. Michigan Ave.
ELLINGER SALES CO.,
9 S. Clinton St.
ESCHNER, LE ROY,
9 S. Clinton St.
GARNER CO., FRED E.,
43 E. Ohio St.
HAMILTON ASSOCIATE IND.,
646 N. Michigan Ave.
HUNTER, THOMAS B.,
4753 Broadway
KAHAN, I. J.,
333 N. Michigan Ave.
KONGABEL, GEORGE F.,
711 W. Lake St.
LUND, R. O.,
1720 North Damen Ave.
McCARTHY, L. C.,
100 S. Jefferson St.
PEEL SALES ENGINEERING CO.,
154 E. Erie St.
RITTER SALES CO.,
612 N. Michigan Ave.
RYAN CO., GERALD G.,
549 W. Washington Blvd.
SMITH CO., O. P.,
841 N. Wabash Ave.
STEMM, RDYAL A.,
21 E. Van Buren St.
STEMM, R. EDWARD,
21 E. Van Buren St.

Quincy

COOPER, BOB,
1020 N. 24th St.

INDIANA

Fort Wayne

FISCH, BUD,
712 W. Packard Ave.
MacPHERSON, B. L.,
1919 Wells St.
SOUTHERN SALES CO.,
4605 Tacoma Blvd.
VALENTINE, INC., FORREST C.,
421 Arcadia Court

Indianapolis

DE VOE, LESLIE M.,
P. O. Box 5907
MacNABB, VERNON C.,
5105 N. Capitol Ave.
MITCHELL, R. W.,
P. O. Box 5996
QUEISSER, RALPH O.,
529 W. Court St.

IOWA

Burlington

MORFORD, CHARLES H.,
821 N. 9th St.

Council Bluffs

KELLER, TED,
111 Morningside St.

Des Moines

BIGHAM, N. J.,
Y.M.C.A. Bldg.
LEWIS SALES CO., E.,
300 Youngerman Block

LOUISIANA

New Orleans

BOWMAN, DAVID W.,
8504 Sycamore St.
SOUTHERN SELLERS,
1005 Carondelet St.

MARYLAND

Silver Springs

TAYLOR CO., MORRIS F.,
Box 181

MASSACHUSETTS

Belmont

REYNOLDS, HARRISON,
53 Lewis Road

Boston

ALLEN, NICHOLAS I.,
234 Boylston St.
CLAWSON CO., RALPH H.,
117 Water St.
ELECTRICAL APPARATUS CO.,
1018 Commonwealth Ave.
GERBER SALES CO.,
49 Portland St.
PRAY SALES, W. B.,
755 Boylston St.
SMITH SALES CO., B. H.,
755 Boylston St.
TRADE CONTACT CORP.,
25 Huntington Ave.

Gardner

SEGEL CO., HENRY P.,
235 Pine St.

Scituate

HENDRICKSON, WM. A.,
First Parish Rd.

Taunton

PERRON, RAY,
50 Davenport St.

Watertown

GRADY, ED.,
11 Bailey Ave.

MICHIGAN

Detroit

ADAMS, R. A.,
4465 Penobscot Bldg.
CHIRITO, J. DOUGLAS,
3729 Cass Ave.
CLEMENTS, J. H.,
Wolverine Hotel
FITZNER CO., B. J.,
563 Insurance Exchange Bldg.
GALE, S. B.,
14036 Woodward Ave.
HAGGERTY SALES CO.,
1002 Palms Bldg.
HARDESTY, HOWARD P.,
606 Kerr Bldg.
HAWKINS, WILLIAM E.,
1374 Nottingham St.
HIGGINS, J. B.,
429 Wayne St.
LEE, WILLIAM S.,
5543 Newport Ave.
McCAFFRY, J. A.,
999 Whitmore Road
MERCHANT, R. C.,
4829 Woodward Ave.
MILSK, ROBERT,
2964 Gladstone Ave.
STEVENS, FRED J.,
3945 Balfour Road
SWANK, WALLACE B.,
6432 Cass Ave.
WALTON, H. E.,
1014 Palms Bldg.

Ferndale

HAGGERTY SALES CO.,
1507 Saratoga, W.

MINNESOTA

Minneapolis

FOSTER, MEL,
601 Cedar Lake Rd.
FRANKLIN SALES CO.,
706 Sixth Ave.
HARDING, F. E.,
4925 Penn. Ave., S.
HEIMANN CO., THE,
1218 Harmon Place
HILL-HEDQUIST CO.,
256 First Ave., N.
LEONARD & CO., TEX,
253 Plymouth Blvd.
DSZMAN, E. W.,
8 S. 13th St.
SMITH CO., HARRY P.,
1017 Lumber Exchange

St. Paul

McCARTHY, J. U.,
1768 Laurel Ave.

MISSOURI

Kansas City

FARRIS, RICHARD W.,
1322 E. 49th Terrace
GLASSMAN, B. W.,
1800 Fidelity Bldg.
KYSOLA, F. J.,
614 Interstate Bldg.

This listing has been compiled with the utmost care as to completeness and accuracy. However, readers are invited to send in additions or corrections for use in a new listing to be published later.

All territories are covered in this listing even though the addresses that are given show only the headquarters of the Reps.

Having made every effort to maintain the distinction between Manufacturers' Representatives and local salesmen employed by manufacturers, RADIO TODAY cannot assume responsibility for errors or omissions.

McGRADE, E. W.,
1025 Grand Ave.
ROES, HERBERT A.,
2017 Grand Ave.
SOMERS, F. C.,
2015 Grand Ave.

St. Louis

BENEKE CO., JULES W.,
593-595 Arcade Bldg.
BORGHOFF, WM.,
4013 Greer Ave.
BULLIVANT, F. J.,
1913 Washington Ave.
McGARY, WILLIAM T.,
19th & Branch Sts.
PICKSEN, GEORGE W.,
526 N. Vandeventer Ave.
WOOD & ANDERSON CO.,
915 Olive St.

University City

JACQUES, L. E.,
1248 Midland Bld.

Webster Groves

KATHRINUS, N. W.,
480 E. Jackson Rd.

NEW JERSEY

Collingswood

SHAPP, MILTON,
180 Fern Ave.

Newark

SCHENCK, LeROY,
57 State St.

NEW MEXICO

Albuquerque

PATCHIN, N. A.,
P. O. Box 361

NEW YORK

Buffalo

COSTELLO, J. V.,
250 Delaware Ave.
CROYSBILL, W. T.,
98 Harvard Place
HEALY & ASSOCIATES, E. E.,
190 Main St.
LOTZ, ALBERT FRANK,
191 Sterling Ave.
MOORE, BYRON L.,
191 Starin Ave.
SEEMAN, WM. F.,
523 Ellicott Square
SEGAR, HARRY B.,
683 Ellicott Square Bldg.
THRUSH, HAROLD G.,
258 Cambridge Ave.
VAWTER, JAMES H.,
259 North Drive

Brooklyn

WOLIN, SYLVAN A.,
1818 Avenue L

Long Island

Flushing

SCHWARTZ, ADOLPH,
14726 Elm Ave.

Forest Hills

BERGER, G. E.,
15 Portsmouth Place

Rego Park

HARPER, SAM M.,
63-12 Haring St.

New York City

BARRIETTE, S. L.,
200 W. 34th St.
BELL RADIO CO.,
125 E. 46th St.
BIALEK, SAMUEL,
205 E. 42nd St.
BITTAN SALES CO., INC., D. R.,
53 Park Place
BLOCK & CO., WESLEY,
15 E. 26th St.
BURLINGAME, B. O.,
69 Murray St.
CAMBER, MATTHEW A.,
30 Dongan Place
CARDUNER, WILLIAM,
296 Broadway
COOPER-DI BLASI,
91 7th Avenue
DANZIGER, HAROLD I.,
511 W. 232nd St.
DESPRES, MAURICE S.,
1780 Broadway
EGERT, S. S.,
56 W. 45th St.
FIXEL, PHILIP R.,
420 Lexington Ave.
FORSAY, JOHN M.,
27 Park Place
FREED & SAPHIN,
230 Fifth Avenue

FREED, LEO,
1150 Broadway
FRIEDMAN, ADOLPH,
220 E. 23rd St.
FURMAN, NAT.,
423 Broome St.
GOLD, WILLIAM,
72 Park Place
JOSEPH, BEN,
1440 Broadway
KASSON & CO., David M.,
401 Broadway
KOPPLE, JOHN J.,
60 E. 42nd St.
KRAFT SALES CO., INC.,
16 E. 18th St.
LEWIS & SACHS CO.,
220 5th Avenue
MACK SALES AGENCY, P. W.,
1270 Broadway
NEWMAN, CHARLES,
53 Park Place
PRICE, J. B.,
12 E. 41st St.
ROYE SALES AGENCY,
11 Warren St.
SAFTLER, PERRY,
53 Park Place
SCHARF, JACK,
152 W. 42nd St.
SCHARP, WESLEY W. S.,
67 W. 44th St.
SCHMITT SALES CO., F. EDWIN
136 Liberty St.
SMITH-BENNY SALES CO.,
11 W. 42nd St.
SMITH, HOWARD F.,
259 W. 14th St.
SMITH, I. R.,
259 W. 14th St.
SONKIN, DAVID,
220 E. 23rd St.
SPECTOR SALES ASSOCIATES,
17 E. 42nd St.
SPRUNG, JOSEPH,
254 W. 31st St.
STEINBERG, HY,
423 Broome St.
SUSSMAN, JULES,
220 E. 23rd St.
TOBIAS, DAVID F.,
30 Church St.
WEBER, JACK,
88 Park Place
WOLFE, MICHAEL,
1130 Anderson Ave.

Rochester

TERWILLIGER, P. D.,
505 University Ave.

NORTH CAROLINA

Winston-Salem

TURNER, W. F.,
515 N. Spruce St.

OHIO

Cleveland

BAEHR, ALBERT M.,
1400 W. 25th St.
BAIER, ARTHUR H.,
1957 Templehurst Rd.
DOLFUSS, JR., CHAS. H.,
219 Film Exchange Bldg.
EDWARDS SALES CO.,
942 Prospect Ave.
HENDER-FAIRFIELD CO.,
1808 Columbus Road
JACKMAN, L. H.,
7600 Euclid Ave.
RAPFUGEL, ALBERT,
700 Prospect Ave.
SCOTT SALES CO., ERNEST P.,
1836 Euclid Ave.

Cleveland Heights

CAMERON, G. M.,
2662 Shaker Road
CORNELL, PAUL M.,
3292 Cedarbrook Road

Columbus

McFADDEN, WM. E.,
915 Montrose Ave.

Dayton

BOES, W. W.,
3001 Salem Ave.

Toledo

CLARK, RALPH B.,
1415 Addington Road

OKLAHOMA

Tulsa

KAY SALES CO.,
317 Central Bank Bldg.

OREGON

Portland

BURCHAM, DON H.,
917 S. W. Oak St.
DETSCH CO., ARTHUR S.,
69 Security Bldg.

"THE REPRESENTATIVES" CITED FOR PROGRESS IN PARTS FIELD

★ Aggressively at work in the national picture of sales representation is the organization known as "The Representatives," which includes some 150 of the leading manufacturers' representatives in the radio parts field.

Members of the group come from all parts of the U.S. They are banded together in "The Representatives" in order to raise the standards of their business, and to interest themselves in all matters concerned with the prompt, forward-looking efficient distribution of radio parts. They make themselves sales specialists in the matter of connecting the manufacturer with his customers, and as a body they give the term "sales engineer" a real meaning.

"The Representatives" are over five years old. They have regular meetings and make these events socially and professionally pleasant. The group has been an important

factor in creating good will among the various branches of the trade, as they are well known to parts jobbers and manufacturers alike.

This organization is now planning to set up sectional parts of the main national organization, with vice-presidents elected for each section. This was thought to be an appropriate step as the group gets larger and increases its membership in each trade area.

National officers, elected last Fall, are S. K. MacDonald, president; Martin Camber, vice-president; and David Sonkin, secretary-treasurer. Mr. Sonkin's offices are at 220 E. 23rd St., New York City. Chairman of the membership committee is Irvin Nevins, 53 Park Place, New York City. The Board of Governors includes Dan R. Bittan, chairman; Perry Saftler, Adolph Friedman, Leo Freed, and I. Goldman.

DOBBIN, MERTON A.,
524 S. W. Pine St
KILLAM, H. A.,
131 S. W. 4th Ave.

PENNSYLVANIA

Coroopolis

McKINLEY, J. E.,
1511 Vance Ave.

Glenside

HILLIARD, D. M.,
329 Linden Ave.

Philadelphio

FRIEDMAN, MARTIN,
6030 Christian St.
GATY, SIDNEY H.,
6713 N. Sydenham St.
HYDE ELECTRIC CO., E. N.,
117 W. Ashmead St.
JEFFRIES, SAMUEL A.,
916 Packard Bldg.
JORALEMON, L. D.,
112 S. 16th St.
KEEFE, JR., JOHN,
265 Drexel Bldg.
LEBAN, ALBERT D.,
27 S. Robinson St.
MacDONALD, SAMUEL K.,
1343 Arch St.
TRINKLE, W. S.,
2324 Ripley St.

Pittsburgh

BAUMGARTEN, FRANK A.,
405 Penn Ave.
CLARK, INC., RUSSELL F.,
810 Penn Ave.
GROETZINGER CO., H. W.,
1500 Cooper Ave.
MIDDLEMAN, ALBERT E.,
524 Penn Ave.
OLSON, JOHN O.,
5314 Beelermont Place
PARKE CO., H. B.,
918 Hill Ave.
STOVER & CO., S. H.,
704 Century Bldg.
TANNER, G. O.,
600 Grant St.

TENNESSEE

Memphis

CARTWRIGHT, J. M.,
1288 Vinton Ave.

TEXAS

Dallas

ANDERSON CO., GEORGE E.,
Santa Fe Bldg.
AYMOND CO., EDWARD F.,
3750 Urban Ave.
BERTHOLD, A. L.,
P. O. Box 1052
CAMPION, R. M.,
P. O. Box 4116
CORRY, HAL F.,
3522 Gillon Ave.

HAFER COMPANY,
707 S. Erway St.
PATTERSON & CO.,
434 Allen Bldg.
PAYLOR, B. G.,
Jefferson Hotel
SCHOOONMAKER, J. Y.,
2320 Griffin St.
SMITH, J. EARL,
P. O. Box 1805
SMITH, ROYAL,
912 Commerce St.
WILKS, ERNEST L.,
7935 Eustis St.

Fort Worth

SMITH, W. JAY,
2317 Arrowhead Court

Houston

KLICPERA, M. F.,
P. O. Box 2397
TEX-O-LA SALES CO.,
West Bldg.

UTAH

Salt Lake City

BOWEN, RONALD C.,
1755 Princeton Ave.

VERMONT

Bottleboro

VAN DER VEER, JOHN D.,
92 High St.

VIRGINIA

Richmond

GROVES, FRED G.,
2920 Noble Ave.
HUDSON, GEORGE W.,
3308 E. Broad St.
MOON, J. MARTIN,
3234 W. Franklin St.

WASHINGTON

Seattle

BACKER CO., JAS. J.,
109 Bell St.
MARSH AGENCIES,
5333 Ninth St., N. E.
NORRIS CO., GEO. D.,
2420 Third Ave.
NORTHWESTERN AGENCIES,
2411 First Avenue

WISCONSIN

Milwaukee

AARON & ASSOCIATES, IRVIN I.,
4028 N. 16th St.
HENRICH, ERVIN W.,
3634 N. Green Bay Ave.
MOELLER, ROLLAND,
2105 N. 2nd St.
ROBINSON, CLEM,
2711 N. 76th St.
ROSCHKE, O. E.,
740 N. Plankinton Ave.

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Compare the two recordings and discover the advantages of using genuine Presto discs and Presto sapphire cutting needles. Keep your sample disc on hand to show to your customers who want *something better* in recording equipment.

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PRESTO ORANGE SEAL DISCS (Aluminum base)*
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PRESTO MONOGRAM DISCS (Cardboard base)*
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12" ea. \$.75.

*Sold in display cartons of 10 discs.

PRESTO SAPPHIRE CUTTING NEEDLES, average cutting life 5 hours, each \$6.00. Charge for resharpening sapphire needles, ea. \$2.50.

PRESTO SHADOWGRAPHED STEEL PLAYING NEEDLES, made especially for playing home recordings, pkge. of 25, \$.25. Sold in display cartons of 40 packages.

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242 W. 55th St., New York, N. Y.

World's largest manufacturer of
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FILL IN YOUR NAME HERE:

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New York, N. Y.

Please send sample disc to:

Mr.

Firm Name.

St. and No.

City and State.

Philco Quality Models Refute Low-Price-Market, Says Jones

The enthusiastic reception accorded Model LH-6 of the new Philco refrigerator line is a dramatic refutation of the common belief on the part of the industry that it must depend on selling low-priced units for its major market, declares W. Paul Jones, manager of the refrigerator division, following a nation-wide survey.

"The appeal of the LH-6 and other models in Philco's entire advanced design line is not based on price alone, but on the fact that this 'new kind of refrigerator,'" Jones explained, "provides brand-new services and conveniences which have never before been available in any other refrigerator regardless of price.

BEST-SELLER CITED

"It has been a widely accepted merchandising theory that the refrigerator market has approached the saturation point and that future sales must be derived mainly from the low-priced field," said Jones. "The error of this belief has been positively revealed by the fact that Philco LH-6 has become one of the fastest-selling models in the industry and the entire advanced design line has met with sensational sales acceptance."

Another result of Philco's market survey was to reveal the popularity of Philco's separate giant-size frozen food compartment which is in addition to an oversize ice-cube chamber.

A third outstanding feature, distributor reports reveal, consists of an aluminum freshener shelf which provides the highest type of efficiency in the moist cold compartment because the dishes are placed in direct contact with the cold and themselves add to the refrigerating surface in the compartment as they become cold.

Stromberg Officials Get Promotions, Honors

In a group of promotions announced by the Stromberg-Carlson president, Wesley M. Angle, Dr. Ray H. Manson has been named vice-president and general manager. He succeeds the late George A. Scoville.

Dr. Manson started with the company in 1916 as chief engineer, after he had worked with Western Electric and other firms in the telephone manufacturing field. He has for some time been Stromberg's vice-president in charge of engineering.

Appointed to the post of radio sales manager for SC, was Fred N. Anibal, who began work with the company 12 years ago, as a specialty salesman. He is a thoroughly experienced expert in retail and wholesale selling, and is widely known as a trainer of sales organizations.

It was also announced that Lee McCanne will assist Dr. Manson as secretary and assistant general manager; Edward A. Hanover continues as vice-president in charge of production; Edwin C. Roworth becomes vice-president



Promoted to post of radio sales manager for Stromberg, Fred N. Anibal.

in charge of finance; Wilbur W. Hetzel is the new treasurer.

Lloyd L. Spencer, general sales manager for Stromberg, will continue his present duties, and has been nominated to succeed Mr. Scoville as head of Stromberg's Canadian branch. Fred C. Young will now take Dr. Manson's place as chief engineer.

Three of the Stromberg engineers, Benjamin Olney, J. H. Levis, and W. T. Powell were among the 37 inventors from all fields who received special honors at the Western New York "Modern Pioneers" dinner held recently by the Rochester N. Y., Chamber of Commerce.

Mr. Olney, who has been in charge of Stromberg's acoustical laboratory since 1926, is the inventor of the Acoustical Labyrinth. Mr. Levis and Mr. Powell were honored for inventions in the telephone equipment field.

Smith-Benny Named for Howard Radio

Just announced as sales representatives for Howard radio, is the Smith-Benny Sales Co., 11 W. 42nd St., New York, N. Y. Benny Ginsburg and Herman Smith, who have both had long experience in marketing some of the nation's leading radio lines, will handle the area including all the New England states as well as New York, Pennsylvania, West Virginia, Virginia, and North Carolina.

A large-scale advertising campaign on Howard radio will shortly be launched in consumer media.

RSA Members Going Strong

The RSA executive secretary, Joe Marty, Jr., has finished a 7,000-mile trip around the chapter territories of the RSA in the middlewest and throughout the New England and Atlantic Coast states. He reports that servicemen members are counting on increased business during 1940, through the cooperation of the NAB and the RSA.

RSA has announced the application for the formation of another chapter of the RSA in Milwaukee, Wisconsin.

NEW BOOKLETS

Catalog 1540 describes and illustrates a complete line of 6 models of battery eliminators. Listing includes Model AP power mine radio filter, and Model CC speaker volume control. Electro Products Laboratories, 549 W. Randolph St., Chicago, Ill.

Two publications, "Wholesaling Packaged Air Conditioning at a Profit," and "Retailing Packaged Air Conditioning at a Profit" are now ready for the trade. They come from Pleasantaire Corp., Tower Building, Washington, D. C., makers of Pleasantaire and Northwides unit air conditioners. The booklets describe merchandising plans based on the firm's 4-year experience in this field.

"Goodby Feedback" is the name of a new booklet describing the new Shure true cardioid uni-directional microphones. Shure Bros., 225 W. Huron St., Chicago, Ill.

A new bulletin to be inserted in your Janette folder deals with Janette rotary converters, giving capacities, list prices, etc. Janette Mfg. Co., 556 W. Monroe St., Chicago, Ill.

Circuit diagrams for any radio set, 1919 to date may be obtained at 25c per copy. Name of manufacturer and exact model number must be given in ordering. Supreme Publications, 3727 W. 13 St., Chicago, Ill.

The General Electric Co., Schenectady, N. Y., presents a pamphlet describing the new VU—volume-level indicator, a standardized instrument for monitoring the sound level of radio programs.

Bulletin No. 232, presented by the Crowe Name Plate & Mfg. Co., 3701 Ravenswood Ave. Chicago, furnishes description, illustrations and list prices of panel kits and remote controls for auto radios.

Just issued by Stromberg Carlson, for use by dealers, a new two-color folder illustrating and describing the company's complete Frequency Modulation radio line. Five models are covered, along with FM operating principles, and contribution of SC Labyrinth and Carpinchoe speakers to new standards of reproduction.

Three new bulletins issued by Shallcross Mfg. Co., 10 Jackson Ave., Colingdale, Pa. cover resistance standards and decade boxes in No. 146-1, resistance bridges in No. 146-2, and special volt-ohmmeters, electro-clinical thermometers in No. 146-3.

A Plug-In Resistor Tube Service Manual, released by Clarostat Mfg. Co., Inc., 185-7 N. Sixth St., Brooklyn, N. Y. 32 pages of plug-in resistor tube listings, conveniently arranged. Company will send manual for 15c in coin or stamps.

Exclusively amateur equipment catalog just announced is available from Allied Radio Corp., 833 W. Jackson Blvd., Chicago.

Recorders for Every Market

SYMPHONIC 16-INCH MODEL



★ Four big features distinguish this new professional model 16-inch Federal Recorder. It's a High Fidelity Recorder, a Standard Radio, an Electric Phonograph, a Public Address System. Overhead, fully adjustable cutting head; 27-pound heavy duty steel-alloy speed governor turntable, 78 or 33½ RPM speeds; two microphone inputs with individual volume controls; many new and exclusive features generally included only in very high priced equipment, yet still moderately priced. The symphonic recorder is acknowledged the finest instrument in the portable field.

LITTLE PRO 12-INCH MODEL

★ This amazing little instrument is the only popular priced recorder on the market with these special features. 1—Built-in radio for recording off the air. 2—Operates at two speeds—33½ and 78 RPM. 3—Built-in mixer for two microphones. 4—Special amplifier circuit permitting off the air and microphone recording simultaneously. 5—An overhead feed mechanism guaranteeing positive and uniform cutting. 6—A 17-pound steel-alloy turntable eliminating all possibility of "wows" and wavers. This Little Pro is zooming into national popularity for all amateur and semi-professional recording.



RECORDING RADIO TABLE MODEL



★ The new Federal Recording Radio is a modern home instrument, destined to replace the ordinary radio-phonograph combination, offering five separate functions for enjoyment. 1—Recording circuit radio,—power and tone quality plus. 2—High fidelity phonograph,—playing all records up to 12 inch. 3—Home broadcaster,—amplifying speech or music. 4—Microphone recording,—preserving in sound, precious moments that will never return. 5—Off-the-air recordings,—producing a made-at-home library of records from radio programs.

ALSO MADE IN CONSOLE MODEL

★ The Federal Recorder line is distinguished by its completeness and wide price range, providing ideal equipment for the home, the home movie fan, the professional musician and the radio artist, recording studios, schools and broadcasting stations. Federal Recorders are the only recorders checked for tone quality and speed fluctuations by the Cann Chromatic Straboscope which accurately measures sound to 1/100 of a semitone. The unmatched advantages of these Federals make them the finest line of recorders ever produced. Write for details, catalog, price-list and complete information regarding the Federal dealer franchise. 313

FEDERAL RECORDER CO.

50 West 57th Street

Dept. 3754

New York, New York

Expanded Membership For NRPDA

A large group of new members of the National Radio Parts Distributors Association has been announced by Arthur Moss, executive secretary of the organization. Mr. Moss has completed a 5,000-mile trip through nine states, and now releases the following list of additional members for NRPDA:

NEW YORK

Radio Equipment Corp., Buffalo; Roy C. Stage, Syracuse; W. E. Berndt, Syracuse; Stewart W. Smith, Syracuse;



**A
D
D
R
O
F
I
T
S**

ZIPPER COVERS for PORTABLES

Do they CLICK? And How!

It's the newest trend in radio! Set manufacturers increase your sales by pushing these attractive weatherproof radio covers—for portables and carry-abouts. We offer special styling in smart fabrics—for exclusive use if desired. Write today. Samples and estimates available to set makers.

WORK ROOM SERVICE CO.
1414-1418 So. Wabash Ave., Chicago, Illinois

BRANCHES:

Detroit • Milwaukee • Minneapolis • St. Paul



Bruce Coffin, right, founder and general manager, and Lloyd H. Coffin, president of Hytron Corp., now guide their firm into its 20th year of the manufacture of radio tubes exclusively. Hytron's latest contribution to the tube art is the Bantam GT type, now used by all manufacturers.

Federal Radio Supply Co., Binghamton; Fred C. Harrison, Elmira; Fort Orange Radio Dist. Co., Albany; Edwin E. Taylor, Albany; Vaeth Electric Co., Utica.

OHIO

Ross Radio Co., Youngstown; Radio Repair & Service Co., Akron; Armstrong Radio Company, Canton; Thompson Radio Supplies, Columbus; The Bell Radio Parts Co., Columbus; Lima Radio Parts Co., Lima; United Radio, Inc., Cincinnati; Radio Supply Co., Cincinnati.

INDIANA

Van Sickle Radio Supply Co., Indianapolis; Archer & Evinger, Terre Haute.

MISSOURI

Ebinger Radio & Supply Co., St. Louis; Tom Brown Radio Co., St. Louis; Manhattan Corporation, Kansas City.

IOWA

Dukes Radio Co., Sioux City; Wholesale Radio Laboratories, Council Bluffs; Iowa Radio Corporation, Des Moines.

NEBRASKA

H. C. Noll Company, Omaha.

KENTUCKY

P. I. Burks Co., Louisville.

ILLINOIS

Lurtz Electric Co., Belleville.

PENNSYLVANIA

Jordon Radio Co., Erie.

WASHINGTON

Seattle Radio Supply Co. Inc., Seattle.

OREGON

United Radio Supply, Inc., Portland.

CONNECTICUT

Stamford Radio Supply, Stamford.

WISCONSIN

Marsh Radio Supply Co., Milwaukee; Radio Parts Co. Inc., Milwaukee; Valley Radio Distributors, Appleton; Appleton Radio Supply Co., Appleton.

MINNESOTA

Northwest Radio, Duluth; Lew Bonn Company, Minneapolis; Hall Electric Co., St. Paul; Radio Maintenance Co., Minneapolis.

ANOTHER NEW **JFD** DEVELOPMENT

The FLUTED TUBE *Noiseless* ANTENNA

A Big Improvement in Contact, Pickup, Strength, Rigidity, Beauty



- **NOISELESS**—Mechanically, WITHOUT use of grease or inner strips.
- **NOISELESS**—Electrically—Properly shielded and grounded.
- **FLUTED TUBING**—Provides 4 positive contacts in any position.
- **OVER 25 to 50%** more pickup surface than ordinary round tubing.
- **GREATLY** increased strength and rigidity, reducing sway.
- **ADMIRALTY BRASS** tubing, heavily chrome plated, beautifully finished
- **QUICK AND SIMPLE** to install.

Write for Complete Catalog—This ANTENNA DISPLAY comes to you FREE

Pat. Pending J. F. D. MANUFACTURING CO., 4111 FT. HAMILTON PKWY., BROOKLYN, N. Y.



Clarion Has New Line, New Selling Plan

Warwick Mfg. Corp., Chicago, owners of Clarion Radio, are now announcing a new merchandising plan for a new line of Clarion midgets, portables and farm sets. According to Warwick general sales manager Robert Shellow, "the company has been marking time with the Clarion product until an appropriate moment and the right kind of sales plan could be combined to put the line back on the map in a big way."

In connection with the aggressive re-introduction of the Clarion line, Mr. Shellow points out that over a million dollars had been previously spent in publicizing the name; that the firm had always enjoyed a "clean" reputation; and that Clarion had consistently maintained a "no-dumping" policy.

Extensive work has been done to develop radio designs "perfectly in tune with the modern trend," with emphasis on attractive cabinetry and mechanical precision. Mr. Shellow declares that "we feel that when dealers and distributors learn the details of what Clarion has to offer, they will agree that our plans for merchandising are as refreshingly new and 'different' as the sets themselves."

Chamberlin Named Chief Engineer for Permoflux



The radio speaker design expert,
P. C. Chamberlin, of Permoflux.

Announced by Permoflux Corp., 4916 W. Grand Ave., Chicago, is the appointment of P. C. Chamberlin as chief engineer. He has had wide experience in radio speaker design, and has pioneered many new developments in the field. For the past four years Mr. Chamberlin has worked with Radio Speakers, Inc., where he made notable contributions to the design of small PM speakers for midget radios.

Permoflux will shortly announce a new product, and a number of new speakers, according to news from vice-president W. E. Gilman.

Sherman to KC

Edward Sherman previously a record specialist for RCA-Victor in Chicago, has rejoined the RCA organization as record merchandising specialist for the Kansas City district. Mr. Sherman will headquarter at the company's Kansas City office, where Harold Winters is district sales manager.



**Stop THE
NEXT TEN PEOPLE
THAT PASS YOUR DOOR
Ask Them This Question...
WHAT DOES "MAJESTIC,
MIGHTY MONARCH OF
THE AIR" MEAN?**

Nine out of ten will know

the correct answer . . . RADIO

In Majestic, the buying public recognizes the name of an old friend. During the past 15 years the public has learned to think of Majestic when thinking of radio.

Distributors and dealers are capitalizing on this consumer acceptance.

Majestic
MIGHTY MONARCH OF THE AIR

RADIO IN ALL ITS FORMS

MAJESTIC RADIO & TELEVISION CORP.
2600 W. 50th STREET • CHICAGO, ILL.

**A GOOD NAME
GOES A LONG WAY**



The good name of Ken-Rad Radio Tubes is due to the high standards of their manufacture.

KEN-RAD TUBE & LAMP CORP.
OWENSBORO, KY.

Export Dept.
116 Broad St., New York, U.S.A.
Cable Address: Minthorn, New York

★ **KEN-RAD** ★
DEPENDABLE RADIO TUBES

Crosley Managers Hear Good News for 1940

"The most thorough and complete merchandising campaign in the history of the Crosley Corp." was outlined by company officials at a 3-day meeting of Crosley district managers at the Netherland-Plaza Hotel, Cincinnati.

Neil Bauer, manager of distributor sales presided at the meeting, and speakers included Thomas W. Berger, general sales manager; Lewis M. Crosley, executive vice-president; R. C. Cosgrove, the new vice-president and general manager; Duncan Morgan, market analyst; William T. Wallace, radio division manager; R. J. O'Connor, range-washer division manager, and many others.

Guests at the meeting exhibited "a genuine feeling of confidence in the outlook for 1940," and the 3-year merchandising program of the company was enthusiastically received.

GE Awards \$1700 For Cabinet Designs

Winners of the \$1700 cash prizes, and the honorable mention awards offered in the General Electric Co.'s contest for radio cabinet designs, have been announced by Perry F. Hadlock, manager of GE receiver sales. Over 300 entries had been received.

Roy S. Johnson and Frank LaBianca, Long Island City, N. Y., received the grand prize of \$500 for the best designed cabinet; an additional \$300 be-

cause the design won first prize in the table model class; and \$25 for honorable mention in table model design. Second prize of \$150 in the table model class went to Florence Schust and Christopher J. Chamales, Cranbrook Art Academy, Bloomfield Hills, Michigan; third prize in this class, of \$75, to Robert D. Tyler, of New York City. Other honorable mention awards of \$25 for table model designs went to Lorin Jackson, New York City, and to the

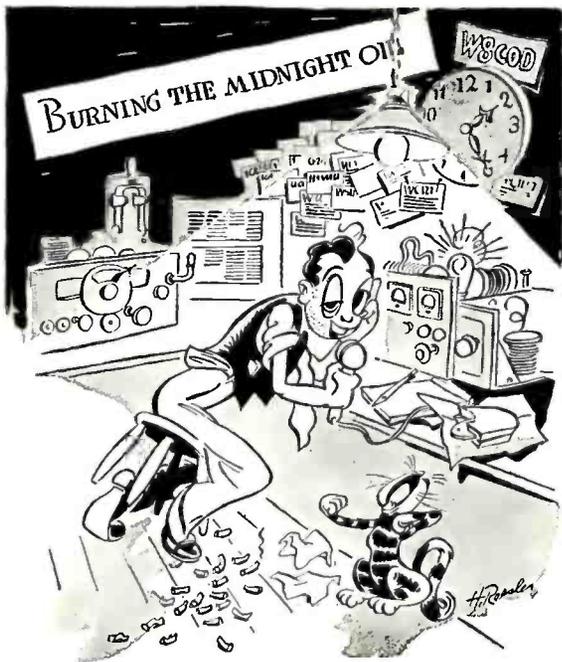
team of Leon Barmache and Vinicio Paladini, also of New York.

First prize of \$300 in the console class went to Miriam Price, of Price and Weir, industrial designers, New York City; second prize of \$150 to Freida Perrault, of the Rhode Island School of Design, Providence; third prize of \$75 to Maurice Weir, also of Price and Weir, New York; and honorable mention awards of \$25 to Lucille Batter, New Haven, Conn.; Frederick H. Ledgard, New York; and Stewart Ross James, New York.

The contest plan was conducted by Interior Design and Decoration. Its purpose was to get fresh thinking into radio cabinet design, from U. S. designers and students.



The smiling staff of Marsh Radio Supply Co., Milwaukee, shown at their gala opening. Left to right, "Pete" Brazan, Rosemary Krembs, "Irv" Irving, Earl E. Marsh, "K" Knell, and "Art" Herzer. Photo was snapped by John Erwood of Erwood Sound Equipment Co., Chicago.



Volume Controls ◦ Fixed Resistors
Ceramic Capacitors ◦ Wave Band Switches

Centralab

Div. of Globe-Union Inc.
MILWAUKEE, WISC.

CENTRALAB Stays Awake



The C. Q.'s have died down . . . too tired to Q.S.L. . . . but Old Man Centralab never bats an eye. Day in and day out this old owl is "wising up" to new developments in the business. In ham shacks . . . on service benches . . . and in the laboratories . . . the word "CENTRALAB" continues to stand for dependability . . . quality . . . and performance. Day or night . . . play safe with Centralab!

Hygrade Sylvania's Annual Report

According to a report submitted by E. J. Poor, Chairman of the Board of Hygrade Sylvania Corp., Salem, Mass., at the annual stockholders' meeting, "the year 1939 was the 25th consecutive year in which the corporation and its predecessors have shown a profit. . . the company maintains its position as the second largest manufacturer of radio tubes and the third largest producer of electric light bulbs.

Hygrade Sylvania net income for 1939, after all charges and taxes, amounted to \$856,806.99 equal to 6.3 times the \$6.50 a share preferred dividend requirement for 1939 and equal to \$3.52 a share on the 204, 684 shares of common stock outstanding during the year after deducting the preferred dividend of \$6.50 a share.

Fada Head Outlines Future of Firm

J. M. Marks, general manager of Fada Radio & Electric Co., Long Island City, N. Y., has addressed a bulletin to Fada distributors and dealers, on the subject of the firm's recent reorganization. Mr. Marks says "business as usual," prompt delivery, no let-up in production, full plans for new lines, no interruption in activity of district men and salesmen.

JOBBERS NAMED

W. B. DAVIS ELECTRIC SUPPLY CO., Memphis, Tenn.—Appointed for Farnsworth radio line, to cover eastern two-thirds of Arkansas, western third of Tennessee, and upper half of Mississippi. W. B. Davis is president.

COREVA CO., INC., York, Pa.—To handle Stromberg Carlson line in several counties in York area.

LUDWIG HOMMEL & CO., Pittsburgh, Pa.—Appointed for Columbia, Brunswick, and Vocalion records, to service area previously covered by C. R. Rogers Co. Mr. Hommel and Dewey Weiner are execs. Don Carroll and the inside personnel formerly with the Rogers Co. have been engaged by Hommel.

REPUBLIC SUPPLY CORP., Detroit—Named to handle Farnsworth line. A. H. Zimmerman is president.

CAIN & BULTMAN, INC., Jacksonville, Fla.—Named by Columbia Recording Corp. for Columbia, Brunswick and Vocalion records for the state of Florida east of the Apalachicola River. F. M. Bultman is president. Hopkins Equipment Co., Atlanta, Ga., previously handled the territory.

MACADAMS EQUIPMENT CO., INC., New York City—Named by Unity Manufacturing Co., for Unity products including auto safety lights, marine deck lights, fog lights, two-beam driving lights, turn signals, and battery water guards. MacAdams has appointment as factory service station for above products in metropolitan New York area.

LEW BONN CO., Minneapolis, Minn.—Now represents Farnsworth radio.

GENERAL EQUIPMENT CO., Boston, Mass.—Appointed for Columbia, Brunswick and Vocalion records in Boston area, formerly served by Roskin Distributors. J. G. Waddell is president and has engaged salesmen and most of Roskin personnel for the new record activity.

SPENCER AUTO ELECTRIC, INC., Tampa, Fla.—Appointed for Farnsworth radios.

INTERSTATE DISTRIBUTING CO., Omaha, Neb.—Exclusive for Royale and Varsity records in 17 counties in Iowa, and the entire state of Nebraska.

BOND - RIDER - JACKSON CO., Charleston, W. Va.—Named by Stromberg Carlson, for the Charleston area, in western Kentucky and in southeastern Ohio.

Seven New Appointments by SW

Seven new distributors for Stewart-Warner radios have been announced by L. L. Kelsey, radio division manager, Stewart-Warner Corp.

These are Graybar Electric Company, Inc., Cincinnati, O.; Forston Distributing Co., Houston, Tex.; Ap-

pliance Merchandisers Co., Rockford, Ill.; Old Dominion, Inc., Toledo, O.; Ball Store Fixture Co., Dayton, O.; Royal-Eastern Electrical Supply Co., New York City; and Behrer-Nason Co., White Plains, N. Y.

Radio Bowlers in Big Meet

News from Quam-Nichols, Chicago, reveals that "the boys at the plant had enough pep left over from their rapid manufacture of speakers to win the trophies at the Radio Industries Bowl-

ing Tournament, held at Batavia, Ill., Feb. 3, 4, 11." The Quam-Nichols 5-man team swept the tourney, and the company's 2-man team, consisting of Paul Rega and Victor Rybak, also won their division.

There were a total of 220 bowlers at the meet, in 44 teams representing 21 manufacturers. Prizes of \$500 were offered, along with trophies donated by J. MacWilliams Stone, Operadio Mfg. Co.; High H. Eby; and A. J. Schmitt of American Phenolic Corp. A consolation frame took place through the courtesy of H. C. Mattes, Belmont Radio Corp.

Plans for the big radio bowling tourney were carried out by F. R. Voorhaar, P.O. Box 11, St. Charles, Ill., and a permanent bowler's organization for the industry is in prospect.

... ideal for tough P. A. set-ups!

To select the best performance for any given condition, just hook up the new Western Electric 639B multi-mike and try each of its patterns by a "flip of the switch."

It gives you non-directional, bi-directional and cardioid patterns—plus new patterns 1, 2 and 3 which reduce effects of reverberation even more than the famous 639A.

The 639B permits shifting the angle of minimum response to 150°, 130° or 110°, enabling you to avoid particular reflections or feed-back paths. New patterns are especially effective in reducing low frequency reverberation.

This new Western Electric mike can help you to make money handling tough P. A. jobs.

Send the coupon for full details!

Western Electric
639 B CARDIOID
DIRECTIONAL MIKE

GRAYBAR ELECTRIC CO., Graybar Bldg., New York.
Please send full details on Western Electric's new 639B Cardioid Mike. RT-3-40

NAME.....
ADDRESS.....
CITY.....STATE.....

The RCA SIGNALYST *is here!*

The Most Modern Signal Generator
Range 120 KC to 120 MC



New service instrument is important companion to the Rider Chanalyst and Rider VoltOhmyst

• Dollar for dollar, feature for feature, the new RCA Signalyst is the best buy in Signal Generators. Its amazing range is greater than any test oscillator... Its accuracy and stability are the tops... Stray signal leakage is kept at a minimum... AC operated with regulated power supply... It is beautiful to look at and simple to operate—truly a magnificent instrument you will be proud to own.

Only RCA Offers You All These Features!

All frequencies in fundamentals to 120 Mc
... Magnetite core coils and air trimmer capacitors... Ladder-type attenuator with direct reading in Microvolts with meter... Large dial (approx. 90 inches scale length). Bands in three colors... Internal 400 cycle modulation and 400 cycle output available... D-C connection for standard as well as television crystal calibrator, gives direct calibration of instrument... Suitable for broad band modulation up to 5 MC such as required for television signal modulation... Regulated plate and screen voltage supply... Frequency range 100 KC—120 MC (10 bands), accuracy $\pm 1\%$. Maximum Output Voltage: Low Range .05V. High Range .3V. Minimum Output Voltage: 100 KC to 15 MC, 1 microvolt; 15 MC to 30 MC, 5 microvolt; 50 MC to 60 MC, 25 microvolt; 60 MC to 120 MC, 50 microvolt.

\$107.50 NET

Over 350 million RCA radio tubes have been purchased by radio users... In tubes, as in parts and test equipment, it pays to go RCA All the Way.

More than 3,000 Rider Chanalysts are making money for service men.



Test Equipment

RCA Manufacturing Company, Inc., Camden, N. J.
A Service of the Radio Corporation of America

SALES HELPS

A Display That Delivers A Sales Talk

Motorola's new "mainliner" display for radio dealers is billed as "a complete auto radio department in itself." It has a "talking" feature—a phonograph record which plays through the Motorola Model 21A wireless record player and one of the displayed auto sets—beginning with the music of the company's sales theme, "Lovely to Look At." The record unfolds a dramatic sales message.

The display holds five models and five aerials, and each set can be quickly hooked up. It measures 5 ft. x 4 x 1½, and has ball bearing casters.

This "Mainliner" is described as "the flagship of a whole fleet of Motorola merchandise and advertising displays," and is part of the big sales campaign which includes advertising in 11 of the leading national magazines.



Motorola has also introduced a bright-colored demonstrator display board for auto aerials. The unit allows the demonstration of six "Booster" aerials, and helps dealers to demonstrate how this "Booster" feature improves the performance of any receiver. The company reveals that since this display was released, "dealers have reported greater-than-ever aerial sales."

Sales Booster for Dial Cables and Belts



A black wrinkle finish display stand, designed to increase jobber sales, by General Cement Mfg. Co., 1041 Kilburn

Every minute of the hour—
Each day of the week
More and more Radio Dealers
And Servicemen Buy and Use



Quality Radio Products
Because they want the finest!

•
NASH
RADIO CEMENTS
RADIO FINISHES
RADIO INSULATION
RECORDING ACCESSORIES
RADIO HARDWARE

•
RECORD CLEANER*
RECORD-LUBE*
PERMERTISER*
NOISX*

•
NASH RADIO PRODUCTS CO.
6267 GRAVOIS AVENUE
ST. LOUIS, MO., U.S.A.

*Trade Mark



QUICK FACTS on Steatite Insulators

Useful data on high frequency and ultra high frequency insulators is yours for the asking! This handy reference catalog gives all the facts on General Ceramics STEATITE and ULTRA-STEATITE—heat-proof, low-loss insulation materials of high mechanical strength, fabricated to precise dimensions. A very large number of standard items... plus specials in any size or shape that can be cast, machined, extruded, or pressed... are available for quick delivery. Have all the facts at your fingertips... send for this catalog today.



General Ceramics
Company
30 Rockefeller Plaza
New York

Steatite and Ultra-Steatite

INSULATORS

RADIO TODAY

Ave., Rockford, Ill. Provides neat stocking for 300 belts and 87 spools of cable. Display is heavy sheet metal, with special spaces marked for stock. It is available on a no-charge basis to all General Cement Jobbers, or it is supplied "free" with \$25 cable deal.

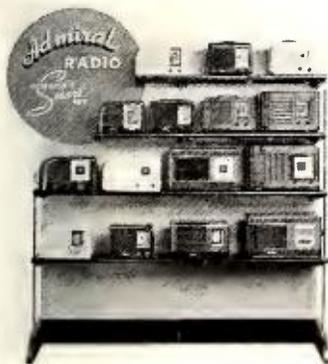
Four-color Display for Fluted Tube Antennas



To set off the looks and the features of a new 1940 line of "fluted tube antennas," a new display has been released by J.F.D. Mfg. Co., 4111 Ft. Hamilton Parkway, Brooklyn, N.Y.

The display emphasizes how the "fluting" feature increases efficiency, beauty, pick-up, strength and rigidity. The electrically-noiseless quality, and the rust-proof advantages of the antennas are also accentuated. The display exhibits the most popular models, and is supplied free with six antennas—an assortment which takes care of every car made.

Admiral's Master Display for Radios



Here's the large Master Display now being given to jobbers free with each order for 12 of the special Admiral package deals. Each deal includes an assortment of seven of Continental Radio & Television Corp.'s radios.

Dutch Exports Not Curtailed

S. W. Numann, general advertising manager for Phillips, of Eindhoven, Holland, takes exception to an item on Page 13 in December *Radio Today*, that the supply of Dutch radio equipment has been curtailed by the war.

"Not only is this wrong," writes Mr. Numann, "but on the contrary the supply is increasing all the time. The Phillips Company in its exports is ahead of last year. Phillips at present is operating from no less than 48 factories throughout the world, and so can always supply the goods whenever and wherever needed."

Maker of Record Bar Runs at Full Speed

"A very excellent sales demand for the 'Record Bar' throughout the U. S." is reported by the A. Bitter Construc-

tion Co., Long Island City, N. Y., manufacturers of the fixture-merchandiser for retailers of records. The "Bar" was designed by RADIO TODAY as a complete department for stocking, demonstrating, displaying and selling records.

According to the report, the Bitter firm has received orders from Davega City Radio Co., the large eastern chain, for bars for each of their stores.

Other dealers in 10 different states have had the bars installed. The product comes in various colors which contrast pleasantly with the other colors in the store, so that the record department may become the most attractive section on the shop.

SPECIAL TUBES FOR SOUND WORK RELEASED BY NATIONAL UNION



This is SOUND X/TRA type 6J7G.

13 SOUND X/TRA TYPES AVAILABLE Demonstrably Better!

The chief requirement for National Union's new SOUND X/TRA tube types is that they must be demonstrably better. In order to accomplish this outstanding performance in SOUND X/TRA types, modification in construction and details of engineering were incorporated. Emission limits are very high to insure exceptional uniformity, long life and adequate power handling capacity. Gas and grid current are held to exceptionally low limits to insure minimum distortion, uniformity and stability. Every tube is carefully tested for hum and microphonics and, where necessary, changes have been made in construction such as the use of special micas, extra rugged supports, double helix heaters, special insulation, etc.

The thirteen SOUND X/TRA types now available cover the major percentage of replacement requirements. SOUND X/TRA types can be substituted in all cases for the same type of tube in the regular line. This means they can be used for special audio work in any amplifier, public address, inter-office system or other audio device where the identical type number is specified but where improved performance is desirable.

SOUND specialists have long hoped for extra quality tubes engineered specifically for the requirements of SOUND work . . . they're here now in National Union SOUND X/TRA types.

See them! Buy them! Try them!
Order Samples from Your National Union Distributor

NATIONAL UNION RADIO CORP.

NEWARK, N. J.

**MADE BETTER TO
WORK BETTER**



• The combination of high tensile strength that assures a lasting bond, and faster, cleaner work made possible by quick acting flux of pure water white rosin, has given Gardiner Rosin-Core Solders an outstanding reputation for efficiency and economy on radio work by expert or amateur. Yet, due to modern production methods and big sales, Gardiner Solders cost less than even ordinary kinds. Made in various alloys and core sizes . . . and in gauges as small as 1/32 of an inch . . . in 1, 5 and 20-lb. spools.

Eastern Sales Office and Warehouse:
DAVID M. KASSON & CO.,
401 Broadway New York, N. Y.



4815 S. Campbell Ave., Chicago, Ill.

Gale Reports Success of "Kit" Plan

"Dealers in all parts of the country have been quick to realize the tremendous possibilities of the 'Kit Plan' and are taking advantage of it in a way that exceeds our highest expectations," reports L. H. D. Baker, sales manager of Gale Products, Galesburg, Ill. Mr. Baker declared that his company was more than pleased with the overwhelming acceptance that the 1940 Gale program is receiving everywhere.

The statement was made in connection with the introduction of four new 8 cu. ft. models, the addition of two low-priced "sixes" to the Gale "Special" series, and the announcement of a revised, lowered price structure on the whole 1940 line.



Here's the Gale R6F60 at \$89.95, one of two new "sixes." Other model is priced at \$119.50.

Mr. Baker pointed out that "Gale now offers a complete line of eight cabinets—four five, six and eight cubic foot capacity in Special and DeLuxe Series. With the Gale Kit Plan dealers have a selection of eighteen models, plus a large family size 13.5 cubic foot and a 16 and 19.5 cubic foot for stores and restaurants. Besides a price advantage, the Gale dealer can show this full line, and by utilizing the 'Kit Plan', cut his normal inventory as much as half."

Dealers Get Prizes in Stromberg Contest

Fifty dealers have been honored by Stromberg-Carlson, as the firm announced the winners in its 45th Anniversary Prize Window Contest. The displays were judged "on their effectiveness in creating sales-making attention."

Jenkins Music Co., Tulsa, Okla., won first prize; a close second was won by Prentke Laboratories, Cleveland. Third prize went to Gilseman Piano Co., Union City, N. J.; fourth places were given to The Killian Co., Cedar Rapids, Iowa, and to Weis & Fisher Co., Rochester, N. Y.

The following dealers were awarded fifth prizes:

Radio Studics, Inc., Salt Lake City, Utah; C. A. Hannssen, Brooklyn, N. Y.; M. Kessel, Bergenfield, N. J.; R. S. Potterton, Manchester, Conn.; Altenberg



One of the two De Luxe models in Gale's string of four new 8 ft. jobs. Other two are "Specials." All have twin freezers, many other features.

Piano House, Elizabeth, N. J.; Hub Stores, Hartford, Conn.; Sport Shop Radio Service, Jersey City, N. J.; H. Bograd & Co., Paterson, N. J.; Jenkins Music Co., Salina, Kansas; Jenkins Music Co., Ft. Smith, Arkansas; Witkop & Holmes Co., Batavia, N. Y.; Cornell & Daggett Co., Niagara Falls, N. Y.; Krueger Motor Sales Co., Niagara Falls, N. Y.; Bolin Music House, Geneva, N. Y.; Rochester Gas & Electric, Rochester, N. Y.; Sneedden York Co., Wilmington, N. C.; B. D. Cook, Sidney, N. Y.; Champagne's Radio Store, Albany, N. Y.; Hickson Electric Co., Rochester, N. Y.; Griffin's, Glens Falls, N. Y.; J. H. Troup Music House, Harrisburg, Pa.; Wilson's Home Appliance Store, New London, Conn.; Alhart Electrical Co., Inc., Rochester, N. Y.; Kuss Brothers, Inc., Hackensack, N. J.; Northern Radio Co., Seattle, Wash.; Queensboro Radio Service, Jamaica, L. I., N. Y.; A. J. Mellen, Fairhaven, Mass.; Bostock Furn. Co., Taunton, Mass.; Radio Inspection Service, Hartford, Conn.; The Curtis Art Co., Waterbury, Conn.; Radio Centre, New Haven, Conn.; Jenkins Music Co., Topeka, Kansas; Jenkins Music Co., Wichita, Kansas; Jenkins Music Co., Kansas City, Mo.; Witkop & Holmes Co., Buffalo, N. Y.; Witkop & Holmes Co., Niagara Falls, N. Y.; Ray's Radio Service, Inc., Rochester, N. Y.; J. H. Troup Music House, Lancaster, Pa.; Robelen Piano Co., Wilmington, Del.; B. W. Feathers, Inc., Troy, N. Y.; C. Dauchy Thorne, Troy, N. Y.; Home Supply Store, Covington, Va.; Witkop & Holmes Co., Jamestown, N. Y.; Okenden's Electrical Store, Penfield, N. Y.

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The first half of the book gives a comprehensive treatment of the theory, design and actual manufacturing considerations involved. The second half gives all sorts of practical information on specific characteristics, applications, testing, life, advantages and limitations of various types, etc. One entire chapter is devoted to A.C. electrolytics and their applications. An "Appendix of Useful Information" contains a complete presentation of useful measurement methods and similar data.

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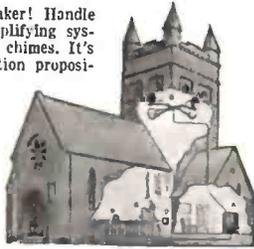
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Here's a sure profit-maker! Handle the complete Sunco amplifying system of tower and hofly chimes. It's the best sound installation proposition in the field—not only do you get the best equipment, but also expert technical assistance and sales help.

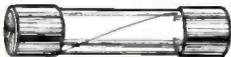


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Production Geared Up At Norge

"Optimistic forecasts based upon a sharp January rise in world sales" is cited by the Norge division of Borg-Warner Corp., Detroit, as reason for a 23 per cent step-up on production of home appliances.

Latest monthly total, for refrigerators, washers, ranges, etc., was 21,067 units, which is an increase of 107 per cent over the same period last year, according to Norge president Howard E. Blood.

Mr. Blood added that "the current factory production has been projected to meet a further expected increase . . . field reports indicate a very satisfactory acceptance of our latest products including the four home refrigerator models which we announced at new low prices recently to complete our line for 1940."

Philco Continues Ad Splashes for Refrigerators

Philco has announced the continuation of its big national magazine advertising drive "straight through the Spring and Summer." The record-breaking pull-out ad in Collier's and a double spread in Sat Eve Post and an ad in Liberty were the first ones in the series playing up Philco's "new kind of refrigerator."

Other full-color ads appear in Mar. 16th issues of Collier's and Sat Eve Post (on newsstand sale Mar. 8th and 13th respectively)—all this in addition to "unprecedented advertising in local newspapers, promotions, merchandising activities, dealer helps of all kinds. . . ."

Adams Named By Oxford-Tartak

A new sales engineer at Oxford-Tartak Radio Corp., Chicago, is Robert Adams, according to news from Paul H. Tartak, president of the firm. The announcement is part of a general expansion program; the company has just finished the best year in its history and expects similar success in 1940.

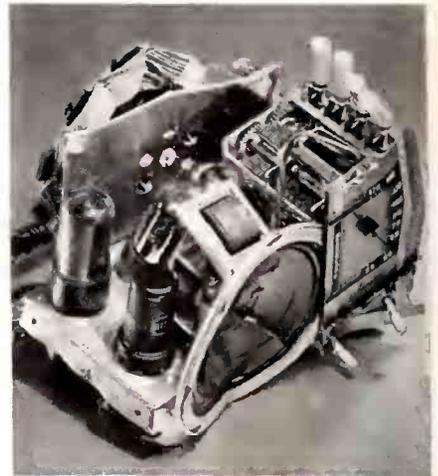
Mr. Adams has been in radio for 17 years, and was once superintendent of the radio division of Stewart Warner. He also worked with GE and with RCA, and is widely popular among U. S. amateurs.

Finch Expands Into New Quarters

Now in their brand new home at 4th and Virginia Streets in Passaic, N. J., are Finch Telecommunications, Inc., makers of facsimile transmitting and receiving equipment for broadcasters, aviation, police, shipping, public utilities and other point-to-point communication systems.

According to an announcement by W. G. H. Finch, president, the new quarters occupy a 3-story building and provide 20,000 sq. ft. of floor space. New York City sales offices will continue at 1819 Broadway.

And the Band Played On!



The Admiral set which survived a collision with an express.

One day last month in Chicago, a radio delivery truck went bumping along over a railroad crossing at more of a rate than the cargo could stand. One of the radios, an Admiral set, rolled from the truck and landed on the tracks.

After one of the fast trains got through with it, the radio cabinet had the look of a smashed eggshell. The chassis was a bit shattered, but the railway attendants will tell you that it still brings in the programs!

Guarantee Service Plan Gains

According to an announcement from RSA headquarters at 304 S. Dearborn St., Chicago, the organization now has 35 chapters who have qualified under the Guarantee Service Plan and have made cooperative plans with local broadcasters.

The statement says that "the results from the experimental setups of the RSA under this plan have been so gratifying that the entire membership of RSA will be included in this plan as rapidly as conditions permit."

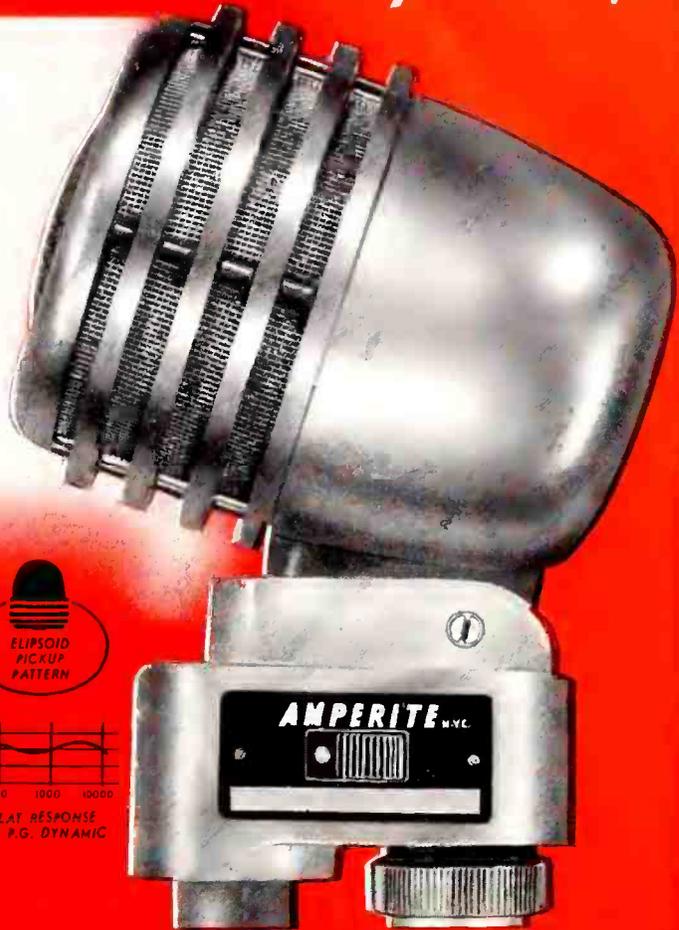
Stewart Warner Sells 553 Boxes

In the U. S. H. A. housing project, South Side Terrace, Omaha, Neb., it has been announced that Stewart Warner electric refrigerators will be used exclusively. The SW vice-president and general sales manager F. A. Hiter, revealed that the contract for the 553 houses had been awarded to the company on a basis of base unit cost plus 10-year guaranteed operating costs.

CCC to Sponsor Network News Period

Starting Mar. 25, the Commercial Credit Co. will open a thrice-weekly network program over 64 stations of the CBS chain, in the interests of its credit facilities. The show will feature Bob Trout, a star news commentator, in Monday, Wednesday and Friday periods at 6 p.m., EST.

AMPERITE Announces the **BIGGEST ADVANCE** in the Dynamic since its Inception!



- **UNI-DIRECTIONAL.** NEW SUPERIOR ELIPSOID PICKUP PATTERN
- **ELIMINATES FEEDBACK TROUBLE** BECAUSE IT HAS LOWEST FEEDBACK POINT OF ALL DIAPHRAGM TYPE MICROPHONES
- **FLAT RESPONSE.** FREE FROM ANNOYING PEAKS, GIVING STUDIO-QUALITY REPRODUCTION.



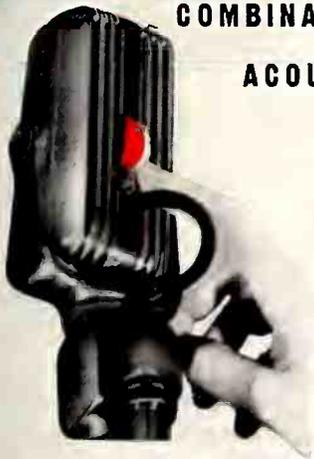
The P.G. diaphragm follows air particle velocity where amplitude is a GRADIENT of the PRESSURE. In ordinary dynamics amplitude is restricted from following air particle velocity.

The P.G. DYNAMIC is a radical improvement in this type of microphone. You can actually hear the difference. Case is designed according to modern acoustic principles. Rugged, not affected by temperature, altitude or humidity. HAS UNUSUALLY HIGH OUTPUT. —\$5 DB.

MODEL PGH (PGL, 200 ohms). Excellent for high fidelity P.A. installations, broadcast studio, and professional recording. With switch, cable connector, 25' cable. Chrome finish. LIST \$32.00 (40-10000 C.P.S.)

MODEL PGM (PGAL, 200 ohms). For speech and music. 70-8000 C.P.S. Switch, cable connector, 12' cable. Chrome. LIST \$25.00

COMBINATION VELOCITY-DYNAMIC ACHIEVED WITH ACOUSTIC COMPENSATOR



An exclusive Amperite feature: By moving up the Acoustic Compensator you change the AMPERITE VELOCITY to a DYNAMIC microphone without peaks. At the same time you reduce the back pickup, making the microphone practically UNI-DIRECTIONAL.

WITH ACOUSTIC COMPENSATOR: MODEL RBHk; RBMk (200 ohms) with switch, cable connector. Chrome, LIST \$42.00

RSHk; RBSk (200 ohms). Switch, cable connector, Acoustic Compensator. Chrome or Gunmetal. LIST \$32.00

AMPERITE KONTAK MIKE Puts Musical Instruments Across



So beautiful is the tone produced with the Kontak Mike, that it was used in the Philadelphia Symphony to amplify a mandolin solo. Gives excellent results with any amplifier, radio sets, and record players.

MODEL SKH (hi-imp) LIST \$12.00

MODEL KKH, with hand volume control. LIST 18.00

Plug extra List 1.50

FOOT PEDAL, for making beautiful crescendos LIST 12.00

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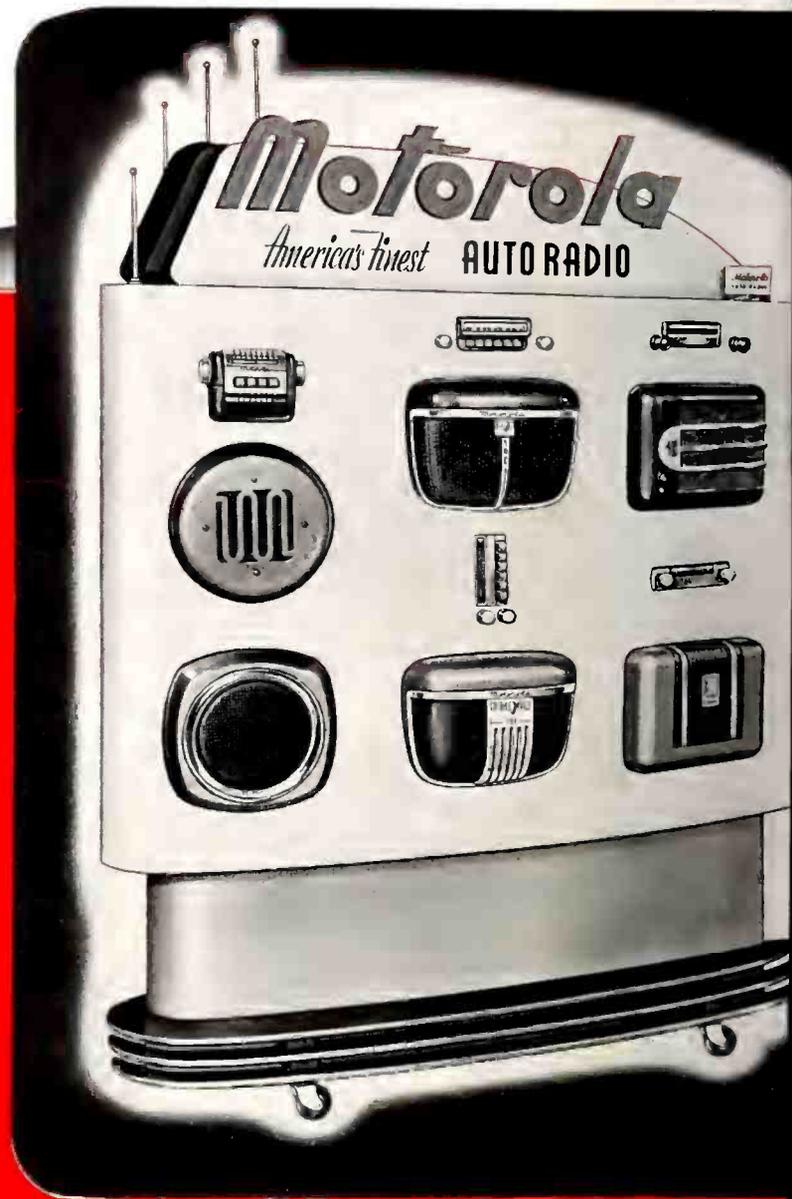


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